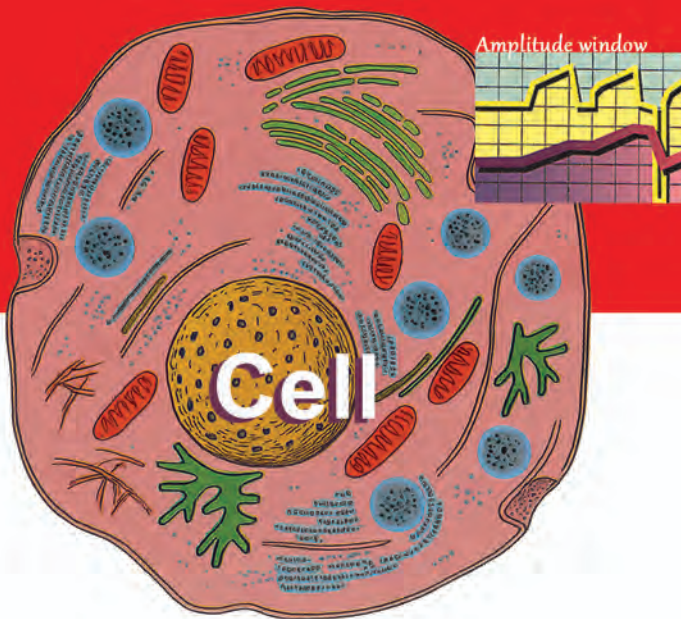


# QuantumMedicine

Dr. E.G. Fischer

## *Fundamentals of* **Quantum Therapy**



*Live 20 Years Longer?*  
*Physics – The Medicine of Tomorrow*



**PROF. DR. FISCHER AG**  
INSTITUT FÜR QUANTEN-MEDIZIN

This book offers an introduction to the effects of magnetic energy on the human organism.

Scientifically grounded and illustrated with numerous graphics and images, it clearly explains the differences between various types of magnetic fields and their therapeutic applications and indications.

Beyond that, it presents in detail the advantages and significance of using magnetic fields as a preventive tool in modern medicine.

A particular focus is placed on the Quantron Resonance System, a new development in which the author was significantly and extensively involved.

His own illness led entrepreneur, inventor, and engineer Dr. Gerhard Fischer to deeply explore the foundations of the long-established field of magnetic field therapy.

His book spans a broad arc from the magnetic ointments of ancient Egypt to the cutting-edge application of magnetic quanta in modern therapy, known as “quantum therapy”, a field that opens a new dimension in the history of medicine.

Together with his international research team from various universities, Dr. Fischer found a way to therapeutically mobilize ions in body fluids through the use of specific, pulsating magnetic fields.

The implications for medical science are revolutionary.

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Gerhard Fischer

# FUNDAMENTALS OF QUANTUM THERAPY

*„The opposite of a great  
truth is another truth“*  
Niels Bohr

Leben Verlag AG, St. Gallen  
1.12.2002



## Dedication

To my loyal companions, friends, mentors, and partners.

Prof. Dr. Ing. habil. Manfred Krauß  
Monika Brandstetter  
Dr. med. Marie-Louise Baude  
Roland Fischer  
Prof. Dr. Rainer B. Pelka  
Dr. Ing. Steffen Jügel  
Dr. Peter Philipp  
Prof. Dr. Eddie Meier  
Dr. med. Wolfram Haas  
Dr. rer. nat. Winfried Bauer  
Dipl. Kfm. Heiko Lindena  
Dr. med. G. Grohmann  
Prof. Dr. med. H. Spörkel

## Foreword

by Prof. Dr. Linus Pauling  
Two-time Nobel Laureate

QRS is one of the most important discoveries in physical medicine in recent decades. QRS restores natural vitality to both humans and animals. When combined with the right vital nutrients, many diseases can be prevented, degenerative illnesses healed, and vitality significantly increased. An improved energy balance also means greater quality of life — and a longer life expectancy.

About the pioneer Dr. Fischer, I said:

“Dr. Fischer came at the right time, in the right place, with the right idea. With his new quantum medicine, he will most certainly bring about a paradigm shift in medicine. A reform of mainstream academic medicine is long overdue. I hope Dr. Fischer will succeed in realizing his vision of establishing a university chair for quantum medicine at a recognized institution in the near future. I wish him the very best in that endeavor.” (Quote from the book by Prof. Dr. med. Robert O. Becker, USA — “The Body Electric”)

Prof. Dr. Linus Pauling

♦ ***QRS in Science***

## Foreword

by Prof. Dr. med. Robert O. Becker  
nominated for the Nobel Prize in 2000

I am happy to participate in the further development and realization of QRS therapy — particularly because, until now, I have never encountered a magnetic field therapy device that has been scientifically proven to achieve measurable effects inside the human body. The international patents held by Prof. Dr. Fischer AG are scientifically verifiable, reproducible at any time, and logically structured. The high-level scientific background and the determined pursuit of this new quantum medicine by Dr. Fischer will bring immense enrichment to academic medicine and open up great hope for new avenues of healing. I am pleased to contribute to this great endeavor, and I will do my part to ensure that this method — free of side effects — can be used effectively to help people.

The ultimate goal of science is to improve the health of human beings by helping them reconnect with their innate forces. It is thanks to the courage and curiosity of Dr. Fischer that we are now moving closer to this possibility — through a natural healing method that produces no harmful side effects.

A vision that is steadily becoming reality.

Prof. Dr. med. Robert O. Becker

## Foreword

by Prof. Dr. Peter Meißner  
Potsdam

It has always been visions that marked the starting point of great human undertakings endeavors that ultimately broke with conventional thinking, methods, and practices.

The history of discovery and invention is rich with visions some of them enduring, others quietly forgotten.

The vision to help others is certainly one of the oldest and most noble. And the author of this book has wholeheartedly embraced it. This becomes clear very quickly as one reads this volume.

Personal experiences, empathy for the suffering of others, and a clear determination to contribute meaningfully — all come together in Dr. Gerhard Fischer as a unified driving force.

Persistent pursuit of this goal and the involvement of qualified scientists have produced results that offer genuine hope.

Out of vision has come action.

Prof. Dr. Peter Meißner

## Foreword

by Prof. Dr. S. D. Jovanovic  
University of Belgrade

In his efforts toward self-preservation, humanity seeks support wherever it can be found — whether through conventional medicine or alternative, natural remedies. But in doing so, people all too often fall victim to charlatans and amateurs. This is why Dr. Gerhard Fischer, drawing on a wealth of experience, wrote this book on the paradigm shift in magnetic field therapy at precisely the right time. Given the sheer number of illnesses and civilization-induced ailments that can be treated through biological resonance, this book offers new orientation and concrete assistance.

Dr. Fischer commissioned me to conduct independent control studies at our university in order to validate the results of the research he had previously initiated. We were able to confirm 80% of the findings and even added new insights of our own.

As a result of this collaboration, we hope to soon make available state-of-the-art therapeutic devices that operate without side effects. In this context, Dr. Fischer also accepted a position as a visiting professor, tasked with preparing our students for the future challenges of medical technology and health economics — a role in which he has been highly successful. I would like to thank him once again for this contribution. With my highest regard and best wishes for continued success, I recommend this book — which will bring new hope, real support, and serve as a valuable guide for many.

Prof. Dr. S. D. Jovanovic

## Foreword

by Prof. Dr.-Ing. habil. M. Krauß  
University of Technology Chemnitz

When I first met Dr. Fischer in 1997, he outlined for me – passionately, though still in the form of a thesis — the foundations of his QRS therapy. It was immediately clear to me that a scientific breakthrough had occurred. While this new development was still in its early stages, its full potential was not yet foreseeable.

Now, only a few years later, this quantum therapy, developed on the basis of a specialized magnetic field therapy signal with the fundamental aim of modulating ion transport, is showing an ever-widening range of therapeutic effects — across a growing number of diagnostic fields, and with hardly any side effects reported so far. A particularly convincing demonstration of this was the international symposium held on April 2, 2001 in Darmstadt / Weiterstadt, titled: “QRS Magnetic Field Therapy: Present and Future – 1st International Symposium on Quantum Medicine in Research and Practice”. It was attended by experts and scientists from more than 11 countries, this event marked a significant milestone.

The ongoing development of QRS magnetic field therapy is also being shaped by key discoveries within academic medicine, and it is likely that many additional application areas will emerge in the future. A visionary decision was made early in the design of the Quantron Resonance System (QRS): No arti-

ficial waveforms were used — especially not sinusoidal ones. Instead, much like the natural propagation of waves in the ionosphere and Earth's magnetic field fluctuations, QRS generates a modulated, low-intensity, pulsating magnetic field that varies according to specific frequency patterns. Among other effects, this activates the vascular nitric oxide (NO) system in the human body — a system first discovered by pharmacologist Furchgott in the late 1980s. The result: measurable effects on cardiovascular function, metabolism and the immune response.

It is evident that QRS magnetic field therapy is helping to fulfill what one of the pioneers of modern bioelectricity, the American Robert O. Becker, once envisioned: to fundamentally transform medical practice and enable more effective, safer treatment methods. This new edition of Dr. E. G. Fischer's work, now in its 4th edition due to high demand, will make a significant contribution toward that end. May it provide physicians with new impulses and inspiration — and may it also speak directly to patients, offering clarity and opening the door to a shared dialogue.

Prof. Dr.-Ing. habil. M. Krauß

## Foreword

by Prof. Dr. Ing. habil. mult. Jürgen Waldmann (Eurosace Paris)

The current state of quantum therapy is characterized by a deep integration of scientific knowledge across many disciplines. Physicians are working to complement their experience in conventional medicine with the emerging findings of quantum therapy. Physicists apply their insights to help explain and refine the physical mechanisms and modes of action of this emerging form of therapy. Biologists and chemists aim to measure and characterize the underlying biological processes and to identify optimal conditions for enhancing quality of life. Electronics engineers are working on detecting and describing changes in vital parameters before, during, and after therapy sessions.

And the list doesn't end there — because the potential applications and effects of this therapy in both human and veterinary medicine are so diverse that future solutions will depend on interdisciplinary cooperation. Intensive research will undoubtedly uncover new possibilities for its application.



The author has made a concerted effort in this book to integrate the current body of knowledge and practical experience in magnetic field therapy and to present it in a way that is accessible to a broad readership. Despite the simplifications required by the book's scope and academic level, the author has succeeded in clearly elaborating the complex interactions between magnetic fields and the human body. The magnetic field is adequately defined by the appropriate intensity levels and corresponding frequencies.

All in all, this book conveys a clear understanding of the complexity of quantum therapy and the resulting processes within the human body, as well as the diverse demands this field places on a wide range of areas of knowledge — both now and in the future. It will help students and professionals from various disciplines to gain deeper insight and more accessible entry into the field of quantum medicine.

Prof. Dr. Ing. habil. mult. Jürgen Waldmann

## Foreword

by Prof. Dr. Eddie Meier  
Newport University, California and Switzerland

The scientific breakthrough has been made — or more precisely: Its essential core was not announced in a lecture hall but rather shared — gently rocking — aboard a sailboat in the bay of Bregenz on a warm summer evening.

It was there that Dr. Fischer, aboard his twin-mast motor sailer, served a remarkable vintage wine to the well-known medical science journalist Dr. Dirk Stahl and me — and revealed a milestone in medical science.

For the first time in the history of medicine and biology, a team of scientists led by Dr. Fischer succeeded in delivering energy directly to human cells, enabling the transport of ions — the most essential elixir of life — while flushing out toxins, metabolic waste, and free radicals from inside the cell. At the same time, the energy balance of the cell is restored. In short: the cell membrane potential is re-established to 100%. Dr. Fischer explained to us that every cell functions both as an energy store and as a power processor, constantly charging and discharging. Half of the energy a cell receives is needed to maintain its membrane potential; the other half fuels the person's daily functions. But modern life poses a massive burden on this system: lack of physical activity, constant sensory overload, artificial frequencies, poor nutrition, overstimulation — and worst of all: a 90% deficit in necessary movement. This lack prevents the body from maintaining the electromotive force necessary for ion transport into the cells. These deficiencies cause a reduction in membrane potential, which in healthy cells should range from  $-50$  to  $-70$  millivolts.

This automatically means that such a condition leads to a chronic energy deficit within the cell (= chronic diseases), and that when the membrane potential of a cell falls to only 20 millivolts (mV), these cells often mutate into cancer cells. Dr. Fischer's theory was confirmed by international tests and studies and was first disclosed in a global patent under the title "Ion Transport (into the Cell)" and "Charging the Cellular Amplitude Window with the Required Energy." Dr. Fischer went on to explain to us that there is a certain probability that, with the application of the **new QRS system** (quantum medicine), the biological structures or cells treated in this way will never again fall to a membrane potential of only 20 millivolts — which means that they would also no longer be able to mutate into cancer cells.

Dr. Fischer explained this to us with burning conviction, and this is why he fights with all his strength to ensure that this new system — the first to be built entirely on a scientific foundation and with scientific verification — will gain global adoption. He also added, almost in passing, that up to this day, it has never been scientifically possible to rigorously verify the biological or physiological effect of even a single pharmaceutical substance.

Dr. Fischer's second thesis is this: The greatest fallacy of modern medicine is the belief that there are 326 (or more) different diseases. In truth, there is only one disease: A cell that has become dysfunctional due to an energy deficit. This thesis, he told us, was confirmed for him after reading through over 6,000 studies from international medical literature — many of which explored healing through magnetic field therapy.

His third thesis challenges the assumptions of conventional magnetic field device manufacturers. They mistakenly believe they can influence specific diseases by adjusting frequencies between 1 and 30 Hz. But according to Dr. Fischer, regeneration of unhealthy cells does not depend on arbitrary frequency settings, but rather on delivering optimally composed frequency bundles and gentle amplitude patterns that match the body's own frequency structures. To this day, there has been no verified scientific proof that any one of these frequencies — as individually applied — produces reproducible therapeutic effects in specific conditions. This misconception has caused magnetic field therapy to fall into disrepute. What many failed to understand is that healing can only occur through precisely tuned frequency packages that resonate with the body's own biophysical rhythms — not with singular frequencies. Most importantly, magnetic fields are not “healers” themselves — they are energy carriers and transporters, empowering cells to recharge energetically, so that illnesses resolve naturally from within.

From the QRS patent text: “Thanks to the combined effect of pulse frequency, waveform, and impulse energy — delivered through precisely configured application coil geometry — it is now possible to transport ions from the body's electrolyte fluids (e.g., blood, lymph, or cerebrospinal fluid) directly into surrounding vascular walls and membranes. This is not possible under other physical conditions.”

Dr. Fischer's fourth thesis: The era of pharmaceutical dominance is nearing its end. Consider the historical trend: In 1910, 50% of all diseases were infectious; 50% were chronic. By 1950, infectious diseases had dropped to 20%, while chronic diseases had risen to 80%. Projections for the year 2000 predicted only 5% infectious diseases — and 95% chronic conditions. This shows clearly: Pharmaceuticals may have triumphed over infectious disease, but they have failed to address chronic illness. Chronic diseases, says Dr. Fischer, can only be permanently resolved through physical-level therapy — such as quantum medicine.

During his research, Dr. Fischer was particularly inspired by the work of two-time Nobel laureate Prof. Linus Pauling and Prof. Dr. Robert O. Becker, the latter of whom was also nominated for the Nobel Prize.

Dr. Dirk Stahl shared with us his personal meeting with Prof. Linus Pauling, who had already received and studied the American patent documents from Dr. Fischer — especially those relating to ion transport and the cell amplitude window. Prof. Pauling also had a prototype of the QRS device and had reviewed the manuscript of this book. In 1994, just six months before his passing, Dr. Stahl met again with Pauling and discussed the QRS technology at length. They had agreed to collaborate in the future. Dr. Stahl was amazed by how enthusiastic Pauling was about Dr. Fischer's pioneering spirit. "Dr. Fischer," Pauling had said, "has come at the right time, in the right place, with the right idea. His new quantum medicine is sure to bring about a paradigm shift in healthcare. The reform of conventional academic medicine is long overdue—and the reformer's name might well be Dr. Fischer." Prof. Pauling confirmed to Dr. Stahl that he was personally using the device — which had not yet been officially named — twice a day, and that he clearly felt a noticeable increase in energy. He went on to say: "Humanity needs this device

— from children to the elderly — so that the electro-biological processes in the human body can be reactivated. Otherwise, these functions can only be naturally achieved by engaging in at least 1.5 hours of physical activity or walking 15 kilometers daily.” Prof. Pauling expressed his willingness to support the system scientifically, conduct clinical studies, and recommend that Dr. Fischer also contact Prof. Dr. Robert O. Becker. These challenges helped us move forward in several decisive areas.

At that time, Prof. Becker was already world-renowned as a leading authority thanks to his books *The Body Electric* and *Cross Currents*, which became bestsellers in both the United States and Europe — and still are today. Unfortunately, we found that he was not as easy to locate as Linus Pauling, and I was given the task of putting my detective instincts and my American contacts to work.

As soon as I had found his address, I called Dr. Becker, who lived somewhere far up north in the state of New York. I explained my twofold request: on the one hand, to conduct an interview with him; and on the other, to ask for his professional opinion on the new Quantron Salut device, which could potentially lead to a more intensive collaboration with him. He readily agreed to meet with me. I was to fly to Syracuse in upstate New York the following Sunday and call him at nine o’clock Monday morning — at which point he would explain how to find him.

But he warned me in advance that even in mid-March, they were still experiencing deep winter conditions with frequent snowstorms, and that just recently people had become trapped and frozen to death in their cars. That sounded promising, I thought, as I discussed with Dr. Fischer which technical materials would be best to bring for Prof. Becker’s review of our Salut device.

Including the usual airport delays and wait times, I finally arrived at a hotel near Syracuse after a total of twenty-two hours of travel. At exactly 9:00 a.m. the next morning, I called Dr. Becker. He instructed me to take Route 81 north to Exit 42 and then to call him again from the gas station located there. He warned me to dress warmly, as another snowstorm was raging in his area. I reassured him that, being Swiss, I was quite accustomed to driving in snow. The highway drive was uneventful, and I found the gas station without difficulty. From there, he told me to take Route 177 all the way to its end, which would take about an hour and fifteen minutes. At the intersection with Route 12, he would be waiting for me in a blue Saab. That drive along the long, rolling hills of Route 177 is something I will likely never forget. Navigating through deep, fresh snow was truly a dangerous endeavor. After about an hour and a half of sliding along the road — during which the term “Amish sleigh” felt disturbingly accurate — and with the likely help of my particularly snow-savvy guardian angel, I finally reached the designated intersection. Dr. Becker arrived at almost the same time. As he was blind in one eye, he no longer drove on busy roads himself, so this time his daughter chauffeured him.

He got into my car, and our conversation became so lively that I completely lost track of the scenery. It wasn’t until we turned off the main road onto a smaller side road that I realized we were in the middle of a vast and beautiful forest. Dr. Becker’s house was a true multi-story log cabin, built from thick timber and filled with the rich scent of wood. About twenty meters behind it, he proudly showed me a second log structure, which housed his laboratory. His charming wife Lilly welcomed us warmly and, with typical American hospitality, immediately invited us to the table — it had now become lunchtime. After the delicious meal, we got to work. Dr. Becker watched the video presentation, studied the U.S. patent documents and product descriptions in detail, and nodded with increasing approval. As a se-

rious scientist, he did not commit immediately, of course, but promised to thoroughly examine the Salut system and its patented technologies himself. “If they meet my positive expectations,” he said, “then I’ll be on board.” (That has indeed since happened, and Prof. Becker’s foundational research has helped us move forward in a number of significant ways.) He explained that while there were several devices in the United States that worked with some form of electromagnetic fields, none had the solid and high-quality scientific foundation that he recognized in our system. Smiling, he flipped through Dr. Fischer’s copy of *The Spark of Life* and looked at the many underlined passages and margin notes “decorating” the pages. Then he inscribed it with the following meaningful dedication (translated from German): To Dr. Fischer – for having the courage and curiosity to work with magnetic fields as a therapeutic method. Dr. Robert Becker.

During the interview we recorded, I was delighted to see how much mental vitality, drive, and enthusiasm Dr. Becker still possessed—not to mention the immense breadth and depth of experience he had gained over a long and accomplished life as a researcher. At the same time, the idea emerged to publish his seminal work *The Body Electric* in German (and soon in other languages) — naturally updated to reflect the latest scientific understanding at the beginning of the 21st century. That project has since been realized: *The Body Electric – Körperelektrizität*, published by Leben Verlag AG, St. Gallen (ISBN 3-9520560-5-7).

As I took in the landscape on the drive back, I suddenly understood why a scientist who had spent his entire life warning about the dangers of electrosmog and environmental pollution would choose to dedicate the remainder of his research life to a place where the environment remained largely intact and free from harmful electromagnetic exposure. That, I thought, is what it means to have true congruence between one’s words and one’s actions.



## In Memoriam

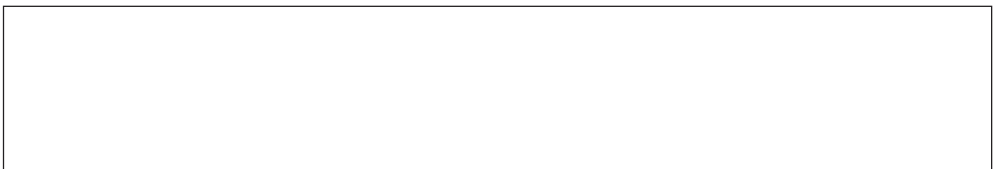
Prof. Dr.-Ing. Herbert L. König (passed away in 1996)  
Project Director and Co-Inventor of Quantronik, 1981-1996

The current state of knowledge could only have been achieved through the collaboration of a wide range of research personalities. I would like to express my special thanks to the scientists involved in development and research:

**Prof. Dr.-Ing. M. Krauß**, Chemnitz University of Technology  
**Prof. Dr. rer. nat. G. Fischer**, University of Graz  
**Prof. Dr. med. R. O. Becker**, New York State University  
**Prof. Dr. med. M. Grandi**, University of Milan  
**Prof. Dr. med. V. M. Baranov**, Space Research Center Moscow  
**Prof. Dr. med. F. Douwes**, St. George Clinic, Bad Aibling  
**Prof. Dr.-Ing. S. D. Jovanovic**, University of Belgrade  
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**Prof. Dr. med. H. Spörkel**, University of Münster

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## **Author's Preface to the Revised Edition**

When the first edition of *Fundamentals of Quantum Therapy* was published in early 1996, the idea of a “third millennium”—the era of medicine we hoped to usher in with Quantroniks — still seemed far off. Now, the new millennium is already part of our everyday lives. And our development, the Quantum Resonance System (QRS), has become increasingly recognized - both among forward-thinking medical professionals and an informed public.

As early as 1992, when we made our findings public, the patent application spread like wildfire throughout the scientific community. Following the release of the first edition of this book, we were genuinely surprised by how rapidly interest grew. Soon after, we found new and larger partners in research and development. The number of institutes, clinics, and scientists involved in QRS efficacy studies increased significantly. By now, nearly all of the fundamental experiments outlined in the first edition have been internationally confirmed, often multiple times — and most of the formerly theoretical applications in research, medicine, and prevention have been successfully tested in practice.

As exhilarating as the development of Quantroniks has been over the past four years, it was equally exhausting to pursue international patent recognition — even with the support of such renowned advocates as Linus Pauling, who was awarded two Nobel Prizes in the last century. The long-overdue reform of academic medicine through quantum medicine — which he himself spoke of — was, of course, not universally welcomed by the established medical-industrial complex. In fact, I often found myself spending more time with patent attorneys than in the laboratory or in dialogue with healthcare professionals. Yet many doctors, alternative practitioners, and pharmacists especially in Germany, where they face considerable political pressure have independently found their way to quantum therapy. I recently received the



news that QRS has now been classified as an “over-the-counter” product, available in pharmacies. The time for a new path has come earlier than expected!



REGIERUNGSPRÄSIDIUM  
KASSEL

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**Apothekenübliche Waren im Sinne von § 25 Apothekenbetriebsordnung (ApBetrO);  
Magnetfeldtherapiegerät**

Sehr geehrt Damen und Herren,

aus den mir vorgelegten Unterlagen, insbesondere aus der Konformitätserklärung, geht hervor, daß das von Ihnen vertriebene Magnetfeldtherapiegerät „Salut“ ein Medizinprodukt im Sinne des Medizinproduktegesetzes (MPG) ist. Aufgrund der Eigenschaft als Medizinprodukt stuße ich dieses Gerät als eine apothekenübliche Ware im Sinne des § 25 ApBetrO ein. Diese Einstufung treffe ich jedoch nur für meinen Zuständigkeitsbereich.

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Im Auftrag

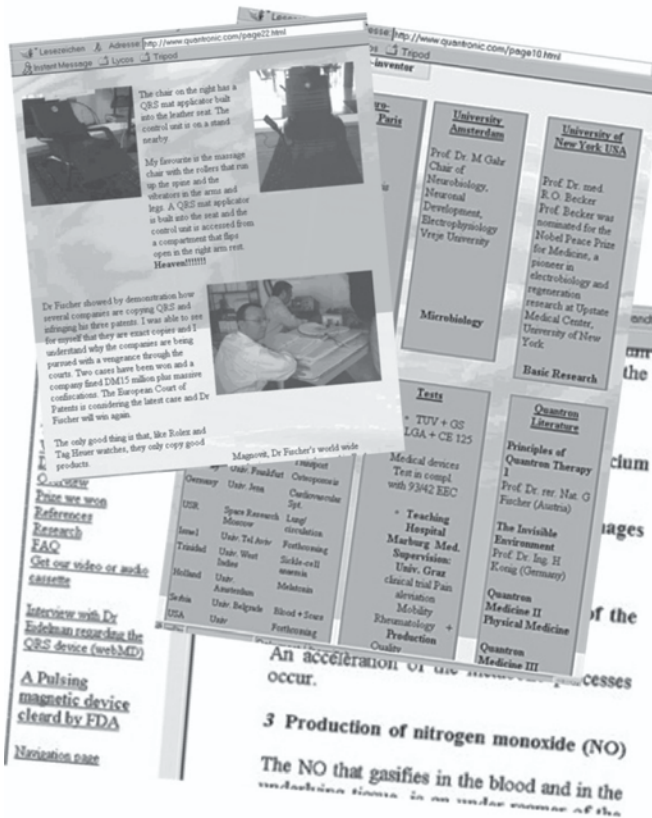
(Koch)

Regional Council of Kassel – Goods Commonly Sold in Pharmacies According to Section 25 of the Pharmacy Operations Ordinance (ApBetrO); Magnetic Field Therapy Device

Dear Sir or Madam, Based on the documents submitted to me, in particular the declaration of conformity, it is evident that the magnetic field therapy device “Salut” distributed by your company is a medical device within the meaning of the German Medical Devices Act (MPG). Due to its characteristics as a medical device, I classify this device as a good commonly sold in pharmacies pursuant to Section 25 of the Pharmacy Operations Ordinance (ApBetrO). However, this classification is valid only within my area of responsibility.

Sincerely, On behalf of (Koch)

♦ **Quantum Therapy Gains Over-the-Counter Status**



In the United States, in Australia, and around the world, rapidly expanding Quantroniks competence centers have been established.

Unfortunately, the global attention surrounding Quantroniks has brought with it a side effect that every inventor of a globally significant innovation must expect: Coca-Cola has a secret recipe—Quantroniks does not. Everything essential is now patented, yes — but it's also fully transparent and publicly accessible. Today, thanks in large part to the first edition of this widely cited book, the entire world knows how to achieve ion transport within the body,

- ♦ **Quantroniks – A Global Presence Online**
- ♦ **Successful Products Always Attract Imitators**



and how to counteract the pathological energy deficit of cells. And naturally, successful products and ideas — unlike junk or hot air — are always open to imitation. No patent in the world can stop that. So it's only logical that I still spend a considerable amount of time with legal counsel, working to both warn off copycats and, where possible, invite cooperative minds into our global research and development network.

Wherever a quantum therapeutic device is being used around the world, the knowledge and experience gained should benefit everyone — so that the urgently needed shift in medical thinking in modern medicine can spread even more rapidly. With this thoroughly revised edition, we are once again taking a first step toward global knowledge exchange. We continue to freely share our insights. The essence of Fundamentals of Quantum Therapy remains unchanged: Our approach is still rooted in historical context, but the scope has expanded — from ancient Egyptian magnetic ointments to the modern NIRP method, used for precisely demonstrating the effects of successful quantum therapy.

Given the rapid acceleration of knowledge in our global research network, this new edition will no longer represent the absolute latest state of knowledge at the time of printing. However, for those who wish to stay continually up to date, there is now the possibility of doing so online. If you would like to send me a message electronically, you can reach me directly by email at: [dr.fischer@quantron.de](mailto:dr.fischer@quantron.de). Every piece of information — and every question — helps us to place the foundations of quantum therapy on an even broader base.

Dr. E. G. Fischer, August 28, 2000

♦ ***Quantum Therapy – Always Up to Date Online:***  
***<http://www.quantentherapie.de>***

## Preface to the First Edition

by Prof. Dr.-Ing. H. L. König (d. 1996)  
Technical University of Munich

In an ecological view of the world, human beings and their environment are traditionally understood in terms of physical realities — whether solid substances or gases.

Beyond the complex mutual influence described by the concept of ecology, a person's well-being, in the broadest possible sense, plays a crucial role in his or her overall existence. This applies both to the physical body and the environment in which it exists. Mind and body must be considered as an inseparable whole — as recognized by some of the oldest cultures in human history.

Perhaps it is due to the fact that the human body is perceived as matter, while the mind associated with it cannot be directly observed with the physical senses.

**In any case, the concept of well-being, as mentioned here, is generally interpreted first and foremost in bodily terms — whether in a state that, on one extreme, is considered excellent, or, on the other, as illness.**

In trying to remain as far as possible from this illness-defined state, human beings have **mostly sought help through physical means**. Thus, in the context of maintaining health, for example through proper nutrition, physiological approaches have played a dominant role.

- ♦ *Foreword by Prof. Dr.-Ing. H. L. König*
- ♦ *A Material Concept of Health*

People naturally turn to medicine in cases of illness. It is therefore not surprising that, for centuries, some of the most important remedies for human disease have been developed through **chemistry** — that is, from the realm of matter.

From this perspective, **the highly advanced pharmaceutical treatment of disease, as practiced in conventional academic medicine**, is entirely understandable.

However, when we look at the historical evolution of physics by comparison, it becomes obvious just how slower the general development of physics has been relative to chemistry — even though the pace of progress in physics has now accelerated significantly.

At the same time, there has been a growing recognition **that physics is gaining increasing importance in the field of medicine**.

This is clearly reflected in the ever-expanding array of medical devices being developed and improved for diagnostic and therapeutic purposes. In this context, the concept of “radiation” has become something of a magic word — both in a positive and negative sense.

Above all, electromagnetic radiation is worth noting here. It refers to a form of energy that exists in space and propagates at the speed of light — because it is not made of matter.

The physical properties of this radiation can differ significantly depending on its frequency — defined as the number of complete wave cycles per second. The term “electromagnetic radiation” already implies this: It is a combined phenomenon involving electric and magnetic fields.

♦ ***„Radiation“ – The Magic Word***

This type of radiation involves a form of energy associated with both electric charge and magnetism.

When the frequency of the radiation is very low, the electric and magnetic components behave almost independently, similar to static fields. In such cases, one refers to an electric field or a magnetic field, as each can exist in space as a distinct form of energy. However, beyond a certain minimum frequency, both fields appear together in a consistent relationship, forming what is known as coherent electromagnetic waves.

**Within the human body, the regulation of biological functions involves electrical voltages and currents, which primarily occur in the low-frequency range.**

Because these phenomena are inherently linked to both electric and magnetic fields, it is only natural to raise the question of their biological significance. This applies to both positive effects (in the therapeutic sense) and negative effects, the latter now often referred to by the popular term “electrosmog.”

One especially controversial issue is the non-thermal biological effects of low-intensity electromagnetic fields — particularly in the case of very low-intensity exposures. This topic remains the subject of intense scientific debate, especially in relation to exposure limits set for the general population, which define the maximum permissible levels. Unfortunately, this ongoing debate often overshadows the potential therapeutic use of low-frequency magnetic fields, which may or may not be applied, depending entirely on the individual attitudes and beliefs of the attending physician.

It must be considered a fortunate coincidence when a person like the author of this book, Dr. Gerhard Fischer, driven by **personal health experiences**, turns toward this area of inquiry based on personal health experience, in which magnetic field therapy ultimately proved to be the only effective

♦ *A Question of Dosage*

solution, and who now devotes his full energy to promoting and applying this therapeutic approach.

What will likely determine the inevitable success of this endeavor are Dr. Gerhard Fischer's personal qualities: his drive, vision for success, deep commitment, and excellent intuition for people — combined with a clear understanding of the economic and organizational conditions necessary to make it happen. But just as important is the author's instinct for surrounding himself with the **right scientists and leading professionals in both science and industry** to bring this project to life.

Prof. Dr.-Ing. Herbert L. König

♦ ***Working With Leading Scientists and Elite Industry Experts***

## FIT to the Power of 4

or:

How This Book Came to Be

Time is the fourth dimension.

Time we've had, and time our three-dimensional body has left to live.

Health and time — how are they connected?

Most people are born healthy and begin to develop a three-dimensional space in which they live in health. At first, they grow into the space of their own body, the “field” of their existence, and become adults.

If this process goes well, they become “fit” — that is, they fit properly into their body: Their personal “field” remains stable.

**But over the course of a lifetime, people also create a three-dimensional space outside their body: Their environment.** This includes not only their home and immediate surroundings, but also their dietary and exercise habits.

What is an environment, really?

Fields and environments exist throughout the universe. According to quantum physics, only when these meet does a fourth dimension emerge alongside the three spatial ones. Only then do “before” and “after” come into being. And only then can there be something that exists within that temporal framework. At first, this may seem paradoxical.

♦ *Life = Health + Time = Fit to the Power of 4*

Since we cannot see energy itself — only its effects — it's difficult to fully grasp. **It took physicists a long time to understand the foundations of chemistry. In fact, there is no such thing as “inert” matter in classical chemistry — there are only oscillating alternating fields interacting with one another. The matter that makes up our bodies is composed entirely of such force fields. Energy particles cluster together and matter emerges from this.**

**Our body is like a concert of an almost unimaginably large number of oscillating alternating fields.** At body temperature, atomic nuclei oscillate at a rate of 10,000,000,000,000,000,000,000 times per second. (Don't bother counting — that's 22 zeros.) Even individual atoms vibrate at a frequency roughly 7 zeros lower. Atoms that form molecules tend to have a primary frequency around  $10^9$  Hz — so, “only” 9 zeros. And if we examine a cell, the fundamental building block of the human body — a cluster of molecules — we measure approximately 1,000 oscillations per second. But this can vary greatly, depending on which cellular subsystem we're looking at. For example, nerve cells may oscillate only once every 10 seconds, but sometimes also up to 1,000 times per second.

Maybe you've noticed: **The larger and more complex a system becomes, the lower its frequency.**

Cellular aggregates — like the liver, kidneys, brain — each have a typical functional frequency. (How many times is your heart beating right now while reading this?) The digestive system moves in a particular rhythm. The skin renews itself in a specific cycle. Hormones and genes orchestrate the course of our lives — regulating what is, for the individual human being, the most gradual oscillatory processes. At this point, we begin to touch on the limits of physics — where things start to become philosophical, even spiritual.

♦ ***Our Body Is a Concert of an Almost Inconceivably Large Number of Oscillating Alternating Fields***

But we now return once again to the fourth dimension — the time of our lives. If all fast, short-duration oscillations are finely tuned to form a concert, then even the slowest rhythms can endure for a very long time. But **a single incorrect oscillation, one that doesn't fit the concert, might destroy the entire piece.** And precisely when everything else is perfect, this becomes most apparent.

Let's take a modern-day example:

**"Magic Johnson"**, the superstar of professional basketball, perhaps the highest-paid top athlete of all time. Who wouldn't have said that this athletic genius — with his unmatched physical control, mental strength, and focus — was **perfectly fit**?

But now, as the world knows that the AIDS virus resides in his body, this three-dimensional elite athlete has been stripped of myth. **This man — who likely still surpasses us all in terms of three-dimensional health — is only fit<sup>3</sup>.** Every movement of his body brings him closer to death. Health on demand — health within the fourth dimension — that elusive concept we all struggle to grasp.

Is there a kind of health that goes beyond superficial appearance? A form of health that lies beneath the surface of the moment? Is there a non-spatial structure responsible for someone being healthy — and staying healthy?

**What is it that keeps us well?** Is it merely a Platonic idea — or is it something that can be measured by scientific means?

♦ ***Three-Dimensional Health Isn't Enough  
Fit to the Power of 4 Is the Goal!***



What Is It:

## FIT to the Power of 4?

It is the invisible fields and oscillatory states that give health its fourth dimension. They are what ultimately determine health or illness, life or death.

But don't worry — this book won't get overly complicated. Anyone who can tell the difference between a train and an automobile will be able to follow. **The medicine of the third millennium will leave the rails of chemistry and instead follow the path of physics: more agile, faster, and more personalized.** We call it quantum medicine, or quantum therapy.

You may recall your school days, when you first learned how to translate numbers into drawings. It began with the drawing of a point, which by itself has no dimension until it is placed within a coordinate system.

**The 1st dimension** we come to know as distance. The point is located somewhere along a straight line.

**The 2nd dimension**, the plane, becomes clear when we position the point using two perpendicular lines that lie within the plane.

Already with **the 3rd dimension** — space — we can no longer realistically draw it on a flat piece of paper. We must resort to perspective projection instead.

Still, most people can imagine that such a third dimension exists.

♦ ***The Medicine of the Next Millennium  
Will Leave the Rails of Chemistry Behind***

We assume that the third axis, which we need to define a point in space, stands perpendicular to the other two. We can construct models of this: Spheres symbolize atoms in space and are connected by rods to fix their position. Many of us have seen such a model before — like the classic atomic model — and we say:

“Ah, that’s the nucleus, and those are the electrons.”

But in truth, that’s not really what they are — only what the model suggests. Reality does not contain “static states.” It never stands still, because reality also includes **the fourth dimension: time.**

All our ideas about time slip away from us, because we ourselves live within it — because all our thinking and imagination takes place inside time. We can never overtake it — time is always faster than we are. But we can come close.

**Only a being that lives forever could ever catch up with time.**

Even God, according to theologians, cannot exist outside time. And if there were many gods — as the ancient Greeks believed — then the highest of them, the one that existed before the creation of life and the universe, was named Chronos — meaning: Time.

**Max Planck**, with his quantum theory, was perhaps the first to try to understand dynamic space on a scientific level. **Albert Einstein**, with his theory of relativity, laid the foundation for our ability to distinguish between when we are speaking of space and when of time.

Modern physics has shown that reality is not “square, practical, and perfect.” The lines that govern our lives are not simply at right angles to one another, as our school models often depict. Life unfolds along a probabilistic trajectory, moving from one event to the next — interwoven with jagged leaps — fluctuations we can identify after the fact, but which we can never precisely predict.

♦ ***Max Planck and His Quantum Theory  
Are the Prerequisites for Quantum Therapy.***

Einstein once said: “**God does not play dice**” Today’s physicists — among them perhaps the most brilliant mind, **Stephen Hawking** — strive to detect patterns in this cosmic dice game, and have at least succeeded in examining what the fourth dimension has yielded so far: **A Brief History of Time.**

If we were to extract **a single cell** from our body and supply it with optimal nutrition, then according to current knowledge, that cell could **theoretically live for about 150 years.**

In fact, some people almost reach that age. Personally, I believe that our current average life expectancy of around 70 years could be doubled to 140 years — if we can master the immune system, stimulate cell regeneration, and supply our cells with proper nutrition. After all, it’s pointless to accelerate metabolism using electrophysical means if the substances being metabolized are of adequate quality. A high-performance engine also requires high-quality fuel. **In today’s diet, most vitamins and minerals are either destroyed during processing or were never abundantly present to begin with — due to industrial mass farming and depleted soils.**

**One example: A kilogram of tomatoes grown 100 years ago, on natural and uncontaminated soil, contained as many vital nutrients as 11 kilograms of modern tomatoes. Of course, you can’t eat 11 times as much as people did a century ago. So the only real solution is to supplement our diet with high-quality, concentrated nutritional products to compensate for the loss of vital substances.**

♦ ***A High-Performance Engine Needs High-Quality Fuel***

With optimal nutrition, not all **dimensions of health** are covered.

We now understand the nutritional dimension fairly well: We know what a cell needs over time to fulfill its purpose. We recognize the importance of both intake of substances and the equally crucial elimination of waste. These two aspects form the “surface” on which life takes place. **Nutrient intake** is the **1st dimension of health**.

Since the cell’s functioning is essentially a metabolic process, the exchanged substances must be removed afterward. **Excretion** is the **2nd dimension of health**.

Regarding the biological operating space — the **3rd dimension of health** — we still know relatively little. It is defined by the arrangement, number, and type of DNA molecules that make up the human **genome** — the full repository of construction plans that dictate the space a cell is to fill throughout its life. We may be able to duplicate this entire repository countless times and thus **clone** a cell — but our understanding of the individual components, such as genes, is surprisingly incomplete.

What is certain, however, is this: The human genome is not simply a chronological sequence of blueprints — it is an interactive network, and its individual activities are triggered or terminated by the **4th dimension of health**. There are switches on genes that turn them on or off. There are likely even master switches that activate or deactivate all others — thus starting or ending individual life: the **gene for life** and the **gene for cell death**.

In this 4th dimension of health, a cell’s living space must defend itself with flexibility.

♦ ***Humans Could Live to 150 Years Old.***  
***Scientists came to this conclusion when***  
***they provided human cells with optimal nutrition.***

Nutrition and excretion must be evaluated here — not merely carried out. So-called “healthy eating” can also nourish a malignant cancer cell or a bacterium very well. Viruses can smuggle false blueprints into the genome. A cell must then make the decision to self-destruct if it is to avoid endangering the rest of the cell system.

But this dimension is barely connected to the material components of spatial dimensions. It instead relates to the **energetic properties of space — to fields, their radiation and frequencies**, whatever each of those may specifically mean in scientific terms.

The fourth dimension of health cannot be understood using the simplified time model used in classical physics. It is not about the duration of a cell’s life in its spatial dimensions, but rather about the energetic survival of the cell’s blueprint — **the energetic preservation of the “idea” of the cell.**

Whenever I give lectures on quantum therapy and tell my audience how old we could actually become, sooner or later emerging ethical concerns arise. Some claim that if humans were to live twice as long, it would be a total disaster. They argue that such a lifespan is not even desirable. These objections, of course, must not be taken lightly.

**Naturally, older people wouldn’t retire at 60 — they would be overall younger and more capable. All the degenerative and chronic illnesses that so often arise at today’s retirement age would no longer appear at that stage of life.**

But what is far more important in the long run and on a broader level is this: The social fabric would improve, because the proportion of deeply experienced and educated individuals — who would still have an influence on economics and politics — would be markedly greater.

♦ ***In 1870, the average life expectancy was 37 years. Today, it has roughly doubled. Quantum medicine will double life expectancy again.***

Just think back a little over 100 years: **In 1870, the average life expectancy was 37 years — and today, we’ve roughly doubled that. Had a Dr. Fischer at the time dared to predict that humans would live twice as long, he likely would have encountered the same objections we hear today.**

**I am convinced that it will soon be possible — even in the short term — to double the average lifespan once again, as we gain increasing knowledge about the “blueprint” – the idealized state of the cell. This growing understanding allows us to control and regulate all essential parameters of that state — such as the supply of vital nutrients or the compensation for lack of physical activity by applying targeted pulsating quantum fields.**

This “idea” of the cell cannot (yet) be perceived by us directly, but we can now measure it as energy — more precisely, as electromagnetic energy. **We are, for the first time in human history, truly capable of analytically and measurably approaching individual life.** We can now not only identify a liver, a brain, a blood vessel, or a heart by the organ-specific electromagnetic emission — but, in theory, even the entire human being. Of course, in a strict scientific sense, there is not yet such a thing as scientifically validated aura imaging.

But thanks to nanotechnology and scanning tunneling microscopes, we are rapidly moving toward the ability to represent four-dimensional energy states in an individual living organism — just as we can already measure and trace electromagnetic pollution today using an “electrosmog phone.” **Although the genetic fingerprint already exists, the personal electromagnetic signature is now within reach.**

- ♦ ***The genetic fingerprint already exists.***
- ♦ ***The electromagnetic fingerprint is coming.***
- ♦ ***The Electromagnetic Individual***

But in this book, I don't want to talk about visions of the future, but rather about what we can practically do today to engage with the 4th dimension of health.

Long before anyone knew about the body's internal repair mechanisms, doctors were already able to heal wounds and set broken bones. And even though it's still largely a mystery today how the entire human being functions electromagnetically, we already understand certain parts very well, and we can now achieve healing results that seem miraculous — results brought about by energetic forces that are invisible and immaterial, yet measurable and controllable using modern methods.

## High-Tech for Hippocrates?

The medical use of immaterial electromagnetic forces has, as we will see, a very long tradition in the history of medicine. But these methods only became a top topic in medicine once quantum physics made it possible to precisely describe and measure the underlying mechanisms.

Only with this high-tech foundation was it possible to invent medical devices that truly represent a kind of quantum leap in the development of healing arts.

The first technical term coined for this in the last century was magnetic field therapy. Later, people increasingly began to speak of inductive magnetic stimulation. Together with my research colleagues, we have compiled and reviewed over 6,000 scientific publications on this topic — just from the 20th century alone.

♦ ***High-Tech for Hippocrates***  
***Quantum Therapy: The New Top Topic in Medicine***

Essentially, the technical terms used up to this point have not really captured the core idea. We have therefore chosen a new expression, one that is meant to represent the **combination of quantum physics, therapy, and cybernetics** (i.e., control systems technology): the term quantum therapy, or quantum medicine.

♦ ***Quantum Therapy = Quantroniks + Bionics***  
***The Quantum Leap in Medical Science?***



## Quantroniks

or:

The Breakthrough Is Achieved

July 2, 1992

It was a picture-perfect day — the kind of day you find in brochures that promote the Bavarian capital, Munich, as a tourist destination.

The “Föhn”, a warm downslope wind from the Alps, had transformed Munich into a city with Italian-style weather, making the nearby mountains seem within arm’s reach.

This wind excites millions of people: some with euphoria, others with pounding headaches. Within just a few hours, it had swept the clouds from the blue-and-white Bavarian sky and bathed the Alpine foothills in blinding sunlight.

It wasn’t the first time I’d been on the road to Munich in such weather. For years, extreme weather systems had severely disrupted my functioning, rendering me nearly nonfunctional. But this time was different.

My colleagues had given me a small box filled with electronics, connected to a pillow strapped to the backrest of the driver’s seat. I had plugged it into the car’s cigarette lighter to activate it.

**“A first prototype of the Quantron-Mobile device”,**  
they had said. “To celebrate the occasion!”

And indeed — we had something to celebrate on this July 2, 1992.



Because my destination that day in Munich was the German Patent Office, and the invention I was about to submit was what we now call **Quantroniks**.

<p>①⑨ <b>BUNDESREPUBLIK</b> <b>DEUTSCHLAND</b></p> <p></p> <p><b>DEUTSCHES PATENTAMT</b></p>	<p>⑫ <b>Offenlegungsschrift</b> ⑩ <b>DE 42 21 739 A 1</b></p> <p>⑲ Aktenzeichen: P 42 21 739.3 ⑳ Anmeldetag: 2. 7. 92 ㉑ Offenlegungstag: 14. 1. 93</p>	<p>⑤① Int. Cl. 5: <b>A 61 N 2/04</b> H 01 F 7/06 A 61 B 5/02 A 61 B 10/00 G 01 R 33/00 H 01 Q 7/00 H 01 Q 3/24</p>	<p><b>DE 42 21 739 A 1</b></p>
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<p>③⑩ Innere Priorität: ③② ③③ ③① 09.07.91 DE 41 22 718.2</p> <p>⑦① Anmelder: Dr. Fischer AG, Vaduz, LI</p>	<p>⑦② Erfinder: Warnke, Ulrich, Dr., 6601 Scheidt, DE; Fischer, Gerhard, Dr., Vaduz, LI; König, Herbert L., Prof. Dr.-Ing., 8000 München, DE</p>
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Federal Republic of Germany – German Patent Office – Published Application DE 42 21 739 A1  
File Number: P 42 21 739.3 - Filing Date: July 2, 1992 - Publication Date: January 14, 1993  
Applicant: Dr. Fischer AG, Vaduz, Liechtenstein - Inventors: Dr. Ulrich Warnke, Dr. Gerhard Fischer, Scheidt, Vaduz, Prof. Dr.-Ing. Herbert König, Munich

**“The invention pertains to devices for transporting ions — particularly protons — from intra-corporeal fluids into and through the surrounding vessels and membranes.”**

So reads the application with which we officially disclosed the invention:

“By means of specially configured electromagnetic fields, potentials are generated in the vessel walls or membranes that induce the transport of ions or protons. **The device, for example, can be used to transfer ions from blood flowing through a vessel into the surrounding tissue.**”

Let’s spare ourselves the full extent of the patent jargon and say it plainly: Quantroniks is about positioning discrete energy packets — magnetic quanta with precise dosage at targeted locations in the body, thereby triggering predictable physiological effects within the organism.

♦ ***First Patent Application 1992***  
***Targeted Proton Transport in the Human Body***

Back then, when I parked in front of the Deutsches Museum for that very first filing, ready to cross the Isar Bridge in high spirits — and for the first time during a Föhn wind without a headache — I knew one thing for sure: Our invention was ready, after 20 years of research, to be introduced to the public. Someday, perhaps the original prototype of the **Quantum Resonance System** (QRS) from my car might even be put on display in the world's largest museum of technology.

That patent application, submitted in 1992, has since caused a international recognition. Numerous authors have quoted from the first edition of this book, respected universities and institutions have tested and documented the system, and online forums now discuss it — from Australia to Indonesia to America. Today, QRS patents and trademarks are registered in the following countries: Albania, Algeria, United Arab Emirates, Argentina, Armenia, Azerbaijan, Australia, Belgium, Bosnia, Brazil, Bulgaria, Chile, China, Denmark, Germany, Finland, France, Georgia, Greece, Great Britain, India, Indonesia, Ireland, Israel, Italy, Japan, Yugoslavia, Canada, Kazakhstan, Kyrgyzstan, Korea, Dominican Republic, Croatia, Cuba, Kuwait, Liberia, Libya, Liechtenstein, Luxembourg, Morocco, Macedonia, Mexico, Moldova, Monaco, Mongolia, New Zealand, Netherlands, Norway, Austria, Portugal, Poland, Romania, Russia, Saudi Arabia, Sweden, Switzerland, Slovakia, Slovenia, Spain, South Africa, Sudan, Syria, Tajikistan, Taiwan, Czech Republic, Tunisia, Turkey, Ukraine, Hungary, USA, Uzbekistan, Vietnam, Belarus.

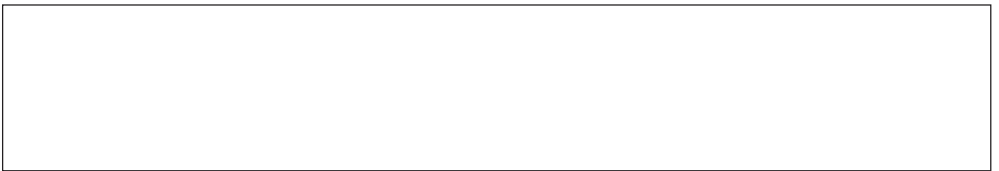
And all of it comes down to one thing:  
A therapy without chemistry -  
the medicine of the third millennium.

♦ ***Complex patents today can only be developed through interdisciplinary science.***

## Chapter 1

# CONFRONTED WITH ILLNESS





## Chapter 1

**Confronted With Illness**

I was born in a truly beautiful part of the world — the German-Swiss border region. However, the timing of my birth was far from ideal: Germany, my homeland, found itself in the most desperate state in its history — at the very end of World War II.

As the great British historian **Arnold Toynbee** observed after a lifetime of studying the rise and fall of civilizations throughout human history: The world's great cultures never arise where life is easy — nor do they emerge during times of comfort. They grow from great challenges, whether historical, climatic, or material.

We — the children of post-war Germany — certainly had no shortage of historical challenges. But for us, they felt less historical than personal. While it was mostly our parents who rebuilt the country, we ourselves felt first-hand what it meant to create new structures under the harshest material conditions — structures that would eventually lead to what came to be called: **“The Economic Miracle.”**

It was no miracle at all.

♦ ***Therapy Without Chemistry -  
The Medicine of the Third Millennium***

**Planning, tenacity, perseverance, and diligence were virtues well known to the war generation of Germany — virtues that, however, carry a double-edged nature.**

Even today, it's remarkable how these same virtues were capable of driving such vastly different systems: Nazi Germany, socialist East Germany, and the liberal Federal Republic — all within a single generation.

“Never again hunger, never again cold, never again war.” That was the mantra embedded in every mind — and it became the first guiding principle of my childhood.

The prophet of this new era was a short, stout professor who physically embodied the vision of postwar prosperity: **Ludwig Erhard**, who shaped Germany's postwar development at least as profoundly as Chancellor Adenauer. The people may not have understood his economic theories about the advantages of the free market, but his popular appearance — his entrepreneurial cigar, combined with his modest demeanor — resonated in the age of emerging television. This man was no longer hungry. This man was doing well. And that was exactly what everyone wanted.

Of course, the early market economy of my youth also revealed its problematic underside: Some people shamelessly exploited the new freedoms to achieve success at the expense of others. Back then, values like partnership, teamwork, and sharing profits with employees were still considered idealistic notions. But those ideals took root early on in my life as personal principles. From a young age, I was determined to become a successful entrepreneur, and I've never regretted choosing to act ethically from the very beginning — even when the law didn't require it.

♦ ***Planning, Tenacity, Perseverance, and Diligence  
Virtues That Built — and Tested — a Nation***

From early on, I had a strong interest in technology, especially in mechanical engineering. The logic behind how the individual parts of a working machine interlock and depend on each other fascinated me.

Even as a schoolboy, I realized that discipline and restraint were essential for success. As a boy, I passed on many of the pleasures my peers enjoyed, choosing instead to save my allowance.

After completing my vocational training and studies, I took a job at a machine factory. Within just a few years, I had acquired enough knowledge and saved enough money to lay the foundation for my own company. Success came quickly and without any significant problems — everything soared upward.

Over the years, I went on to found and acquire additional companies. Whatever I touched seemed to turn into success — but that success came at a price: Because everything grew so rapidly, there was hardly time to consider how I might delegate responsibilities. After all, I was still very young and felt physically and mentally capable of managing an even larger operation.

And so, it was almost inevitable that I reached the limits of my physical and psychological endurance. At the age of 35, I began to experience increasingly severe gastrointestinal pain and tension headaches as a daily companion to my workday.

Doctors I consulted advised me to slow down — but that was something I could not and would not accept, because otherwise the structure I was building would have collapsed. The medications I was prescribed provided temporary relief, but I required increasingly higher doses to feel any effect. Thanks to my wife, a trained pharmacist, I had almost unlimited access to these medications. Without fully realizing it, I had become dependent on them.

♦ *Victim of the Manager's Disease*



Because I traveled frequently by car for business, I began to develop rheumatic pain in my left shoulder — the side exposed to the often-open driver's window. I rushed from one specialist to the next, but each visit only led to new medications. Some were prescribed solely to suppress the adverse effects of other pills and injections.

My wife, who was watching my condition with growing concern, urged me to slow down my ambition and assign responsibilities. I didn't listen. I believed I had to keep all the strings in my own hands. We began to grow apart. Eventually, she gave me an ultimatum: Choose: your marriage or your ambition. I didn't understand her concern. I thought she was being selfish.

When she left me, I collapsed — both physically and mentally. The threads of leadership in my company slipped from my hands. After being discharged from the hospital, I realized I was no longer capable of completing the structure I had worked so hard to build.

I sold my companies. What followed were deep episodes of depression, regularly accompanied by debilitating migraines. I shut myself off from the world and retreated to our country house in the Austrian mountains, a place I had hardly had time to enjoy before. In the peaceful climate, I began to paint and read intensively, slowly working toward a self-analysis of my physical and emotional state.

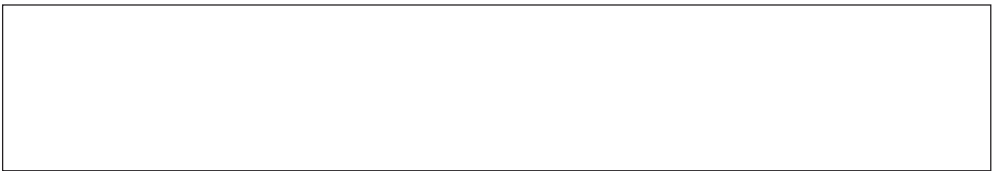
That's when I first encountered the concept of "biomagnetism".



## Chapter 2

# BIOMAGNETISM: AS OLD AS HUMANITY





## Chapter 2

## **Biomagnetism: As Old as Humanity**

Biomagnetism, also referred to as **animal magnetism**, describes healing phenomena attributed to magnetic influences or achieved with the use of magnets — effects that have reappeared time and again over the course of thousands of years. Even though the accounts of these seemingly miraculous outcomes often fail to meet modern scientific standards in terms of methodology and reproducibility, they cannot simply be dismissed as nonsense or quackery.

**Just because science hasn't yet been able to explain certain phenomena doesn't mean they are fundamentally inexplicable. Even today, we still don't fully understand why or how insulin works — and about 80% of all pharmaceutical products lack clear proof of efficacy. Whoever heals is right — and it's hard to dispute that biomagnetic methods have produced genuine healing results.**

It's possible that all the successes of biomagnetism may ultimately be attributable to mechanisms we traditionally label as placebo response, autosuggestion, and hypnosis. Still, we are dealing with real, observable effects — and the task of science should be to determine what physical and chemical processes the psyche uses to bring them about. Instead, many scientists and medical professionals take a step back and say: “If we can't explain it, we can't apply it.”

♦ ***Whoever Heals Is Right  
80% of All Pharmaceuticals Lack Proof of Efficacy***

It is rare to find serious scientists who are not deterred in this area and who continue to search for a scientific explanation of such phenomena.

Quantum therapy, whose development is described in this book, makes use of widely accepted scientific methods that are employed at renowned universities and institutions and are beyond reproach. However, Quantroniks would never have reached its current level of development had I not stumbled — by chance — across the notable success of biomagnetic methods, which first introduced me to the field of magnetic field therapy. It was only through this experience that the following questions emerged: “How can we improve these effects? Which mechanisms can be isolated, analyzed, and explained — and then translated into technology?” Only then could Quantroniks become something more than just a topic for purely academic discussions.

There are many roads to Rome — and in recounting my own detours on the journey toward a scientifically validated method of healing, my aim is not just to fulfill some chronicler’s duty. Many readers may have been searching for an alternative path for years. They will likely have had similar experiences to mine: disappointments, short-lived successes that didn’t last. With these chapters, I want to show that such a path doesn’t have to end in failure. What matters is that we move tirelessly and persistently in the right direction. And **that direction — away from chemistry and toward physics — is the right one. It is the path of life sciences: the path of biology!**

But before going further, let’s take a moment to clarify some of the often vague and overlapping terms. It is not uncommon to find that even **the miracles of Jesus described in the New Testament** — for instance, healing through the laying on of hands — are labeled as **biomagnetism**. Surely in our enlightened age, no one will claim that it’s inappropriate to view these biblical accounts through the lens of science. Even theology students are taught this in their first semesters.

♦ ***The Path Away From Chemistry and Toward Physics  
Is the Path of Biology!***

However, I am not aware of a single study that successfully derives anything conclusive from the extremely brief descriptions of these miracles. Attempts to draw plausible and coherent connections between Gospel accounts and any documented therapeutic use of magnets have not been successful. Perhaps the so-called Qumran Scrolls from the Dead Sea, which date back to the time of Jesus, will one day allow rational explanations of His miracles. However, it will likely take decades before these valuable historical records become accessible not only to historians, linguists, and theologians but also to the natural sciences for in-depth investigation.

Even though there are accounts from early and classical antiquity — from **Babylonian healers** to the **Egyptian pharaohs’ physicians, who produced magnetically treated ointments**, all the way to **Thales of Miletus** and **Aristotle** — which point toward early magnet-based healing practices, the same conclusion applies as with biblical miracle accounts. The scope and substance of these traditions are insufficient to allow for a solid assessment of these healing methods.

Things become somewhat more concrete in Roman times. The Roman authors **Caius Plinius Secundus** (Pliny the Elder) and **Pedanius Dioscorides** describe treatments for the following conditions using lodestones (i.e., naturally occurring magnets):

Eye diseases

Burn injuries

Urinary problems

Gynecological discharges

Hemoptysis (coughing up blood)

Uterine bleeding

Internal tumor conditions

♦ ***Ancient Magnetic Therapies — Used for eye disorders, burns, internal tumor treatment, and much more***

The physician and philosopher Avicenna (980–1037), better known today as Abu ibn Sina, whose name gained worldwide fame through Noah Gordon’s bestselling novel *The Physician*, was the first to describe magnetism as a special force and used it to treat hepatic conditions.

In 1256, a healer named Halifa from Aleppo advised using magnets to extract broken lancets left behind during bloodletting procedures. In the same century, a physician named Serapon treated poisoned wounds with finely ground magnetite (natural magnetic stone).

(Interestingly, Serapon’s therapy has a modern equivalent in state-of-the-art cancer treatment: ferromagnetic fluid is introduced into a tumor, which is then destroyed via induction.)

From the Western Middle Ages, there are only few reports about the medical use of magnets. We know only that amulets made from magnetite, often engraved with lucky symbols, were widespread. It wasn’t until the early modern period that physicians began using magnetism more frequently - especially the towering figure of that time: Theophrastus Bombastus von Hohenheim, better known as **Paracelsus**. A few important quotes from him:

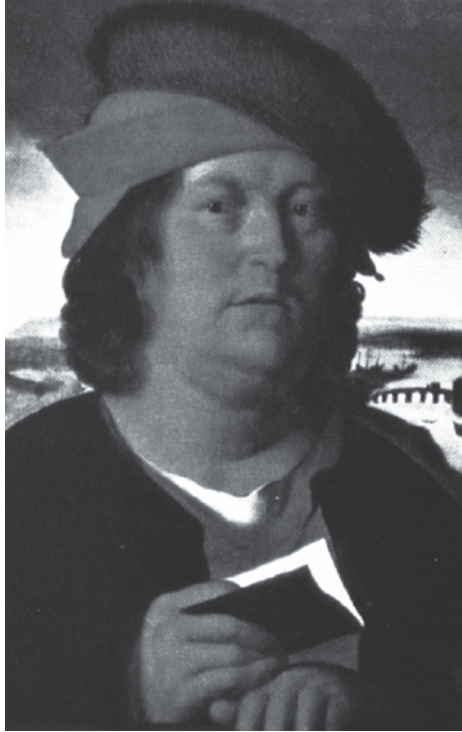
*“The magnet exerts its attracting force on all iron-related disorders of the body — they are called martial precisely because they are attracted by the magnet, just like iron or steel. This includes **female discharges**, all diseases that spread circularly from a center, and all those that run from root to branch...”*

*“...The magnet has the power to fix the disease at its center. Therefore, it must be placed on the center from which the illness originates — such as in **women’s discharges, diarrhea**, and other diseases that seek to spread beyond their center throughout the body. As a result, the excrements — the superfluities (archaic bodily wastes) — remain in place, from where they can then be easily removed*

♦ **Dr. Avicenna (980–1037), Halifa (1256):**  
**„The Physician“ as a Magnetic Healer**

through their natural emunctory (i.e., excretory pathway) with the help of appropriate remedies, once proper digestion has occurred.

***“...The magnet draws in the rupture and heals all ruptures and tears, wonderfully, in both the young and the old. It heals jaundice and edema with the aid of appropriate remedies...”***



Paracelsus (1493/94–1541)

His accounts are significantly more specific than earlier sources. It is remarkable how Paracelsus, using the primitive and weak magnetic fields available at the time, was already able to point to a broad spectrum of therapeutic ap-

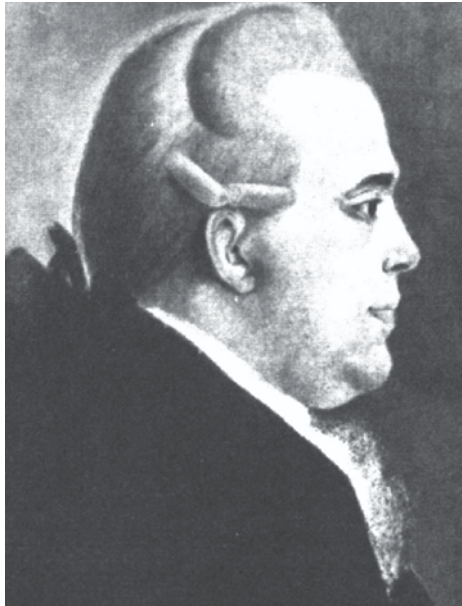
♦ ***Modern Magnetic Indications Including Fracture Healing***



plications — some of which, as we will see later, are still relevant in today's magnetic field therapy.

Nonetheless, with Paracelsus we are likely still in the realm of proto-scientific healing traditions, not yet in chemical therapy, and certainly not in electro-physical treatment models.

The first scientific reports from contemporaries about a magnetic healer date back to the 18th century, and describe a German physician named Franz Anton Mesmer, who, for two reasons, can be considered the true pioneer of magnetic therapy.



Franz Anton Mesmer (1734–1815)

♦ ***Franz Anton Mesmer (1734-1815)***  
***Founding Father of Magnetic Therapy***

First, he arrived at his magnetic healing method through serious, modern medical training.

Second, independent scientific investigative commissions documented for the first time in history what his method actually consisted of and what successes he was able to demonstrate.

However, the life story of this remarkable figure reads somewhat like an adventure novel:

Franz Anton Mesmer was born on May 23, 1734, in Iznang near Radolfzell on Lake Constance. He completed his medical studies at the then world-renowned Vienna School of Medicine, where East and West met at the court of Empress Maria Theresa, and where her two court physicians, Gerard van Swieten and Anton de Haen, taught as professors. Mesmer completed his medical studies with honors and distinction, opened a medical practice in Vienna, and began conducting his own research — using magnets.

Initially, he applied **magnets directly to the bodies** of his patients.

**But he soon came to believe that his hands alone could produce the same effect.**

For this reason, modern hypnotherapy research also regards Mesmer as its pioneer. However, later investigative reports indicate that magnetic materials still played a significant role in his therapeutic methods.

When rumors began to spread that Mesmer was achieving **miraculous healings with his hands through so-called “animal magnetism”**, his practice was quickly overrun by patients. No surprise that this also earned him the envy and resentment of many of his colleagues.

♦ ***Mesmerism: Magnetism or Hypnosis?***  
***Mesmer is also called the father of hypnosis.***

The beginning of the 18th century marked the dawn of modern science — and there was little room at that time for unexplained therapeutic outcomes. The hostility from Mesmer's medical colleagues grew so intense that, following some apparent treatment failures, he was ultimately forced to leave Vienna and flee to the more liberal city of Paris.

His choice of time and place was a fortunate one, as one of the hottest topics in the French capital at the time was the miraculous healings said to occur at the grave of a deacon named Paris, in the cemetery of Saint-Médard.



Mesmer's group healing sessions in his Parisian salon practice soon became a spectacle, as seen in contemporary engravings. The successful German physician faced heavy hostility from his French colleagues and was ultimately expelled from their circles.

In 1778, at No. 16 Place Vendôme, Mesmer opened his practice. The influx of patients — especially from high society and the aristocracy — became so overwhelming that Mesmer began conducting communal therapies.

He set up a large oak tub, filled with water, into which he placed crushed glass and **metal filings**. Long **iron rods protruded from the tub and were used to touch the ailing body parts of his patients**. At the same time, the patients were required to hold hands, creating what Mesmer called a “**magnetic chain**”.

♦ *Mesmer's oak tub in his overcrowded medical practice, Paris, 1778*

Due to the overwhelming demand, he soon had to set up three additional oak tubs. This therapy became such a fashionable event that the elite of Parisian society gathered there. Mesmer then opened branch practices in Lyon, Strasbourg, and Bordeaux.

His unprecedented success became such a **provocation to the established medical community** that they charged him before the Medical Academy with practicing unscientific methods. He was **banned from practicing medicine**, and since not even his most influential patients could overturn the verdict, he withdrew, embittered, **to Meersburg on Lake Constance, where he died in 1815. The twist of fate: I began my own research in 1979, in the Court Pharmacy of Meersburg, my residence at the time, because my wife worked there as a pharmacist.**

Nonetheless, Mesmer's ideas were revived in Germany in the early 19th century, and numerous Mesmeric experiments were conducted. Even some of the **great minds of his era recognized him.**

For example, Prof. Dr. Christoph Wilhelm **Hufeland** (1762–1836), personal physician to Schiller, Goethe, and King Friedrich Wilhelm III, wrote in his work “Makrobiotik or The Art of Prolonging Human Life” — which remains a cornerstone of naturopathic medicine to this day:

*“The vital force is the finest, most penetrating, and invisible activity of nature that we know so far. Although it permeates everything, there are certain modifications of matter with which it seems to have a greater affinity than with others. It bonds more intimately and abundantly with them, and in a way becomes their own.” He called this modification of matter the structural organization of organic matter of its components — and the bodies that possess it: organic bodies, plants, and animals.*

- ♦ **Mesmer died in Meersburg in 1815 — Dr. Fischer began his research in Meersburg in 1979!**
- ♦ **Prof. Dr. C. W. Hufeland (1762–1836) on Magnetic Healing: „The Art of Prolonging Life.“**

This organic structure appears to consist of a specific arrangement and mixture of the finest particles, and here we encounter a **remarkable similarity between the vital force and magnetic force**: Just as the magnetic force can be activated by a strike in a specific direction on a piece of iron — a strike that alters the internal arrangement of its finest components — so too can it be neutralized again through an opposing impact.

It was precisely this insight that led Hufeland to support Mesmer, after Mesmer had turned away from what had resembled hypnosis — so-called “animal magnetism” — and returned to the use of natural magnets in his treatments.

Hufeland remarked: “It is a credit to the German nation that, as soon as magnetism began to slip into pseudoscience, it could no longer sustain itself on German soil. But as soon as it returned to Germany, it quickly took on a more solid and philosophical character.”

Even the philosopher **Arthur Schopenhauer** (1788–1860) engaged with Mesmer’s teachings. In his typically concise manner, he stated:

***“One who denies magnetism  
is not to be called skeptical,  
but simply ignorant.”***

Although Mesmer brought new impulses to the healing arts, he also cast a shadow over the reputation of magnetism. Had he further developed his treatment method with magnetic iron rods, science would likely have been willing to conduct more detailed investigations. However, because he viewed himself — at least for a time — as the personal bearer of magnetic force and a “magnetizer,” the credibility of his teachings was significantly undermined.

- ♦ ***Arthur Schopenhauer (1788–1860)***
- ♦ ***Magnetism and the Vital Force***

In this way, Mesmer's fate mirrors that of many physicians in our time: those who, despite a solid foundational education, choose to depart from the well-trodden path of conventional medicine and achieve remarkable results using new or unconventional methods. In the end, they become a kind of new breed of **“demigods in white coats”**. They overestimate their own accomplishments, become slaves to spectacle and the media, and ultimately fall from grace — without having truly advanced medicine in a lasting way.

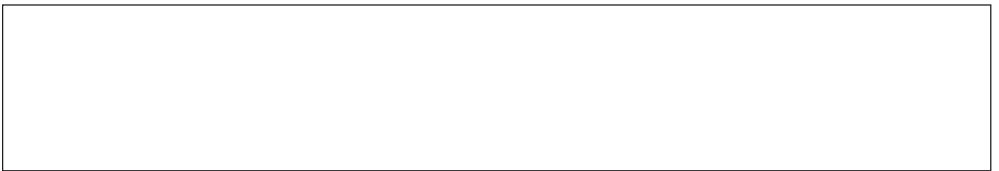
They are praised by the press, become the subject of gossip in hair salons and women's magazines, and, like Mesmer — who was capable of so much more — end up on the scrap heap of history, as historical footnotes.

**Mesmer's undeniable successes triggered a wave of enthusiasm, which impostors and pseudoscientific practitioners eagerly exploited.**

The patterns repeat themselves across the centuries. Just as **unqualified magnetic therapy vendors today, with zero foundational knowledge**, try to ride the coattails of serious magnetic field therapy's success, so too did so-called biomagnetizers in the late 18th century — and even into our own century — engage in questionable practices.

I myself would go on to encounter more than a few **charlatans, miracle healers, and opportunists...**

♦ ***Even then, charlatans and miracle healers dragged Mesmer's great successes into the mud***

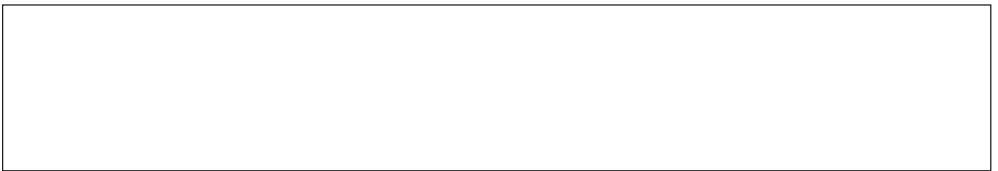


## Chapter 3

# PERSONAL EXPERIENCES WITH ACUPUNCTURE AND MAGNETIC PATCHES







## Chapter 3

## Personal Experiences with Acupuncture and Magnetic Patches

When you engage deeply with medical topics and diseases — as I did daily during my medically necessitated leave — you may find yourself listening more and more inward and gradually perceiving in yourself the very symptoms you’ve been reading about. I sincerely hope this book doesn’t have that kind of “contagious” effect on my readers.

At the time, however, my constant reading about illness only made me feel sicker. To my ongoing issues with rheumatism, stomach problems, and migraines, more and additional symptoms gradually emerged. I was fully aware that this was likely a **psychosomatic effect**. “Whoever reads cookbooks all day ends up hungry. Whoever flips through travel brochures all day loses motivation for work. And whoever reads medical books nonstop becomes a hypochondriac,” I told myself one day. It was clearly time to take action. Some of my earlier patents were starting to generate royalties from Japan, so I had to leave my mountain retreat anyway and board the next flight to Tokyo to see what the Japanese had to offer beyond consumer electronics.

What fascinated me most were magnetic healing methods — particularly neck and wrist bands and magnetic patches, about which I had read extensively. They seemed to point toward a new approach to connecting ancient Chinese acupuncture with modern applications. Of course, I had already visited various “acupuncturists” in Germany, Austria, and Switzerland — even spent quite a bit of money on some of them — but I never experienced any lasting

- ♦ ***Engaging Too Much With Illness Can Make You Sick!***
- ♦ ***Whoever reads cookbooks all day ends up hungry.***

benefit.

The **effect of the acupuncture needle** did manifest once during an **acute migraine attack, but it lasted for barely an hour**. I will never forget those two hours in the overcrowded waiting room of a well-known acupuncturist, which I spent in agony, desperately hoping that this method would bring relief. **But a therapeutic procedure that, in an acute crisis, relies on the help of a specialist who isn't immediately available, couldn't be a practical solution** — at least not for people like me who wanted to return to working life.

Still, I had developed a certain respect for acupuncture, as it had — even if only briefly — achieved with a simple needle prick what previously required heavy pharmaceuticals that had chased away one illness while often bringing on another.

A **magnet** placed in the right spot, I thought even then while reading about Japanese magnetic techniques, might — thanks to its deep penetration through all matter — be even **more capable than a mere needle piercing the skin of producing therapeutic effects in the body**, particularly analgesic, i.e. pain-relieving ones. And when **it comes to pain management, our Western medicine is severely lacking — especially for rheumatism and migraine**. So: Off to the Far East!

In Japan, **magnetic neckbands** have long been a tradition. They contain 8 to 12 magnets made from rare-earth metals, arranged longitudinally around the neck. Each of these magnets has a **field strength of 1300 gauss**. They are about 1.3 cm in length, cylindrically shaped, and have a diameter of approximately 3 mm.

♦ *Dependence on Specialists in Acupuncture*

Since it is relatively uncommon in Europe — especially among men in business — to wear neckbands instead of ties, I did purchase all the common models for testing purposes, as well as the **magnetic bracelets** available for sale, but ultimately I decided to use **adhesive magnetic patches** instead: small adhesive magnets that are applied to specific points on the body — usually invisible to others.

These magnets, which are now also available in Europe, can be used individually. The standard model has a diameter of 5 mm and a thickness of 2.5 mm. The magnet adheres to a round adhesive pad, allowing it to be placed precisely on a sensitive, painful, or affected area. Some manufacturers also recommend applying them to specific points outside of the pain center, resembling acupuncture meridian points.

After learning that magnetic patches had the highest success rate and the fastest effect, I acquired a few of them, received generous support and guidance from open-minded and helpful Japanese specialists, and flew back to Europe.

For some time, I had once again been suffering from severe rheumatic pain in my left shoulder. My treating physician and friend had long been trying to identify any possible inflammation foci — such as pus pockets in the tonsils, teeth, jaw, or sinuses — that might be causing my symptoms.

But neither he nor the dentist, nor the ENT specialist could find any such foci. Following the instructions, my family doctor then applied several of these magnetic patches to the painful areas. However, despite my high hopes, the treatment showed no measurable improvement — even after several weeks.

♦ ***Magnetic Patches From Japan***

The supposed effect on stomach issues also failed to materialize. Once again, I believed I had to give up hope, until we attempted to use magnetic patches to treat my migraines. The result was astonishing. After just a few days, my pronounced meteorosensitivity began to improve. The patches were applied as follows:



Until then, I could predict every Föhn wind, snowfall, or sudden weather change in advance. Fatigue, listlessness, and intense headaches — often rendering me completely unable to work — signaled that some meteorological shift was imminent. After my doctor applied a magnetic patch above my left eyebrow — the side where the pain occurred — as well as a second patch behind the wrist joint, and a third between the thumb and index finger, **my meteorosensitivity disappeared within just a few days.**

I was certain of this because the springtime weather at the time brought numerous atmospheric disturbances. I endured multiple Föhn episodes and unexpected snowfalls — entirely free of symptoms.

♦ ***Magnetic Patch Application for Migraines***

My stomach problems, which were mainly caused by the use of painkillers to treat migraines, were not directly healed by the magnetic patches. However, since I no longer needed the painkillers, the condition gradually improved on its own — even though the damage caused by the chemical medications continued to trouble me for a long time.

But overall, I regained new energy and joy in life, because the worst kind of suffering is always the one that affects the head. A person can live and work with intense pain, even achieve great things. But when the central nervous system fails, and the mind — the engine of all our activity — becomes paralyzed, a human being is reduced to a helpless shell and incapable of doing anything meaningful.

The elimination of my meteorosensitivity through magnetic patches ultimately turned out to be only a **temporary success**.

After a few months, the migraines returned — probably because **my body had grown accustomed to the constant, uniform stimulus** and no longer responded as it did at the beginning. Still, from that point on, I was absolutely convinced of the effectiveness of the magnetic field therapy principle.

Maybe it would be necessary to find a way to counteract **the body's tendency to adapt to the therapeutic stimulus**. But at least I had become pain-free for a time — and without any side effects!

Nothing is more convincing than firsthand experience — especially when it's a positive one. Perhaps I would still be trembling in the mountains today, bracing for the next shift in weather, and painting expressionist images in the meantime. Maybe I even would have made a lot of money with my paintings, because so many people could have related to the pain expressed in those col-

♦ *Mesmer died in Meersburg in 1815 —  
Dr. Fischer began his research in Meersburg in 1979!*

ors — if those Japanese magnetic patches — which from today's perspective I consider mostly ineffective — hadn't helped me back then and pointed the way toward the method that was truly right.

I got back on my feet and decided to tackle this topic again, both from an entrepreneurial and inventive perspective. After all, I wasn't the only person in the world suffering from migraines.

In Germany alone, migraine sufferers are estimated to miss an average of 17 workdays per year. And as early as 1994, experts estimated that migraines caused economic losses of roughly €10 billion annually across Europe - from lost productivity, medication costs, therapy stays, and more.

- ♦ ***€ 10 Trillion per year in Migraine-related costs  
a macroeconomic factor: Missed workdays,  
medications, therapy costs, etc.***

## Chapter 4

# THERAPY WITH PERMANENT MAGNETISM?







## Chapter 4

## Therapy with permanent magnetism?

**Initially euphoric over the quick success with magnetic patches, I naturally threw myself** into all similar methods with renewed energy — namely, therapies based on static magnetism, involving the **use of permanent magnets**.

Since at least some basic knowledge about magnetism can be assumed even in schoolchildren today, I'll begin with a very simple but fundamental distinction, the details of which will be explained later.

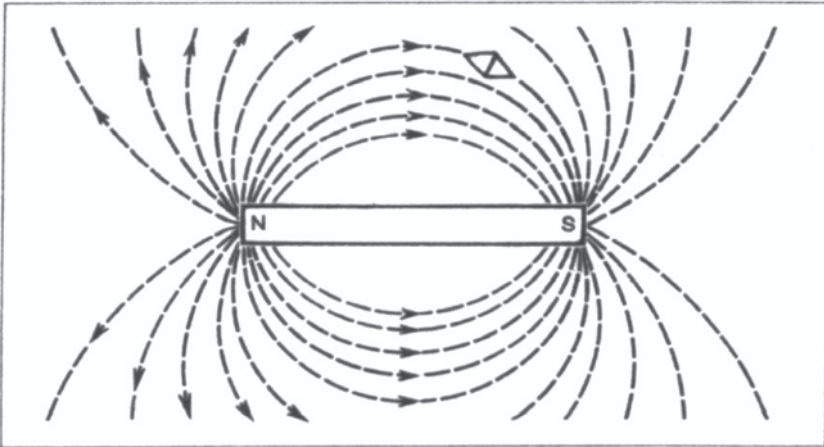
As most people know, there are magnets that exert a constant attractive force — known as ferromagnetic effect — on materials like iron. These are called permanent magnets (or static magnets), like those used in magnetic patches. They generate static magnetic fields. Such magnets occur in low intensity in nature but can also be artificially manufactured with greater strength.

Then there are **electromagnetic coils** (electromagnets), which are a defining element of our entire modern technological civilization. They can be switched on and off because they only exist where electrical current flows. In daily life, we encounter both alternating electromagnetic fields and permanent magnetic fields.

Since **electromagnetism** has only been known for a relatively short time, it's not surprising that older magnetic therapies relied solely on the use of permanent magnets.

♦ ***Therapy With Permanent Magnets,  
Permanent Magnets vs. Electromagnets***

All of the therapies discussed in the historical section of this book are based on static magnetic fields — a natural phenomenon comparable to gravity, which is likewise a natural and invisible, though entirely different, form of attractive force. Let us recall the fundamental properties of a permanent magnet, such as the magnetic north and south poles, and the lines of magnetic flux with their typical pattern — illustrated here with a bar magnet:



Pattern of magnetic field lines around a bar magnet. A magnetic needle orients itself tangentially to the field lines. The density of field lines corresponds to magnetic field strength of the magnetic force. (Illustration from the book "Invisible Environment," reprinted with permission from the author, Prof. Dr. H. L. König.)

**We often forget that magnetic repulsive force is just as much a part of a magnet as its attractive force.**

“You attract me like a magnet” is a common expression. “You repel me like a magnet,” on the other hand, is rarely heard. Apparently, the human subconscious finds it easier to deal with the phenomenon of attraction than with that of repulsion. (As we know from motivational psychology, negative formulations — that is, denials and negative statements — do not register effectively in the subconscious. This is likely why people often have an unconscious urge to defy prohibitions phrased as prohibitive statements (e.g., “You must not...”).

- ♦ ***The Earth’s Magnetic Field Is Vital for Life***
- ♦ ***Magnetic Field Lines From the North Pole to the South Pole***

I'll never forget how the great physicist and Nobel Prize winner Professor Edward M. Purcell, one of the pioneers of modern magnetism theory, once effortlessly demonstrated the attractive force of permanent magnets by letting it flow through the palms of his hands. He only became puzzled when he turned one of the magnets around to demonstrate the repulsion between like magnetic poles. He searched for words — and finally found the right expression not in English, but in German — a language he had picked up during his studies in Karlsruhe: “Unheimlich.” (Eerie. Uncanny.)

In physics, we differentiate between four so-called fundamental interactions - which is also where physics starts to face a kind of explanatory gap:

1. The strong interaction (nuclear force) with a very short range, arising from protons, neutrons, pions, and hyperons.
2. The weak interaction, also short-ranged, originating from elementary particles.
3. The electromagnetic interaction, which has a very large range and arises from anything containing electric charge.
4. Gravitational interaction, which arises from all massive objects and has unlimited range.

Physics has long been trying to unify these four fundamental forces into a grand theory of everything. But for our purposes here, only one question matters:

## What is the third force?

- and what does it do in the human body?

Now that you're holding a book on magnetic field therapy, you might expect its author to provide you with a basic overview to the nature of magnetism — much like so many others who have previously written on this topic by simply pulling physical units like gauss, tesla, field lines, induction, etc., from formula collections and paraphrasing textbook definitions.

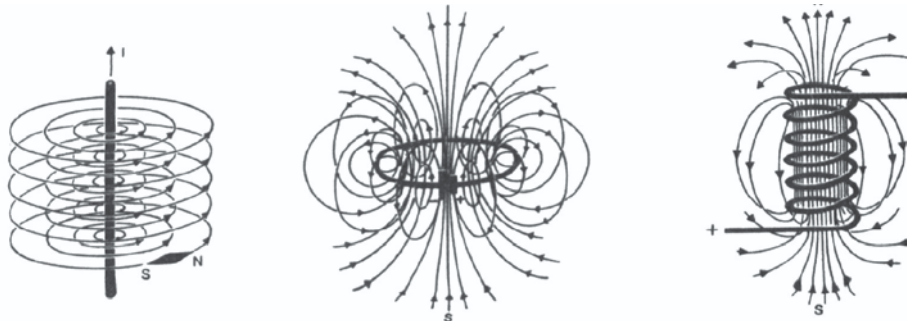
♦ ***The Great Physicist and Nobel Laureate  
Prof. Dr. Edward M. Purcell  
The Uncanny Second Side of the Third Force***

The same quantities are used by us as physicists and engineers to calculate magnetic properties, to design devices, coils, and transmitters, and they work just as we predict. We know how magnetic fields work, how to generate them, how to convert them into electric current, and the conditions under which electric and magnetic fields can interact to create electromagnetic waves, which, in the realm of radio and television, can theoretically be transmitted across the entire universe.

But if we are completely honest, we must agree with Edward M. Purcell. **Why magnetic fields exist, why they are, for example, a intrinsic consequence of electric current and vice versa, why electric current can be generated by magnetic fields, is completely beyond our knowledge.** The effect of magnetism is enigmatic — like everything that is immaterial, yet measurable in its effects.

The two fundamental phenomena are as follows: A an electric current – and only a **current in motion** – always generates a magnetic field (and thus directed forces). Conversely, a changing magnetic field will induce an electric current in a conductor, of a certain direction.

♦ ***Fundamental Concepts of Magnetism***



Magnetic field lines always form closed loops and are linked to the closed electric circuit. Illustration from the book: "Invisible Environment," with the kind permission of the author, Prof. Dr. H. L. König.

Once again: Don't let anyone fool you! No one can say why this is the case. Magnetism is one of the fundamental forces that has not yet fully understood.

No one truly understands the third fundamental force (i.e., electromagnetism).

What is important for us is that: Magnetic field lines pass through our body with as little obstruction as they pass through thick concrete. And for us, only the following questions are of interest:

Does this energy, described by magnetic field lines, which penetrates our body without itself being affected, produce an effect within our body? Does it trigger a reaction that we can use for our health?

**How must this energy be shaped to trigger beneficial effects in our organism? Or is it the case that something static cannot produce dynamic effects?**

♦ ***Prof. Dr.-Ing. H. L. König, co-inventor and constructor of quantum therapeutic devices.***

In other words:

To achieve an effect, is the release of energy (either much or little) required, corresponding to a change, or is a type of stimulus sufficient that already triggers something without affecting the net energy balance?

The second, and no less important, question is: Is a magnetic influence with consistently oriented field lines, i.e., a permanent magnet, more favorable for healing purposes, or should preference be given to, for example, a magnetic field generated artificially with alternating magnetic polarity?

Since I myself had initially gained experience with magnetic patches, i.e., permanent magnets, I decided to focus first on exploring this healing effect, even though it turned out to be quite short-lived. I was convinced that these magnetic patches were also the cause of the temporary relief from migraine.

A placebo effect, i.e., an imagined cure, seemed unlikely to me, since I had previously believed in other remedies and treatments with equal intensity, such as acupuncture, without any success.

Nevertheless, the general use of a method can only be based to a very limited extent on personal experiences. One needs proof, must engage with scientific criticism, and must gather empirical evidence.

I asked my doctor and friend for reports about the application with patients, clinical evaluations, or credible witness reports. He smiled and said: “You engineers and technicians are terrible realists. You want everything proven, black on white. But I’ve already seen it coming, and I’m prepared for it.” With that, he handed me a bundle of photocopies that he had gathered from brochures and books.

♦ ***Permanent Magnet or Alternating Magnet?***

Excerpts from Historical Reports:

In the first half of the 19th century, there was a group of doctors, scientists, and authors in Germany who revived interest in the topic of mineral magnetism.

For example, **Georg Friedrich Most**, in his 1843 book published by Brockhaus: “Encyclopedia of Folk Medicine or Lexicon of the Most Effective Home and Folk Remedies from All Countries” describes such a therapy and reports impressive healing successes:

“...Now, all iron objects are removed from the area around the patient, and the operation begins with the **magnetic rod**.

For example, if someone suffers from **toothache**, the doctor takes the pointed magnetic rod — sharpened like a lead pencil — heats it, and slowly moves the positive pole from the painful spot between the teeth and lips toward the center of the incisors, and then quickly removes the magnet from the patient’s mouth...”

“...In the painful attack itself, the magnet often has no effect, because the whole nervous system is too numb from the current pain to respond adequately to foreign stimuli...”

“Mineral magnetism, also called mineral magnetism, is the act of stroking or covering the affected area with an artificial magnet (**magnetic steel, magnetic plate**). In our time, it has gained the attention of both doctors and laypeople as an **effective remedy for toothache, headache, limb pain, local gout, nervous rheumatism, stomach cramps, St. Vitus’ dance, epilepsy**, and so on. Even the excruciating, often long-term periodic **facial pain**,

- ♦ ***Georg Friedrich Most (1843)***
- ♦ ***Permanent Magnet as a Folk Medicine***



which affects nervous subjects, was gradually healed in the hospitals of London through **the daily application of the north pole of a heated magnet.**”

He then mentions the **healing successes of M. E. von Bulmerincqs**, who published his findings on the use of mineral magnetism in 1835 in: “Contributions to Medical Treatment Through Mineral Magnetism.” He then provides several pages of detailed treatment guidelines for magnetic therapy. Here are some excerpts:

*“Never use the magnet cold, always apply it moderately warmed. Always bring the north pole to the affected area, never the south pole, as this, according to Dr. Kayle, Blundel, and others, increases pain...”*

**“For periodic body pains, abdominal cramps, heavy menstrual bleeding, a strong tendency to constipation, bloating, and poor digestion, the continuous use of a magnetic steel plate offers the best results, according to my extensive experience...”**

“The **magnetic treatment** works best when two moderately strong, about two to six-kilogram iron-carrying horseshoe magnets are placed on both calves, so that the north pole (+ M) and south pole (- M) of each magnet point toward the Achilles tendon and downwards, either on the outside or inside of the lower legs — but not with the positive pole of one and the negative pole of the other magnet facing inwards or vice versa...”

I found particularly detailed material in the book **“Healed Through Magnetism” by Wulf D. Hoyer.**

♦ ***Magnetic Therapy in Empirical Medicine***

Healer Success Stories from Japan, USA, Munich, Zurich, and Vienna:

Dr. Nakawage, the director of Isuzu Hospital in Tokyo, treated over 10,000 of his patients with magnets for muscle tension in the shoulders and neck.

**Within just a few days, 90% of the patients were pain-free.** The extension of the pain zone to the head or back had disappeared. Dr. Nakawage applied small steel magnets to specific points on his patients' bodies using adhesive patches. This allowed him to demonstrate a clear functional relationship between the body's nerve reflex points and the newly developed magnetic patches.

As a result, this treatment method was recognized **by the Japanese Ministry of Health.**

Dr. Arichi from Kinki University Hospital, Dr. Suzuki (Tokyo Medical College Hospital), and Dr. Sato from Chihaya Hospital also came to the conclusion that magnetic therapy stimulates metabolism, eliminates pain, and relieves muscle tension.

These magnetic patches, with a strength of 700 gauss / 0.07 tesla (while the Earth's magnetic field is only 0.5 gauss), are reported by Hoyer to make oxygen in the tissue more soluble and promote circulation. In many cases, a treatment period of just five days was enough to make the patients pain-free.

What particularly interested the **Japanese**, more than others, were the **practical healing successes in large numbers**, without a particularly intense focus on researching the underlying mechanisms. For us in Western civilization — and especially for a German engineer like myself — this **results-driven empirical approach** was fascinating and inspiring, but it did **not provide a foundation for a truly revolutionary advancement**, as I had envisioned from the very beginning.

♦ ***Dr. Nakawage, Director of Isuzu Hospital in Tokyo —  
10,000 Patients Free of Tension: Japanese Ministry  
of Health Recognizes Magnetic Therapy***

**The Quantronik, as it later developed, would have been discovered only by accident in several hundred years if based solely on such observation-based treatment methods.**

**Only through a scientific understanding of the fundamentals was a quantum leap in development possible.** I was therefore pleased that Hoyer, in the previously mentioned book, not only researched the topic with the Japanese but also in the USA, where it seemed more attention was paid to basic scientific research. **In the USA, researchers studied the influence of Earth's magnetic field on life.**

On behalf of NASA, Dr. Halpern and Dr. Vandyk from Philadelphia bred white mice in a metal cage and artificially shielded the animals from Earth's magnetic field. **After a few weeks without the Earth's magnetic field, the test animals lost their fur and died.** Their connective tissue in the skin and inner organs had excessively proliferated. **However, the animals kept in the magnetic field remained healthy.**

**The insight from this is as simple as it is important: The Earth's magnetic field, which the organism has been exposed to continuously throughout its evolutionary history, is as vital as a vitamin.**

On the other hand, rare magnetic phenomena in nature and biologically disruptive magnetic fields can harm us, which will be discussed in more detail later.

Magnetic field therapy, this was my fundamental realization from the studies, should only use "common" natural magnetic fields with the frequencies present in nature and biology!

♦ ***A NASA Study Found:  
The Right Magnetic Field is as Important as a  
Vitamin for Humans.***

**This really divides opinions at the crucial point:** Magnetic fields that are not familiar to our bodies from our genetic inheritance are not understood by the organism or may directly harm it. **Sad but true: There are unscrupulous or at least clueless magnetic field therapy device manufacturers who actually generate magnetic fields using the biologically disruptive 50 Hz power-line frequency and claim it is therapy: Such individuals need to be put out of business.**

However, it is difficult to combat them, as even natural magnetic fields can harm us. It depends on how accustomed our bodies are to them. A solar storm is entirely natural, but it certainly harms us because the event is too rare for the organism to have adapted to it. In fact, it is possible to artificially create the “natural” magnetic field of a solar storm. But once again: **What is natural is not necessarily beneficial to health!**

**After the health benefits of magnetic field therapy seemed to be proven in the USA and Japan, Western Europe’s conventional medicine could no longer ignore these findings. Scientific research groups in Munich, Zurich, and Vienna began experimenting with this “new-old” therapy based on existing studies and achieved new, further results.**

## **The 20-Magnet Film**

At the Vienna Polyclinic, a **magnetic film** was tested by **Dr. Johannes Bischko** from the Ludwig Boltzmann Institute for Acupuncture: On a width of 10 cm, there were **20 magnets, which triggered an astonishing synergistic effect.** What is particularly interesting is that, according to the laws of physics gov-

♦ ***At the Vienna Polyclinic, a magnetic film was tested by Dr. Johannes Bischko from the Ludwig Boltzmann Institute for Acupuncture.***

erning magnetism, the magnetic field lines of these closely arranged magnets naturally overlap and influence each other. Although they are static permanent magnets, this interaction with the treated body, primarily due to the body's spatial movement relative to the film, creates a kind of dynamic effect. For this reason, Hoyer likely refers to it as a “so-called pulsating magnetic film”, even though it has nothing to do with an electrically controlled alternating magnet.

Although these are static permanent magnets, this interaction with the treated body, especially through its spatial movement relative to the film, creates a kind of “dynamic interaction”. Therefore, Hoyer likely refers to it as a “so-called pulsating magnetic film”, although it has nothing to do with an electrically controlled alternating magnet. Of course, it is also possible to create a primitive alternating magnet from a permanent magnet, by positioning alternating magnetic poles toward the treatment site. I suspect that this is how the above-mentioned magnetic applications worked — possibly even in Mesmer's time, though it was not explicitly documented. In any case, Bischko's magnetic film differs significantly from magnet patches that only contain one magnet. This film is applied like a bandage to the skin.

**Doctors who monitored the experiment confirmed that the film had a healing effect on: Muscle tension, Circulatory and sensitivity disorders, Sciatica Gynecological and rheumatic complaints, Scars and scar-related issues.**

The Vienna-based radiation researcher Dr. Kokoschinegg, who lived near Salzburg, studied the healing effects of this film on patients who had not responded to conventional therapies. He didn't attribute the effects solely to the local influence of the magnetic fields, but claimed that their emitted fields or radiative effects must also trigger other bodily reactions. According to Hoyer's research, Dr. Kokoschinegg proposed three mechanisms of action:

- ♦ ***Pre-Quantronik Theories on the Effect of Magnets with Permanent Magnets by the Vienna-Based Radiation Researcher Dr. Kokoschinegg***

**Mechanism of Action 1:**

Body fluids absorb more oxygen. Through magnetic alignment, individual molecules combine into molecular chains and clusters, and the cells are more intensely supplied with oxygen.

**Mechanism of Action 2:**

Cell metabolism improves; the static **magnetic field increases the voltage in the body's cells and accelerates ion transport through the cell membrane**. The metabolic processes of the cell are revived. This would be a truly elementary mechanism. But how did the ions move through a static (i.e., non-fluctuating) magnetic field? I suspected back then that this could only happen through the movement of the body to which the magnets were attached, and thus depended on the randomness of the surroundings.

**Mechanism of Action 3:**

The magnetic field reduces hyperactivity in the pain-conducting nerve fibers.

In 1982, an **control experiment** was conducted in Munich. Hoyer reports that the 20-magnet film was tested by sports doctors on 20 students. Blood injections were made in the arms to induce bruising. These were then covered with either magnetized or unmagnetized films. Under the magnetic film, pressure pain disappeared 4 days earlier, and bruises healed 2 days earlier.

The largest experiment with the Bischko film, according to Hoyer, was conducted as a **broad field trial** by Dr. Saam, a traffic medic from the **ÖAMTC** (Austria's largest automobile club). Since a projection had shown that approximately 4 out of 1,000 drivers were involved in traffic accidents due to pain-related issues, every driver could request a magnetic film for free from the ÖAMTC in spring 1983. In return, a brief feedback report was required.

♦ ***ÖAMTC Large-Scale Experiment in Austria, conducted by Traffic Medic Dr. Saam — Every 5th Driver Fully Recovered; Control Experiments by Sports Doctors in Munich Confirm the Effect***

The result of this initiative was positive. Every 5th driver, who felt impaired in their ability to drive due to complaints, reported that, thanks to the multi-magnet film (Bischko type), they were now fully fit behind the wheel again. Dr. Reimund Saam, the traffic medic, considered this outcome a **success in the field of traffic safety research**.

## Magnetic Fields in Cosmetic Surgery

Even **cosmetic surgery** appears to recognize the benefits of using magnets for **wound and scar healing**.

For example, the then relatively unknown doctor of plastic surgery, **Dr. Mühlbauer** from the Munich Klinikum Rechts der Isar, reported on the **healing process using static permanent magnetic fields in over 100 patients** at the 91st meeting of the German Society for Surgery. At this congress, one particular method attracted attention:

A patient's abdominal wall was surgically tightened, and half of the incision was stitched as usual, while the other half was treated with a **magnetic closure system**. This involved pairs of small permanent magnets made of strontium ferrite, applied in a belt-like manner.

After just 10 days, it was evident that the magnetically treated part of the scar healed better. It showed an aligned collagen fibers oriented along the magnetic field lines, in contrast to the disordered pattern in the untreated part of the scar.

Dr. Mühlbauer further reported significant successes in the treatment of burns.

- ♦ ***The Famous Surgeon Dr. Mühlbauer from Munich Klinikum „Rechts der Isar“***
- ♦ ***Magnetic Fields in the Beauty Clinic***
- ♦ ***Magnetic Zipper***

Hoyer also mentions the **possibly most important effect of the magnetic field, namely its effect on the nervous system.**

Around 80% of the patients interviewed in his research reported a rapid reduction in pain. The magnetic field seems to reduce the excitability of the slow-conducting thin nerve fibers.

Acute pain is the “barking watchdog of health” — the warning signal of our body. It indicates irregularities in the organism and directs the doctor towards the diagnosis. However, this warning signal is only helpful for acute pain.

**Chronic pain, which sometimes lasts for years and affects millions of people, is, however, no longer physiologically meaningful, as it no longer serves as a warning.** On the contrary, it often leads to further diseases, more pain, eventually to isolation, job loss, and even suicide.

With the most common type of pain, **headache**, up to ninety different causes have been identified.

The cause of **back pain**, which ranks second, is also difficult to pinpoint.

**Professor Hans Ulrich Gerbershagen**, the medical director of the **Pain Clinic Mainz**, states: “Up to 50 different diagnoses are possible, from herniated discs, inflammations, misalignments, to the most severe manifestations, such as paralysis and cancer. Constant incorrect loading of the spine, too little alternating movement, and a hunched rather than upright posture cause most cases of back pain.”

♦ ***80% Success in Nerve and Chronic Pain Treatment***  
***Prof. H. U. Gerbershagen, Pain Clinic Mainz***



In the skin, there are receptors for pain sensation. Each square centimeter contains hundreds of them. They consist of the endpoints of numerous nerve fibers and send their signals as electrical impulses to the central nervous system. First to the spinal cord, then to the medulla oblongata, and from there to the brainstem and the thalamus, a particularly ancient brain region.

The thalamic cells, deep in the base of the brain, collect all the pain signals from various areas, classify them, and process them. Only then do the billions of nerve cells in the cerebral cortex become aware of the pain message. Since the nerves conduct very quickly, this all happens in a fraction of a second.

Pain almost always results in fear, which can lead to depression and despair. This is why it is so important to quickly alleviate pain sensations in a non-invasive and side-effect-free manner.

**The Pain Research Group — the International Association for the Study of Pain** — has stated in the journal *Pain*: “Pain is an unpleasant sensory or emotional experience associated with actual or potential tissue damage.”

Damaged cells cause supply networks to break down, triggering signals and responses.

I took these theories and findings in with enthusiasm, as they showed that my personal experience was not an isolated case, but that there were numerous similar experiences worldwide.

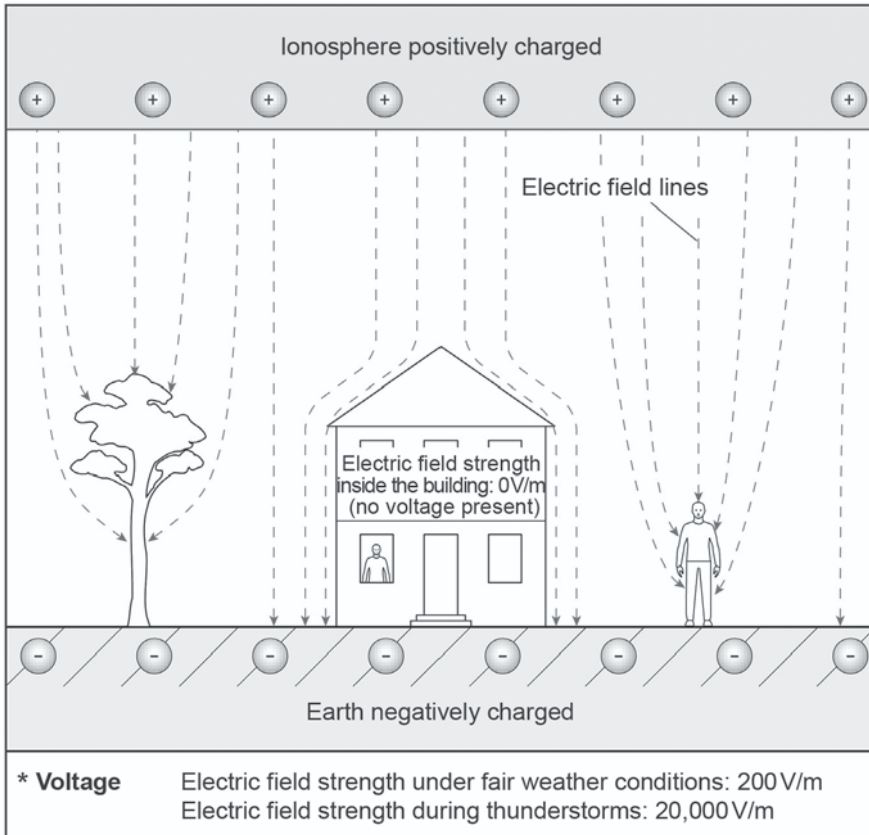
It was now time to delve deeper into the subject and distinguish scientifically sound explanations from speculation, as the theories on the physiological effectiveness at the time were still very divergent.

- ♦ ***The Pain Research Group***
- ♦ ***„International Association for the Study of Pain“***
- ♦ ***Pain Damages Tissue and Cells***

## Chapter 5

# THE SIGNIFICANCE OF NATURAL AND TECHNICAL MAGNETIC FIELDS FOR OUR LIVES





## The Significance of Natural and Technical Magnetic Fields for Our Lives

After I had gathered more detailed information about therapies involving permanent magnetism, I turned my attention to the basis of permanent magnetism — first and foremost, the most important permanent magnetic field in nature: the Earth itself.

It didn't take long for me to realize that the boundaries between permanent magnets and alternating magnets, or between natural and technical magnets (including electromagnets), are often fluid. The electromagnetism that is so often viewed with suspicion or labeled as harmful is, in fact, very much present in nature as well. One should never forget that more people likely suffer from natural electromagnetic phenomena — such as atmospheric discharges or solar eruptions — than from fields created by technology! What truly matters is this: Did humans, over the course of evolutionary history, ever have the chance to adapt to a certain influence — that is, in genetic design? To be specific: **Were such influences present frequently enough and over a sufficiently long period of time?**

Here is an imperfect but illustrative **example** — possibly more related to gravitational influences and light phenomena: The **moon**, with its approximately four-week cycle, is a phenomenon that has accompanied all of human evolution. And yet, its cycle is so long that it always seems to exceed the organism's anticipatory rhythm. Police statistics around the world show it objectively, and most of us know it subjectively: Full moon nights always seem to throw things off balance, even though they occur with beautiful regularity.

- ♦ ***The Ever-Surprising Lunar Cycle:  
Police statistics show its disruptive effects.***

The **influence of the moon** has accompanied us long enough, but not frequently enough.

**Solar prominences**, which hurl powerful electromagnetic storms through space toward Earth, are even rarer. They too follow a certain rhythm. But their frequency is so low — their recurrence interval, in cosmic terms, so infrequent — that our biological organism has not yet developed mechanisms to compensate for these fluctuations.

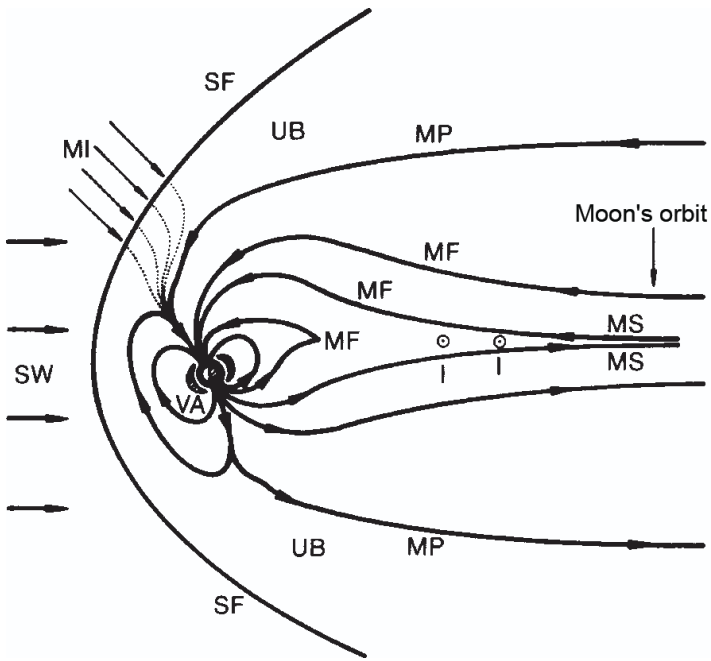
To put it in economic terms: **“Evolution has not exerted sufficient selective pressure to develop a compensatory mechanism.”**

On the flip side of the coin: An electromagnetic phenomenon may occur frequently, but it hasn’t existed long enough in the course of human genetic development. This applies especially **to the electromagnetic force fields of our modern technological environment**. They are not only common, but in fact constantly present. Nevertheless, biology has **not yet had a chance to convert these disruptive fields into beneficial ones**.

**Ultimately, a therapeutic concept such as Quantronik must be capable of eliminating all harmful influences:** Not only those that can be neutralized by simply pulling the plug, but **also the natural disruptive fields that our biological organism has not yet learned to cope with**. But more on that later.

It is widely known that without Earth’s magnetic field, life on our planet would not be possible. **The Earth’s magnetic field serves as a kind of protective barrier against life-threatening radiation from space**. In that sense, this natural magnetic field is a fundamental condition for the history of evolution.

♦ ***Natural and Technical Disruptive Fields***



The illustration from the book *Invisible Environment* by Prof. Dr. Herbert L. König (p. 22) shows the Earth and its outer magnetic field.

The solar wind compresses and stretches the Earth's magnetic field. This gives rise to the magnetotail (MT), where interplanetary currents (I) flow along field-aligned paths perpendicular to the orientation of the magnetic field lines. A kind of buffer zone against the solar wind is the Van Allen radiation belt (VA). Here, there is a higher particle density. The particles are effectively driven toward the "Earth membrane" and accumulate there — just as we will later observe on a microscale at the cell membrane of the human body.

The interplanetary magnetic field (IMF) is deflected at the shock front (SF), and the magnetopause (MP) marks the boundary between Earth's field and the solar wind.

Humans seem to have recognized the importance of the Earth's magnetic field as a natural force from very early on. It is often noted that the Egyptian pyramids exhibit a notable alignment with geographic cardinal directions, though a connection to the Earth's magnetic field remains speculative. Although no historical sources are known that could shed light on the background of this remarkable "architectural biology" from a critical perspective.

♦ ***The Magnetic Field as a Protective Shield of Planet Earth***

As a scientifically minded author, I hope to be forgiven for not engaging here with the **numerous speculative claims about the effects of pyramid geometry on plant growth, the preservation of mummies, and so forth.** I also do not find it necessary to refute these claims. However, they cannot be represented using the tools of precise description on which this book is based, because the available information is too sparse to allow for any verifiable conclusions. **That said, I certainly do not claim that these theories are wrong** — I am simply unaware of any plausible explanation for them.

The navigational use of Earth's magnetism is somewhat more tangible. The **first compass** was almost certainly constructed by the Chinese in the first or second century AD. By the 4th century, Christian churches were being built that were precisely aligned with geographic or magnetic north

**Many hundreds of medieval churches followed this architectural principle.** Again, the same rule applies: As long as we do not have sufficient historical sources, we must refrain from forming theories — no matter how tempting they may be.

The London physician **William Gilbert** was the first to write a comprehensive work on Earth's magnetism in the year 1600. The first scientific works in our modern understanding come from **Simonov** (1835) and Gauss (1838).

The **intensity of the Earth's magnetic field** is still frequently expressed in the magnetic flux density unit "gauss," named after Carl Friedrich Gauss. Depending on geographical latitude, it ranges from 0.35 to 0.7 gauss. In Europe, it is about 0.5 gauss. According to international standards, the unit tesla is now used for magnetic flux density (1 tesla = 10,000 gauss).

- ♦ ***The First Comprehensive Work on Earth's Magnetism  
By London Physician William Gilbert in 1600***
- ♦ ***Scientific Publications by Simonov (1835) and Gauss (1838)***

However, even these values show deviations due to the influence of additional magnetic fields — for example, caused by solar activity, which leads to strong currents in the ionosphere, and by electromagnetic standing waves around 7.83 Hz, known as Schumann resonances, which are excited by global lightning activity between the Earth and the ionosphere. Phenomena referred to as “atmospherics” (natural radio noise from lightning discharges) typically occur around 10–30 kHz

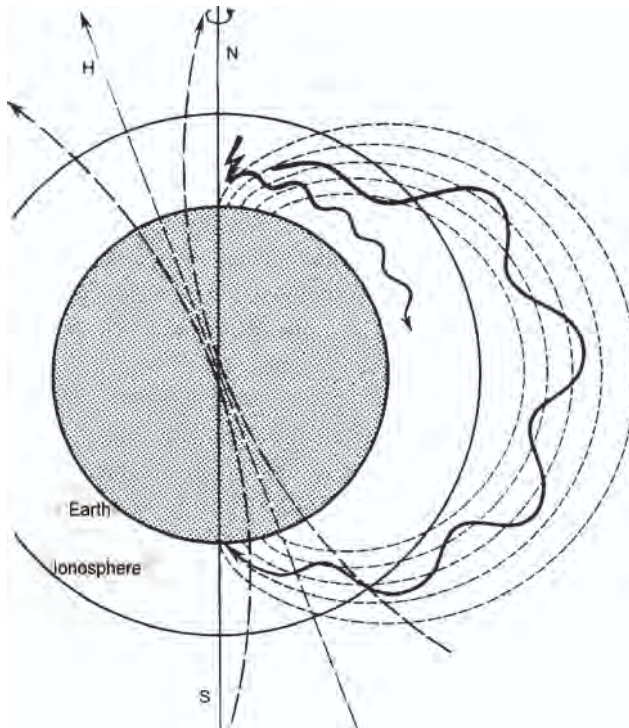


Illustration of electromagnetic waves in the 10-kHz range propagating between the Earth and the ionosphere, and along geomagnetic field lines extending beyond the ionosphere. Image courtesy of Prof. Dr. Herbert L. König from his standard work “Invisible Environment.” See also the bibliography.

- ♦ ***Schumann Resonances – Earth’s Magnetic Field Has a Proven Impact on Human Beings***
- ♦ ***Prof. König was Assistant and Chair Successor to Schumann***



**Solar eruptions are especially disruptive to humans.**

Just 8 minutes and 20 seconds after high-energy particles are ejected during solar flares and coronal mass ejections — for reasons still unexplained — these shockwaves strike the Earth’s magnetic field and trigger the aforementioned currents in the ionosphere.

These magnetic currents are often extremely strong and not only interfere with radio reception, but are suspected of affecting biological systems, possibly including genetic processes, which may sooner or later have positive — or more often negative — effects on the entire organism: either as a step forward in evolution or as disease.

Incidentally, magnetic fields are not unique to planet Earth. All known stars possess magnetic fields, as do many planets and moons. Earth’s moon, Venus, and Mars have much weaker magnetic fields than Earth, while Jupiter’s magnetic field is approximately 20,000–50,000 times stronger than Earth’s.

**Evidently, Earth’s magnetic field, which typically protects us from cosmic radiation, is not a stable constant.** It has changed repeatedly throughout evolutionary history — that is, the **the geomagnetic poles have undergone multiple reversals** (geomagnetic polarity reversals). Twelve such pole reversals have been proven within the past 9 million years. The pole shift currently underway may last as long as 20,000 years. Over just the past 4,000 years, Earth’s magnetic field has weakened by over 50%.

Some scientists speculate that during these transitional periods, the protective function of the Earth’s magnetic field may fail, potentially resulting in massive climate changes and even shifts in the Earth’s crust. Many catastrophes known from paleontology or passed down through mythology — such as the extinction of the dinosaurs, the fall of “Atlantis,” or the “Great Flood” — have been speculatively linked to such events, though without definitive scientific consensus.

- ♦ ***The North and South Poles Have Reversed 12 Times in 9 Million Years***
- ♦ ***When will the North Pole once again become the South Pole — and what does this mean for life on Earth?***

**According to calculations by two American physicists, such a pole reversal is predicted to occur in the year 3991.** They claim that 500 years prior to and up to 2,000 years after, the Earth's magnetic protective shield could become so weakened that massive upheavals could occur on our planet.

How can humanity prepare for such a scenario? Will people need to live in deep caves again or build protective bunkers to shield themselves from cosmic radiation?

What will happen to the rest of Earth's life forms? Will genetic mutations cause parakeets (which still retain a large portion of dinosaur DNA) to revert into dinosaurs, or will entirely new creatures emerge?

Will life on Earth ultimately be extinguished, for example if the oxygen-producing plankton in the world's oceans were destroyed — as has verifiably happened during previous pole shifts? Should we already start stockpiling oxygen?

### **Will we become sick and stupid in a “zero field”?**

It is not at all easy to simulate the absence of the Earth's magnetic field in an experiment today. Magnetic fields have the property of being virtually impossible to shield using conventional methods. So far, this has only been achieved effectively with so-called MU-metal — an alloy that is prohibitively expensive and therefore used solely for research purposes.

- ♦ ***Zero Field in the Year 3991?***
- ♦ ***An Apocalypse?***

The unsettling property of the magnetic field — that it is attractive on one side and repellent on the other — can be used to suppress a magnetic field by applying a counter-field. A similar function is performed by the Earth's magnetic field, which deflects cosmic radiation.

Scientists have now succeeded in creating a zone free of the Earth's magnetic field – a so-called zero field — by shielding it with MU-metal or by applying a counter-field, and have conducted experiments on animals within this environment: After just four weeks, white mice showed alarming consequences: **increased mortality, numerous tumor formations, kidney and bladder disorders, tissue degeneration, and pathological changes in liver and blood values.** Given such results in animal testing, **human experiments in a zero field are not ethically justifiable.**

**However, there was a 10-day trial conducted on twenty-year-old men in a significantly weakened Earth magnetic field. The performance of the central nervous system in these young men declined noticeably: They were only able to distinguish 8 images per second, whereas humans normally perceive 14 images per second as separate frames.**

It appears that what we generally understand to be a component of **intelligence** — namely, visual differentiation ability — **is impaired by the absence of the Earth's natural magnetic field.**

Even if we living today — and likely the next generations — are spared the direct experience of a zero field during a pole reversal, we already carry the responsibility to consider possible countermeasures to such a potential catastrophe — out of duty to future generations.

- ♦ ***Experiments Without Earth's Magnetic Field***  
***Increased mortality, rise in tumors, kidney and bladder disorders, tissue degeneration***

**Quantroniks, the science of technically controlling magnetic fields — developed today as a microtechnology to begin treating and preventing disease in individual patients — will, in the more distant future, logically become one of the most important sciences for the preservation of all life on this planet.**

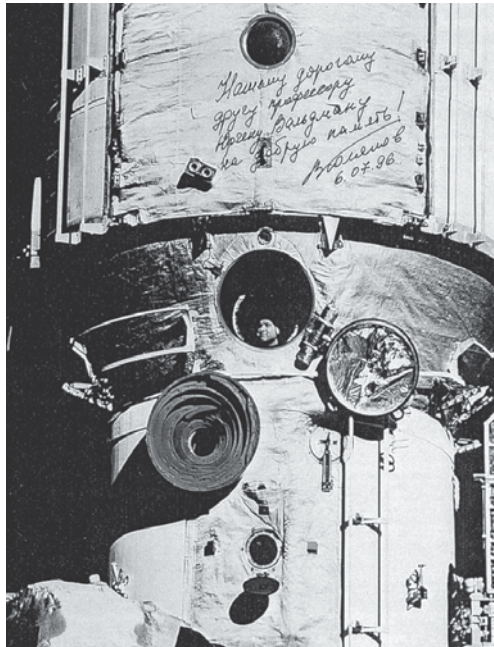
We must already begin today to develop the necessary technology, because massive disruptions to the natural — and typically beneficial — magnetic balance caused by our technology and civilization already exist. And their consequences have become increasingly apparent to us in recent years.

Perhaps it was this realization, even back then, that years later — after the granting of the Quantronik patents — led me to equip Russian cosmonauts on board the space station Mir with a Salut 1 device, so they could obtain the first research results on the effects of our artificial-natural magnetic field.

In space, the human body lacks the stimuli it has adapted to over the course of evolution. The Earth's magnetic field is absent; normal muscle activity is also lacking — because in weightlessness, there is no physically demanding movement. The astronauts must keep their bodies and circulatory systems fit through artificial training, especially aboard the space station. After all, Mir was humanity's longest space adventure to date, and it was already known that the lung capacity of the cosmonauts dropped to 30% of normal, that they suffered from muscle atrophy, and that their bone density decreased noticeably. They normally required nine months in an oxygen chamber to recover. **With Quantroniks, regeneration could be achieved twice as fast — without costly oxygen chambers and without harmful side effects.**

- ♦ ***Quantroniks — The Science of Technically Controlling Magnetic Fields***
- ♦ ***Quantroniks in Space Research***

We were also delighted to receive a greeting from our healthy cosmonaut. But most of all, we were thrilled about the success of the Salut 1 mission aboard Mir.

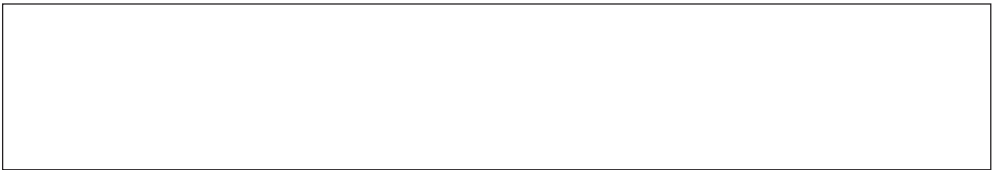


- ◆ *Quantronik Salut 1 in the Mir Mission*
- ◆ *Recommendation from the Russian Ministry of Health*

## Chapter 6

# FROM THE PERMANENT MAGNET TO THE PULSATING MAGNETIC FIELD





## Chapter 6

## From the Permanent Magnet to the Pulsating Magnetic Field

The Earth's magnetic field not only protects life as a whole — for a long time now, biology has shown us that not only seafarers with their compasses but also living organisms at all levels of complexity use the Earth's magnetic field for orientation.

It begins with the so-called **magnetotropism** in plants, which align themselves within the Earth's magnetic field, and continues with its zoological counterpart, *Aquaspirillum magnetotacticum*, a bacterium found in the seabed of the world's oceans, which can orient itself only because it has, within its body, a kind of “**spine**” made of magnetite crystals.

Similarly, sharks and rays have a **special sensory organ** that enables them to detect the direction of the Earth's magnetic field. These animals are constantly in motion, continuously swimming across the field lines of the Earth's magnetic field. This induces an electric current in a specialized organ. The strength of this current depends on the direction in which the animal swims across the magnetic field lines. Whales, too, are capable of perceiving the Earth's magnetic field.

**How is it that animals are able to directly use the Earth's magnetism for orientation?**

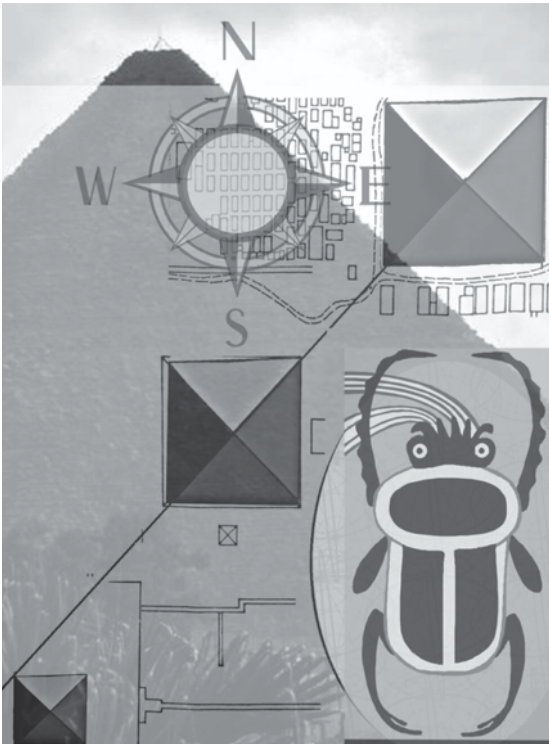
Well, from a scientific-theoretical perspective, the Earth's magnetic field is nothing other than a constantly present form of **information** throughout the evolutionary history of life on this planet over the past million years. It would be absurd to think that evolution did not make use of this information.

♦ *The Magnetic Field as an Information Carrier*



If a telephone line runs right past my house, then getting a telephone is quite reasonable. The telephone is the reception device for that information - the magnetosensitive organ, in this analogy, would be like the telephone for incoming “calls” from the Earth’s magnetic field.

There are the so-called **compass termites**, which build mounds several meters high, all aligned along a north-south axis. **May beetles** and possibly the **scarab beetle** as well — highly revered by the ancient Egyptians - orient themselves at rest according to magnetic fields. Perhaps the previously mentioned unexplained alignment of the Egyptian pyramids with the Earth’s magnetic field was based on orientation behavior observed in these “sacred” beetles.



Were the pyramids of Giza aligned to the north due to the behavior of scarab beetles — or did the Egyptians already possess a compass unknown to us?

♦ *The Scarab Beetle as a Pyramid Compass?*

In the bird world, magnetoreceptive navigation has been scientifically documented in carrier pigeons and storks.

**Bees** are also highly sensitive to magnetic fields and use the Earth's field for orientation and communication. (They can even “feel” upcoming weather changes based on variations in electromagnetic oscillations.)

In animals that are particularly magnetically sensitive, a relatively high concentration of magnetite has been found in their tissue. This may explain their special perceptual ability, as magnetite reacts a million times more strongly to an external magnetic field than regular tissue.

**Remarkably, the the human brain also contains magnetite crystals — normally 5 million per gram, and up to 100 million in the brain membrane.**

Could it be that this accumulation of magnetite explains weather sensitivity — in other words, the reaction to electromagnetic events in the atmosphere — which most often manifests as headaches?

I thought back to my migraine treatment with the magnetic patch. Was there some sort of interaction between the magnetite stored in the brain and the externally applied permanent magnet that diverted the impact of the unhealthy fluctuations in natural magnetic fields — because the magnetic interaction was stronger, and overrode the one triggered by the weather?

Was the permanent magnet the solution to the whole problem — a kind of “calm center”, like the proverbial steady pole that you could simply carry around like an amulet?

♦ ***The human brain contains up to 100 million magnetite crystals.***

I started thinking: Perhaps it really was the case that the careful use of permanent magnets could influence certain nervous excitations that occurred at the edges of the brain. Or was it not an influence at all, but rather the generation of a counterfield to shield against atmospheric magnetic phenomena? In other words: Did the magnetic patch not act on the organism itself, but instead protect it through repulsion and superimposition forces from the effects of external fields?

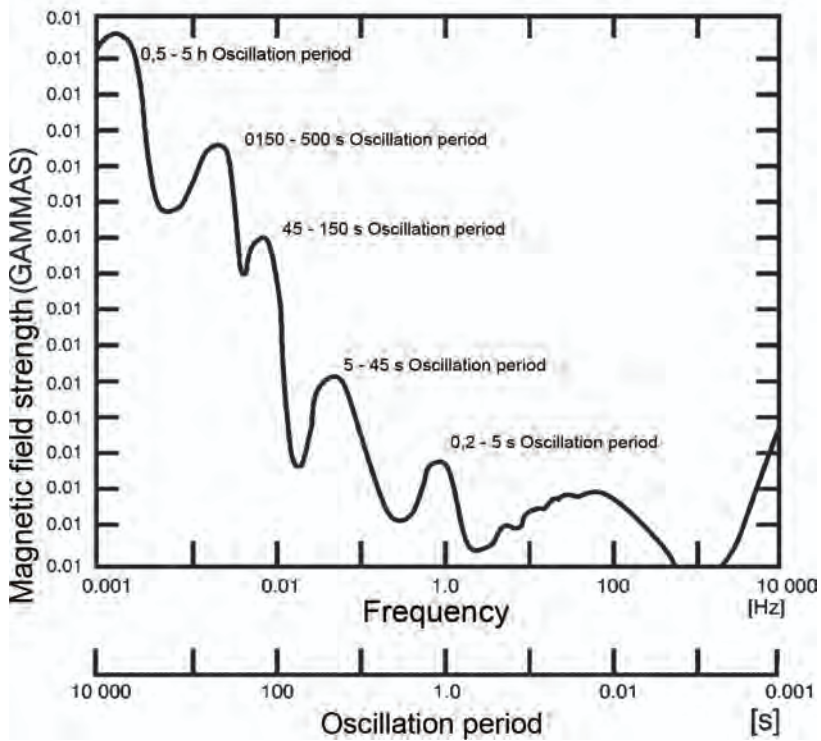
If that were the case, the outcome of a permanent magnet treatment would be dependent on lucky circumstances. The repelling magnetic field would have to coincide with the disruptive field. But given the wide variety of natural phenomena, such overlap could only be coincidental, which would not allow for a sustained therapeutic effect — as had indeed been the case for me.

The illustration on the following page shows the frequency spectrum (x-axis) of naturally occurring environmental magnetic fields and their relative intensity (y-axis).

You'll notice that the rarer oscillations are often the strongest. Graphic reproduced with permission from Prof. Dr. Fischer AG.



## Natural magnetic fields in our environment



- ♦ *What is constantly present in nature as oscillations even without human influence.*

After all, based on my own experience, I was certain that some of these “natural” magnetic phenomena were having an effect in my head — even if, in my case, it manifested as migraine. But there are also people who feel more energized during **foehn winds** than at any other time

**The same phenomenon triggers different effects.** No one was able to explain to me why this is the case. But one thing was clear: The root causes were always electromagnetic in nature: processes involving alternating magnetism, pulsating fields, and electromagnetic waves.

I must admit that, as an engineer, I was immediately drawn to the idea that electromagnetic processes could be much more effective than the effects of permanent magnets. There were already established control techniques in this field — ranging from large-scale applications to microtechnology. This was a field in which one could work far more precisely than by manufacturing permanent magnets ranging from pinhead- to millstone-sized.

It was also striking that nearly all global skepticism regarding magnetic field therapy focused on permanent magnets – not on controlled magnetic fields.

In 1999, Robert Todd Carroll compiled all the relevant criticisms in his online Skeptic’s Dictionary (<http://skepdic.com/magnetic.html>), addressing magnetic patches, rings, chains, pillows, etc. Anyone can read there what I had already personally experienced in the 1980s. Of course, one must not throw the baby out with the bathwater or stop thinking just because one particular path has proven to be the wrong one.

♦ ***Skepticism Toward Therapy with Permanent Magnets***

**Electromagnets** can be manufactured in almost any shape. Most importantly, their intensity — and in the case of alternating magnets, also the duration and amplitude of oscillation — can be precisely controlled. The frequency can be modulated to **transmit various “force-information” patterns simultaneously**.

The penetration depth of an electromagnetic field can also be freely adjusted. That made it clear: It should be possible to influence deeper-seated conditions — such as my rheumatism, or issues in muscle tissue, blood vessels, bones, and joints.

I talked to my doctor about this. He said: “Pulsating magnetic fields in therapy? Yes, I’ve heard of that — mainly in veterinary medicine. **Horses with joint and bone problems are treated with ring-shaped magnetic coils.** Healing is said to occur much faster. And you can be sure horses aren’t imagining it — so placebo effects can be ruled out.” Next time I’m at the university library, I’ll look up some literature on the subject.”

I used to own horses myself and was an avid rider. I knew the heartbreak of horse owners whose noble animals had broken bones or torn ligaments. But I had never heard of the use of magnetic coils. I called a few of my old riding buddies, who were surprised to hear that I was interested in horses again after my long illness. And I did in fact find one who showed me a clip from a promotional film produced by a manufacturer of magnetic coils.

The scene was apparently filmed in the stables of the well-known rider Schockemöhle and showed a veterinarian treating a trotter stallion using a ring-shaped magnetic coil, roughly the size of a bucket, in which the horse’s left front hoof was placed. The veterinarian reported on the severe tendon

- ♦ ***Pulsating Magnetic Fields in Equine Orthopedics***
- ♦ ***Success Story in Schockemöhle’s Stables Through Magnetic Field Therapy***

and joint disorders that had taken this previously highly successful horse out of competition for two years: “This stallion was treated unsuccessfully with conventional methods for two years. After just over three weeks of magnetic field therapy, he competed in seven races and placed in the top three in six of them.”

#### APPLICATION OF MAGNETIC FIELDS IN ANIMALS



Devices from company elec,  
some were co-developed  
by Dr. Warke



#### ♦ *Magnetic Field Application in Veterinary Medicine*

Later, I also came across conference documents from a symposium on magnetic field therapy in equine practice, which had already taken place in 1983 in Bonn. The therapy had been well established in that field for quite some time. But it wasn't just horses being treated. I also came across the Elec Veterinary Report, which was compiled based on 60,000 reports of experience from veterinarians and animal owners.

The results for tumor conditions, circulatory disorders, fractures, and traumatic injuries in animals were impressive.

<b>Tumor Conditions</b>		
<b>Rating</b>	<b>Veterinarians</b>	<b>Pet Owners</b>
Very good	25 %	50 %
Good	25 %	25 %
Satisfactory	0 %	25 %
Poor	50 %	0 %
<b>Circulatory Disorders</b>		
<b>Rating</b>	<b>Veterinarians</b>	<b>Pet Owners</b>
Very good	0 %	0 %
Good	33 %	44 %
Satisfactory	33 %	56 %
Poor	33 %	0 %
<b>Fractures and Trauma</b>		
<b>Rating</b>	<b>Veterinarians</b>	<b>Pet Owners</b>
Very good	44 %	56 %
Good	34 %	26 %
Satisfactory	9 %	17 %
Poor	12 %	2 %

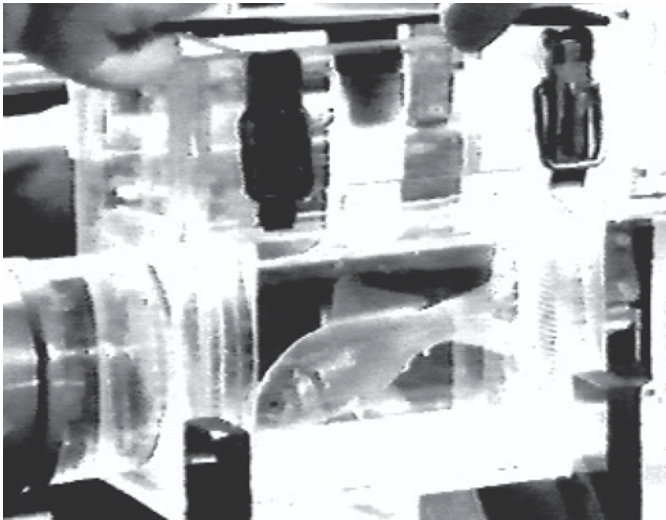
♦ ***Veterinary Report***  
***60,000 case reports analyzed at Saarland University***



I now waited even more eagerly for further clinical and scientific studies on this subject and, in the meantime, had film material sent to me by various manufacturers. These showed not only initial healing successes with pulsating magnetic fields in human subjects — which I will return to later — but also remarkable animal experiments.

I was particularly impressed by an **experiment involving a goldfish, in an experiment conducted by biologists and magnetic field researchers** from Saarland University:

The goldfish was placed in a hermetically sealed flow channel. Sensors were installed in the water current to measure the **partial pressure of oxygen**, the temperature, and the flow velocity. In the control run — that is, without a magnetic field, all the initial values were recorded. Only afterward was the fish exposed to a strong **permanent magnetic field**. The oxygen values did **not** change significantly. But when the fish was exposed to a pulsating magnetic field produced by a powered coil oscillating at just a few cycles per second, the metabolic processes increased significantly.



♦ ***Evidence Against the Permanent Magnet: Approximately 20,000 Gauss vs. Pulsating Magnetic Field of 0.5 Gauss***

The goldfish suddenly consumed more oxygen and became noticeably more active.

That made things absolutely clear for me: Permanent magnets are irrelevant — all those magnetic chains, amulets, and patches only help by coincidence, namely when currents or other magnetic fields move in relation to them. Only a pulsating magnetic field could offer a controllable and predictable effect.

But how should the result regarding oxygen uptake be interpreted?

What was certain: The goldfish had taken the additional oxygen from the water in the flow channel. Did the pulsating magnetic field suddenly increase its capacity for oxygen uptake?

**Could such an effect also be demonstrated in humans?**

**It was indeed possible — a second experiment successfully transferred the positive oxygen result to human volunteers.**

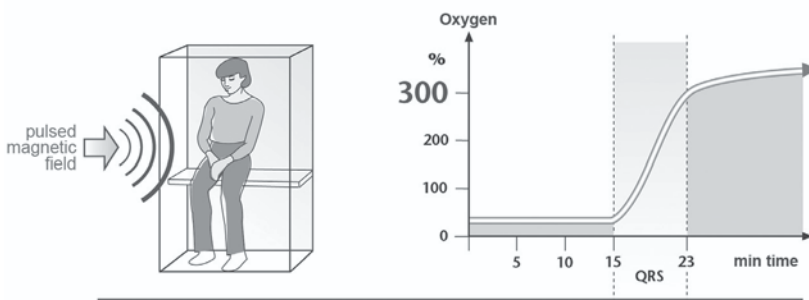
Since humans do not extract oxygen from water like fish do, the test person naturally could not be placed in a water flow channel. But it is well known that humans also breathe to a certain extent through the skin — more precisely, oxygen escapes through the skin to wherever there is less of it. This is called a **diffusion gradient**.

Normally, more oxygen is present in the outside air than in the body tissues, so oxygen moves from the outside in. **Thus, the body absorbs additional oxygen through bare skin — incidentally, one reason why we feel particularly fit and active when moving about naked in fresh air: We have more oxygen in the body.**

♦ *Experimental Setup in Humans*

However, oxygen can also escape from the body to the outside if there is less oxygen in the surrounding air than in the body's cells. In that case, the diffusion gradient flows from inside to outside. This condition is not common, but it can be artificially created, and it then becomes possible to measure how much oxygen escapes through the skin — a perfect metric for the oxygen pressure present in our cells.

In a sealed glass chamber, a test subject wearing only minimal clothing was enclosed.



The air inside the chamber was replaced with nitrogen, so that no oxygen remained in the chamber except for the oxygen the test subject inhaled through a tube from the outside and distributed through the bloodstream in their body.

- ♦ ***Oxygen diffusion pressure in humans increased by 300% or more.***

Due to the diffusion gradient from inside to outside, oxygen continuously was released from the subject's skin into the chamber, and the amount was measured. When a pulsating magnetic field was activated and directed at the test subject — without them knowing when it was turned on — an increase in oxygen diffusion of up to 300% was observed.

In other experiments, where measurements were taken on a hermetically sealed hand, oxygen diffusion even increased by up to 90%.

That was truly impressive. When I thought back to my own recovery from migraines — which only occurred after several weeks — I was astonished to see such clear effects within a matter of minutes. Above all, after the goldfish experiment, I was thoroughly convinced that even strong permanent magnets can only produce modest effects compared to the pulsating magnetic fields generated by coils.

**The possibility of increasing oxygen diffusion pressure through these magnetic fields essentially meant a greater accumulation of oxygen in the tissue — and in the shortest amount of time. It was obvious that a therapeutic breakthrough was emerging here, especially since insufficient oxygen supply to tissue is one of the biggest problems in medicine.**

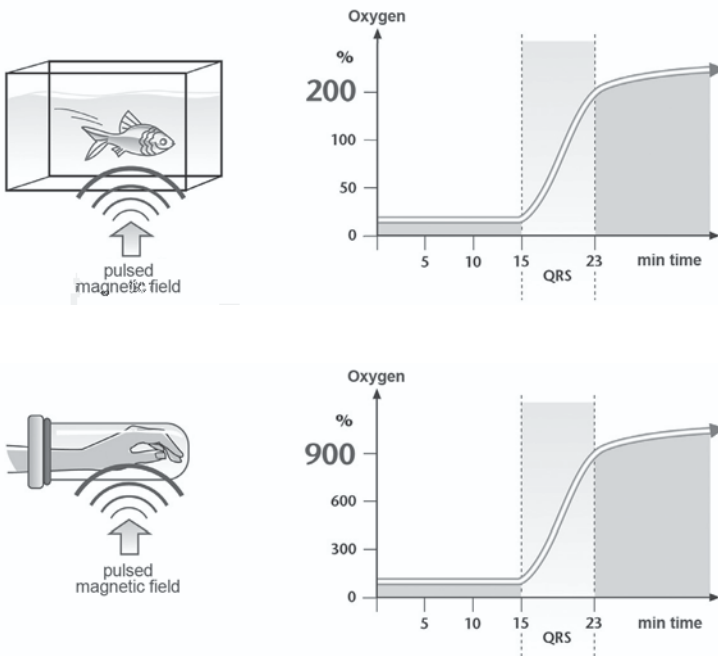
How many pharmaceutical products have been developed to provide just a bit of relief in this area, how long do they take to work, and how many side effects do they bring with them? Magnetic field treatment opened up entirely new expectations.

♦ ***900% increase in oxygen diffusion pressure in the hand area***

Even though, at that time, nothing was yet known about the **multistep oxygen therapy** developed by Manfred von Ardenne and its **importance in cancer treatment**, it was not until 1992 that **Dr. Otto Stemme** published the connection between oxygen availability and magnetic field therapy comprehensively in his book “Physiology of Magnetic Field Treatment.”

The effect on oxygen metabolism of the pulsating magnetic field had to be of tremendous importance — that became immediately clear to me.

Increased oxygen diffusion rate



♦ ***A Therapeutic Sensation***

## **Chapter 7**

# FROM THE IVORY TOWER OF RESEARCH

Report on Quantronik Basic Research  
on German NDR Television





## Chapter 7

## From the Ivory Tower of Research

More oxygen through magnetic fields! When this message escaped from the ivory tower of the university and reached the public, the uproar was enormous. Numerous follow-up control experiments were conducted, and the media echoed widely.

A typical example was a television documentary by North German Broadcasting (NDR) that aired in December 1993. Its conclusion:

*“When locally applied in precise doses, magnetic fields were shown to dilate blood vessels. The result: Cells receive a better oxygen supply.”*

*“In addition, important substances such as enzymes can penetrate the cells more easily. Waste products are more efficiently removed. In other words: Cellular metabolism improves. Because of these effects, targeted magnetic field therapy could enhance circulation and may also alleviate sleep disorders or headaches.”*

From research at the University of Saarland, I received a study containing **1,712 patient outcome reports, submitted by 92 physicians from various medical specialties. These reports detailed their experiences using magnetic field therapy with the elec system. 64.4% of the treating physicians rated the results overall as very good to good, while 73.7% of the patients themselves gave the same rating. That means three-quarters of patients felt noticeably better.**

♦ ***NDR TV Documentary Emphasizes  
the Increase in Cellular Metabolism***



That must be it, I thought — and without magnetic field therapy, these people might not have been helped at all. Why wasn't this promising path consistently pursued? Why didn't the health insurance providers get involved? It would take much longer before I learned the real reasons behind this hesitation.

I read the study more closely: **The treatment outcomes were examined for degenerative disorders, inflammations, circulatory disorders, and fractures and traumas.** Which conditions were included?

Under degenerative disorders, the study listed: Cervical spine syndrome (HWS-Syndrom), spondylosis, transverse myelopathy (TU), coxarthrosis, paralysis, ataxia, polyuria and polydipsia, osteochondrosis, aspergillosis, paresis (partial paralysis), leg ulcers, paraplegia, nerve paralysis, knee joint disorders, arthrosis, necrosis, sciatica, digestive disorders, dermatosis, lumbar spine syndrome (LWS-Syndrom), cervical spine syndrome (KWS-Syndrom), constipation, diskopathy, degenerative myopathies, general weakness, hemosiderosis, gonarthrosis, periosteal injuries, dyspnea, osteoporosis, Scheuermann's disease, lumbago, scoliosis.

**Here are the ratings for degenerative disorders:  
60.9% good to very good from the treating physicians,  
63.7% from the patients themselves.**

**Clearly, magnetic field therapy had helped nearly two-thirds of those affected!**

A similar pattern was found for inflammatory conditions. The reporting physicians in the study listed the following as **inflammatory diseases**:

Urinary tract infection, coxitis, gastritis, uteritis, hepatitis, fistula, tendovaginitis, abscess, infection with hip paralysis, urogenital infection, dermatitis, sinusitis, acute and chronic otitis, bronchitis, arthritis, tendinitis, chronic

♦ ***Outcome Report from 1,712 Patients  
and 92 Physicians***

osteomyelitis, pododermatitis, bursitis, infected bite wound, gastroenteritis, rheumatic diseases, torticollis, prostatitis, scalp inflammation, angina, nephritis.

**Here is the evaluation for the inflammatory conditions: 68.2% good to very good among the 92 physicians, 73.1% among the 1,712 patients treated with magnetic fields.**

The fourth therapeutic area examined was: Fractures and Traumas. According to the study, this category included: Swelling, contusion, fracture, dislocation, ligament sprain, concussion, overstretching, ligament tear.

**For these fractures and traumas, 77% of physicians rated the results as good to very good, and 83.3% of patients did the same!**

I asked Professor König: “Isn’t that a pretty good result?”

*He just looked at me, somewhat puzzled, and replied: “Of course it’s not bad. But this is **orthopedics**. **Magnetic field therapy has long been considered a classic indication in this field — didn’t you know that?** We’re already thinking of entirely different areas of application.”*

What kind of world did this researcher live in? Did he not realize that the knowledge that pulsating magnetic fields could be used in orthopedics (and perhaps reduce the need for cortisone creams, intramedullary rods, and other such interventions) had by no means reached every practicing physician? My own doctor — who was certainly no country doctor — had only heard of its use in veterinary medicine.

**Why hadn’t these findings made their way into general medical practice?**

♦ ***Magnetic Field Therapy  
First Recognized in Orthopedics***

**Another result from the study on the elec system was that no side effects were detected.**

Professor König tried to explain to me why the current stage of development was not yet ripe for a **fully-fledged magnetic field therapy device**. He made it clear that further research was still needed. The **impulse shape** had to be improved, and the **amplitude window** more precisely defined.

I knew what a window was, and I also understood that an amplitude refers to the height of an oscillation curve — in other words, an expression of the force behind the oscillation.

But what was an amplitude window?

Professor König explained it to me as follows: *“An electrical neutralization of charge-related barriers (dielectric contact potentials at membranes) is only possible through the displacement of a very specific amount of charge within an induced electromotive force. Too much force does not neutralize — it recharges the barrier capacitor with reverse polarity. Too little force means too little charge is moved, resulting in no effect.”*

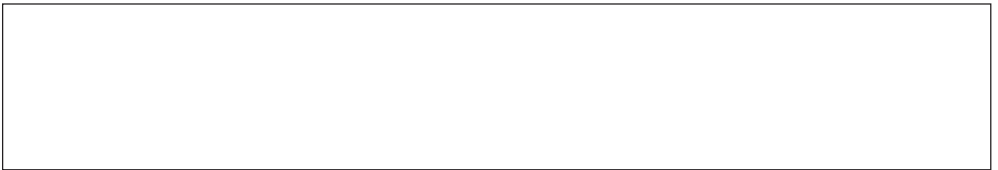
I understood that this was about magnetic fields triggering currents in the body, which must be neither too strong nor too weak in order to be effective. The amplitude window, therefore, requires the right magnetic field strength in the appropriate part of the body. So the term “amplitude window” referred to the fact that only within specific intensity ranges — tiny segments within the electromagnetic spectrum out of billions of possible magnetic field configurations — could resonances in the body be effectively addressed, thereby triggering significant therapeutic processes at clearly defined locations.

♦ ***Large-Scale Magnetic Field Therapy Study  
on 1,712 Patients — No Side Effects***

## Chapter 8

# OF FLEAS AND FREQUENCIES





## Chapter 8

## Of Fleas and Frequencies

That was the title of a one-hour television documentary produced in 1980 by order of ZDF (Second German Television). The authors were **Jürgen Voigt and Volker Winkelmann**. It was the most comprehensive and elaborate cinematic portrayal of global magnetic field research to date. At the center stood the results obtained at the University of Saarland.

Starting from the insight that **the partial pressure of oxygen in tissue increases under the influence of magnetic fields**, it was hypothesized that this must be accompanied by improved blood circulation — in other words, the areas of the body influenced by the magnetic field should become warmer.

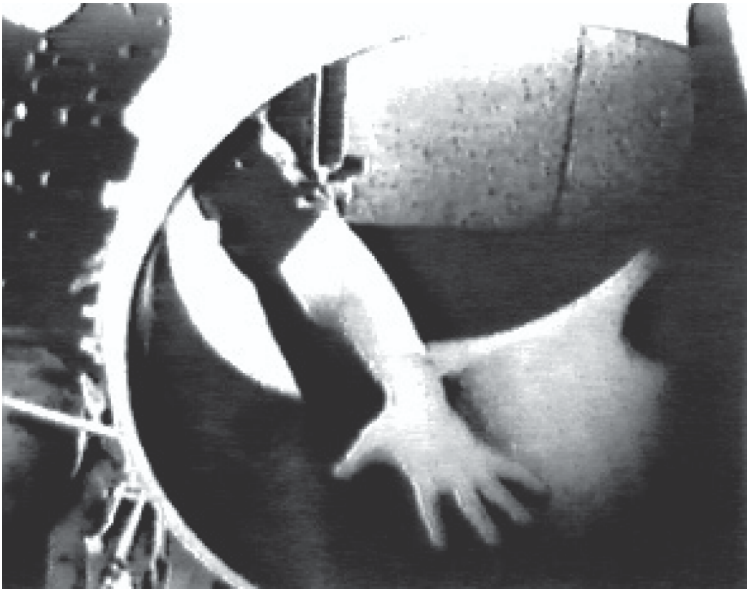
This was not a matter of warming the body with external heat, but rather a reaction of the body to the magnetic field, resulting in warm blood flowing into vessels that were previously under-supplied.

An **experiment** demonstrating this — **one of the fundamental experiments in magnetic field therapy**, often replicated in various versions — was made accessible to the general public for the first time in this ZDF film.

The scene showed a male test subject, whose hand was placed into a magnetic coil powered by a control unit supplying low-frequency pulses. The hand was filmed in close-up using a thermal camera, initially displaying the temperature/blood circulation image of the hand before the magnetic field was activated.

♦ ***Increased Blood Circulation***

You could first see what every man (and even more so every woman) knows from everyday life: cold fingers.

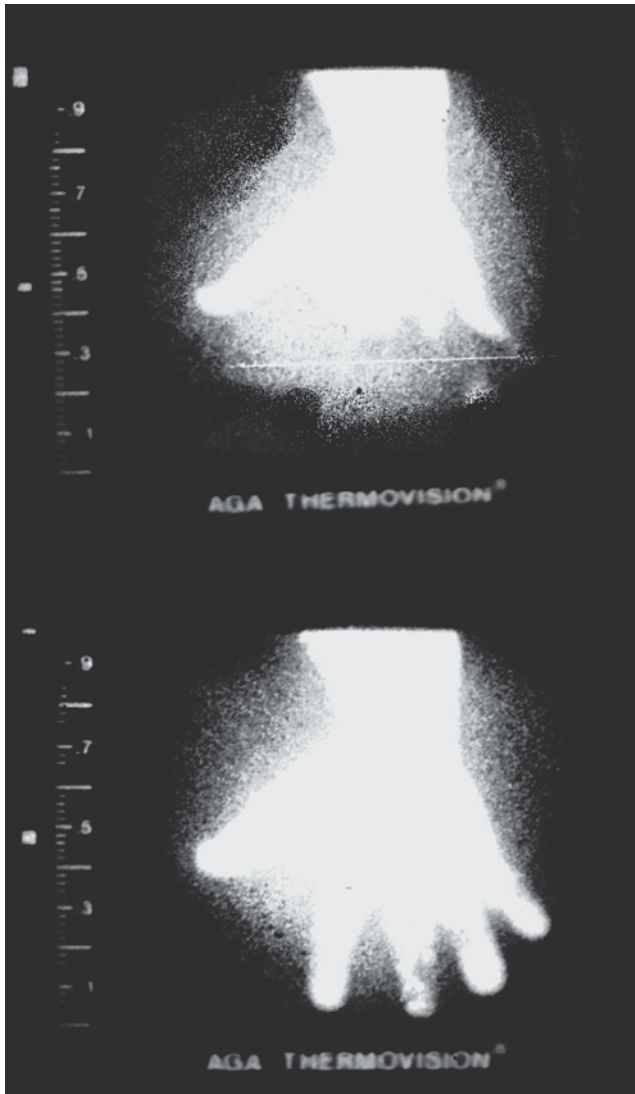


Blood circulation — and thus the heat radiation captured by the thermal camera — decreased continuously from the base of the hand toward the fingertips. **Then, without the test subject knowing, the magnetic field was switched on — and you could clearly watch how warm blood flowed rapidly into the fingertips.**

The image on the opposite page shows the well-circulated areas as light, while the poorly or non-circulated regions appear dark.

- ♦ ***The Immediate Response of Effective Magnetic Fields***
- ♦ ***The magnetic field increases circulation in all extremities of the body.***

- Image 1: Before magnetic field application  
Image 2: 5 minutes after magnetic field application  
Temperature difference: 2.2°C



♦ *No More Cold Fingers!*



**A hand that becomes warm immediately under the influence of a magnetic field was an impressive demonstration — one I witnessed many times in the years that followed. The increased heat radiation, first measured at the University of Saarland, has since become one of the most internationally recognized immediate indicators of magnetic field effects.**

What applies to the hand, of course, also applies to the feet: My attorney uses her **Quantronik device almost exclusively to combat her cold feet** (and, of course, to prevent more serious illnesses). **The effect, by the way, is long-lasting and does not disappear** when the magnetic field is turned off — unlike what happens with an **electric heating pad** (which is not recommended). Because in this case, there is no thermal transfer from outside the body. No external heat energy is being supplied through the surface of the skin.

**The effect of the magnetic field should in no way be confused with the radiation effect of an infrared lamp, which does, in fact, deliver thermal energy to the surface of the body in the form of heat radiation and can lead to heat-related injuries.**

Instead, the magnetic field stimulates the body to react, to make use of its own internal heat, which naturally leads to a tolerable body temperature — and does so sustainably. **Once the blood vessels have been activated, they continue to oscillate for many hours, pulsating fresh, warm blood from the body's interior to the extremities.** So this is an internally generated warmth, stimulated within minutes by the pulsating magnetic field, thanks to increased blood circulation. And this is the major advantage over all the conventional remedies for “cold feet & co.” like heating pads, infrared radiation, and the like.

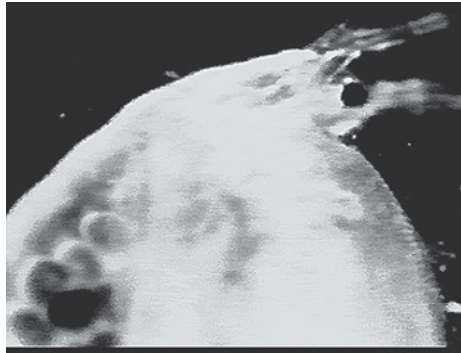
- ♦ ***The Body's Own Heat Generation***
- ♦ ***The Heating Pad — From the Inside Out***

Although effects successfully demonstrated in humans are of course most important for consumers or patients, it was especially the animal experiments shown in the ZDF film that were particularly inspirational for me as a developer and future manufacturer of improved magnetic field therapy devices. After all, they not only illustrated the tremendous possibilities of magnetic field therapy, but also clearly showed the dangers one must be cautious of.

**Let's begin with the possibilities that border on the miraculous:**

### **The Experiment with the Water Flea**

The water flea is perfectly adapted to life in a poikilothermic environment. ZDF filmed it under strong magnification, so that its tiny heart could be clearly seen beating.



Clearly visible was on ZDF: the water flea's pulsating heart directed by the magnetic field

♦ ***A Magnetic Field as the Conductor of the Heartbeat***

Then came the experiment:

*The flea's heartbeat slows down the colder its environment becomes. In winter, under severe cold, its heart nearly stops. We simulated this state in the lab by placing the flea in a glass cuvette filled with ice water... **The heartbeat comes to a stop...***

*Our generator produces low-frequency oscillations. **The small coil emits a pulsating magnetic field, which now penetrates the flea. We increase the frequency to match the flea's natural heartbeat — and lo and behold: The heart begins to beat again, despite the inhospitable cold.***

*Pulsating magnetic fields for resuscitation, and perhaps, more generally, for the treatment of certain diseases? Doctors and health insurers are still hesitant.*

This is what ZDF reported back in 1980.  
The program was a sensation. I was thrilled.

If a magnetic field could already direct the heartbeat of a water flea, then it was only a matter of time before the mystery of the amplitude window could be solved for humans as well. Therapy without drugs or scalpels was within reach — perhaps even realizable through a bold leap in research within just a few years.

When I saw the heart of that water flea awaken again, I knew that precisely directed magnetic fields would be the **medicine of the third millennium**. It was a question of time — and of perseverance. It was a challenge that spoke to me personally, because such a project needs not only a researcher, but also a manager with vision and staying power.

♦ ***The magnetic field reactivates the heartbeat of a water flea.***

Just imagine all the effort and resources medicine has invested up to now to regulate the heart properly! Might it someday be possible to eliminate the need for surgically implanted pacemakers using magnetic fields? Today, I'm convinced that this will be possible in the future — even if our current Quantronik devices are primarily tuned for whole-body effects, especially on blood vessels, and not yet targeted at a single specialized muscle like the heart.

But the heartbeat also has a psychological component. Stress or joy can accelerate the heartbeat. It has been proven that under the influence of certain known special magnetic fields, the pulse rate, and therefore also the heartbeat, can be reduced. **What used to require pharmaceuticals or laborious methods like autogenic training or meditation can now be triggered within minutes using a properly applied magnetic field.** But I don't want to get ahead of myself.

The water flea experiment showcased the vast positive potential of magnetic field therapy. However, the ZDF film also didn't ignore the negative influences that can arise from poorly designed magnetic fields.

Perhaps the most common negative influence comes from magnetic fields whose unfavorable configuration is beyond our control.

*“Every weather condition, whether warm or cold, sunny or cloudy, has its own electrical and magnetic characteristics. Perhaps this is one of the causes of our sensitivity to weather.”*

♦ ***Magnetic Fields Instead of Medication or Pacemakers?***

The magnetic field brings the heart of a water flea back to life. Already back then, the ZDF authors speculated about similar natural processes. At that time, however, it was no longer speculation for me — I had already been working with primitive permanent magnets and had come to the conclusion that one must not only use the attractive side, but also the repulsive and shielding aspects of magnetic action.

Healthy magnetic fields can protect against harmful ones. It was merely a matter of control engineering — a task for a brilliant physicist. And I was soon to meet him.

♦ ***The Magnetic Field Brings  
a Water Flea's Heart Back to Life***

## Chapter 9

# “THE CONSULTATION HOUR” MAGNETIC FIELD THERAPY





## Chapter 8

## “The Consultation Hour”: Magnetic Field Therapy

Watching television is not part of my daily routine, and I usually don’t feel I’m missing much. However, there are programs that are truly worth watching — especially the carefully produced documentaries on the public broadcasting channels, which certainly earn their broadcasting fees in this regard.

One of the most professional programs in the health sector is undoubtedly the show produced by Bavarian Broadcasting (BR) called **“The Consultation Hour – Health Advice.”**

The program has been hosted since its inception by physician **Dr. Antje-Katrin Kühnemann**, whose confident interviewing style manages to get even the most entrenched experts to speak in clear and critical terms about the latest developments in medicine.

As part of the ARD program exchange, the show is broadcast throughout Germany at various times. Although I usually don’t miss an episode, it wasn’t until November 1989, when our research project was already quite advanced, that a business associate from northern Germany told me that there had been a **Consultation Hour episode on magnetic field therapy** on NDR television.

Apparently, I wasn’t the only one interested in the topic: BR even sells the program via the TR-Verlagsunion in Munich on VHS videocassette. It was a **sensational report about the healing of complex bone fractures and circulatory disorders through the use of magnetic fields.**

♦ ***Dr. Antje-Katrin Kühnemann,  
ARD Television on Magnetic Field Therapy***



Participating in this program, alongside host **Dr. Kühnemann**, were guests **Prof. Dr. med. Fritz Lechner**, Director of the Garmisch-Partenkirchen District Hospital, and **Prof. Dr.-Ing. Herbert L. König** from the Institute of Technical Electrophysics at the Technical University of Munich. In the inserted expert segments, contributions were made by **Dr. Ruprecht von Welser** and **Dr. Erwin Lenz**, surgeons at the Garmisch-Partenkirchen District Hospital, and **Dipl.-Phys. Werner Kraus** from the Institute of Medical Physics in Munich.

During the program, **several cases were presented in which conventional therapies had failed, but magnetic field therapy led to healing.**

The first patient shown was truck driver **Norbert Gasteiger**, who suffered a **fibula fracture during a soccer game in 1979.**

From September 1979 to May 1982, he underwent **seven unsuccessful surgeries in various hospitals. He had to come to terms with the fact that he could no longer work in his profession.**

Then he was admitted to the Garmisch-Partenkirchen District Hospital, where, after several weeks of conservative pre-treatment, an intramedullary nail was inserted in October 1982, followed by treatment with pulsating magnetic fields.

After just six weeks, he was discharged pain-free and able to fully bear weight on his right leg for the first time since the accident.

- ♦ *Seven unsuccessful surgeries —  
pain-free just six weeks after applying  
pulsating magnetic fields.*

In the film, he was presented by his treating surgeon, Dr. Erwin Lenz, while unloading his truck.

### **A miracle cure? An isolated case?**

**Werner Kraus**, a physicist at the Institute of Medical Physics in Munich, explained the **function of the intramedullary nail**: This device, shaped like a conventional intramedullary nail, was **equipped with an electromagnetic receiver that allowed electrical energy to be concentrated directly at the fracture site. When the patient placed his leg into the magnetic coil, it was exposed to a pulsating magnetic field, while stimulating electrical energy was simultaneously transmitted to the fracture area.**

Prof. Dr. Fritz Lechner explained that he had been using this type of treatment for about 20 years. He came across it by chance: The physicist Werner Kraus, who had been his patient, inspired the idea of applying the method surgically in difficult bone fracture treatments.

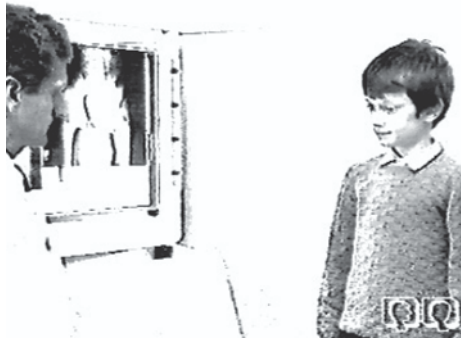
**While simple, closed fractures can be treated correctly and effectively using conventional methods, there are often complications involving infections.** Infection is the most common and serious complication after surgical bone fracture treatment — especially in open fractures.

In pseudarthrosis — a disturbance in bone healing — a false joint develops. **Pseudarthroses that occur after surgery are often accompanied by infections that delay or even completely prevent bone healing.**

- ♦ ***Where all conventional school medicine methods failed, magnetic field therapy achieved healing in a short time.***

### The 9-Year-Old Georg

Dr. Kühnemann presented another case in this program — one that bordered on a miraculous healing:



Viewers saw 9-year-old Georg arriving at the hospital for a follow-up examination. Not long ago, he wouldn't have been able to walk there on his own. It had been feared that he might have to use crutches permanently — or even end up in a wheelchair.

Dr. von Welser reported on his case:

At the age of seven, Georg developed a **avascular necrosis of the femoral head**. He had to endure two extended hospital stays. **In April 1989, magnetic field therapy was initiated. After just two weeks, he was able to walk without bearing weight on the leg.** He still had to use crutches for three more months, but after that, he could walk without them. The pain had disappeared. The magnetic field therapy was continued.

Prof. Dr. Lechner explained: Georg had a avascular necrosis of the femoral head, meaning a part of the femoral head had died. The cause was still completely unclear, even though this condition occurs relatively frequently.

- ♦ ***20 Years of Clinical Experience by Prof. Lechner with Magnetic Fields***
- ♦ ***Coincidence or „Miracle Healing“? Definitely Not!***

The only option available in conventional medicine until now: Very long periods of immobilization and offloading supports.

**But immobilization cannot improve the lack of circulation. The classical treatments had led to no satisfactory results.** Therefore, magnetic field therapy was seen as the last resort. After magnetic field treatment, Professor Lechner was able to have the young patient put weight on the leg again earlier than expected.

I couldn't help but wonder: Why not try it sooner? Why only as a last resort?

Dr. Kühnemann, herself visibly impressed by how this child had been helped, turned with a question to **Professor König**, the other guest in the studio.



(Co-inventor of the QRS system by Dr. Fischer)

♦ *Immobilization Periods Reduced by Use of Magnetic Fields*

He (Prof. Dr.-Ing. König) explained in an understandable way that the magnetic field — being most intense at the point where the coil is placed — still disperses relatively widely. Therefore, **it is believed that the effect is not only local at the site of application, but that a stimulation occurs throughout the entire body.**

The experiment I was already familiar with in principle was shown again - demonstrating the magnetic field effect using a thermal imaging camera. **The reaction to the magnetic field appeared within minutes and was again visible as increased thermal radiation from the subject's hand.**

The explanation:

*Electrical forces, intense electric fields, develop across the walls of blood vessels. This happens because ions are transported within these magnetic fields, or more precisely, within the inductive electric fields. Through this polarization of the blood vessel walls, small **micro-vibrations** arise in the presence of these very strong field forces. As a result, baroreceptors — pressure sensors located in the blood vessel walls (which normally regulate our blood pressure) — are stimulated. This leads to vasodilation (**widening of the blood vessels**). **This alone already brings about a certain therapeutic effect: better perfusion, improved blood volume, and an increase in oxygen partial pressure and substrate pressure in the tissues — all of which result in better tissue supply.***

♦ **Prof. Dr. Lechner and Prof. Dr.-Ing. König  
present scientific evidence of magnetic field effects.**

## Tumor Healing

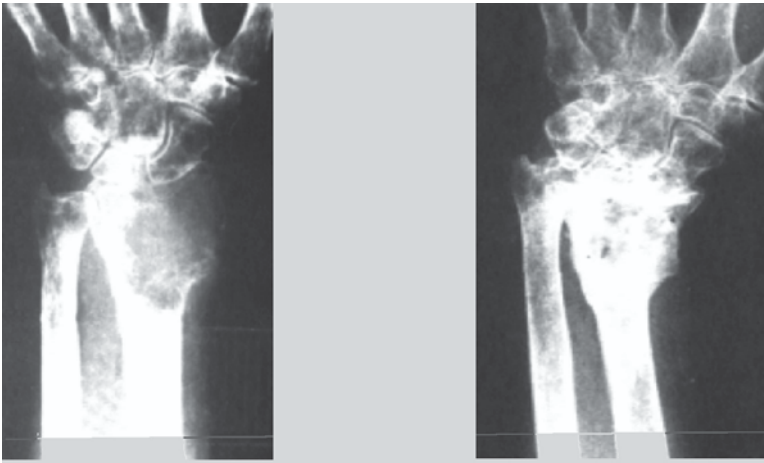
**The highlight of the broadcast** was another extremely spectacular case, also presented by **Prof. Dr. Fritz Lechner**. **It involved the healing of a tumor achieved exclusively through magnetic field treatment.**

The patient had a **giant cell tumor** located near the wrist end of the radius. **The rear part of the radius was completely destroyed — dissolved by a tumor that had eaten away the bone.**

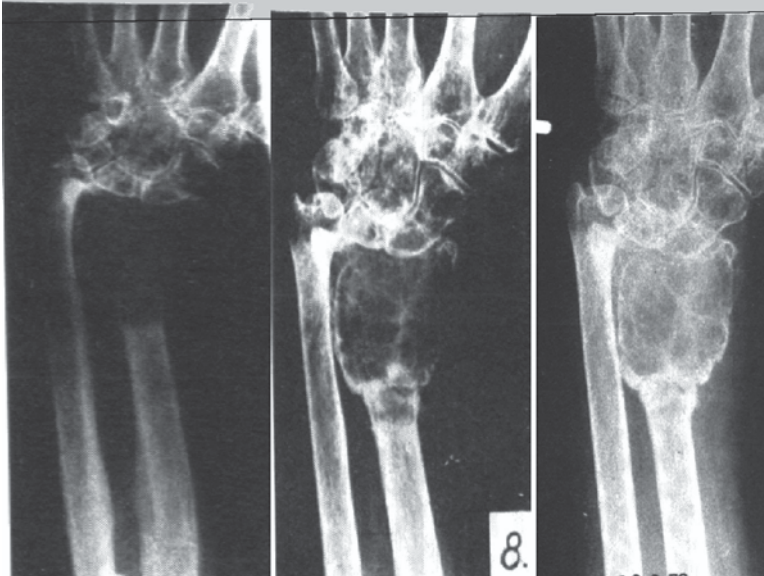
The patient was already advanced in age and had strictly refused surgery, even though she was suffering from severe pain. (Doctors are, by necessity, required to phrase it objectively when someone suddenly loses a structure they've relied on their entire life.) She had only allowed the doctors to remove a sample of the tumor for histological examination. **Her arm was swollen and reddened. After undergoing magnetic field therapy, the bone regenerated completely within six months.**

A fairy tale? No. The before-and-after X-rays, shown side by side, were unequivocal. Following the broadcast, I went to great lengths to obtain **Professor Lechner's postdoctoral thesis** — the scholarly work that had launched his university career. There, the healing process of this elderly rural woman was thoroughly documented with a sequence of X-rays, step by step — and so, the “miracle” became reality for me.

- ♦ *The Effect of Pulsating Magnetic Fields*
- ♦ *Electromotive forces, micro-vibrations, stimuli*



## HISTORY OF MEDICINE



- ♦ *Highlight of the broadcast:  
Tumor healing – Prof. Lechner's  
scientific pioneering achievement*

**The success even proved to be repeatable, and thus not a coincidence! With this, Prof. Lechner has written medical history.** I immediately sought out the books by **Professor König** as well. That was easier, as they were widely available and could be purchased in regular bookstores. As an engineer, physics was naturally not foreign to me. Still, I read — with a certain youthful enthusiasm — how this **grand master of electrophysics** managed to distill entire shelves of specialized literature into just a few paragraphs:

**“Invisible Environmental Influences”** and **“The Dowsing Rod Report”** - these books by Professor König demonstrated how to deal with publicly controversial topics like electrosmog, water veins, divining rods, and so on in a calm and objective manner — topics that many of his academic peers had previously avoided or deemed beneath them.

Especially recommended here is his 1992 work: **“Electric Current as an Environmental Factor”**. This book provides, in its first part, an overview of the current state of knowledge on the subject, and in a second part — written by Engineer Enno Folkerts — practical advice on how to design electrical installations in one’s personal environment in such a way that as few harmful fields as possible arise in frequently used areas, such as bedrooms.

All of Professor König’s books essentially contain four rock-solid conclusions:

1. That’s not how it is
2. That’s how it is
3. This we still don’t know
4. But at the very least, this is what you should do

**I knew I had to bring this world-renowned scholar on board for the Quantronik project. No one else could so authoritatively vouch for the fact that the magnetic fields used belonged to those that were truly “on the safe side” of science.**

♦ ***Important Fundamental Research  
by Prof. Dr.-Ing. König***





## Chapter 10

# SCIENTIFIC PUBLICATIONS + CLINICAL RESULTS





Ilya Prigogine, born January 25, 1917, Belgian physical chemist, was awarded the Nobel Prize in Chemistry in 1977 for his research on “dissipative structures” (self-organization of chemical or biological systems).

In his theory of dissipative structures, he demonstrated that when energy is supplied, large numbers of molecules can suddenly shift from a disordered state to an ordered one, in which they behave cooperatively as a collective — that is, as a whole. As soon as the energy supply is interrupted, all the molecules revert to a disordered state.

♦ ***Nobel Prize in Chemistry (1977)***  
***Ilya Prigogine – Energy Input and Its Effects***

## Chapter 10

## Scientific Literature and Clinical Results

Since I was spending quite a bit of time in scientific libraries searching for Professor Lechner's postdoctoral thesis, I came across numerous applications of magnetic field therapy while browsing through catalogs and reviewing various professional journals and books — many of which I had never heard of before.

At the time, I didn't yet feel ready to take the vision of a large-scale development project public. Above all, I still saw so many untapped possibilities — completely unused. Magnetic field therapy as a last resort when conventional methods fail? That couldn't be right. There still wasn't a proper theory of efficacy to explain how magnetic fields work. But there was an almost endless wealth of documented individual successes. Some of my best ideas came from picking up on unfinished concepts from fellow researchers and developing them further.

So I ask the impatient reader to forgive me if this chapter feels more like an overturned index card box. This purely subjective selection does not claim scientific completeness or acceptance.

You may skip this chapter and move on to the next without losing the central thread of the Quantronik story. But I believe **that even just flipping through this chapter — full of scientifically investigated case studies - might lead some readers to discover a condition treatable with magnetic fields, whether their own or that of someone close to them, and be encouraged to discuss it with their physician.**

♦ ***6,000 scientific reports worldwide on magnetic field indications and clinical outcomes***

Must it always remain the case that magnetic field therapy — as shown, for example, in the program “The Consultation Hour” — is only considered when conventional medicine has given up? **Must the entire dangerous arsenal of chemicals and surgery be exhausted before modern physical treatment methods are even considered?**

Here are a few clinical insights I came across during my studies:

### Neurology

As early as 1903, the University of Budapest reported several cases of trigeminal neuralgia, sciatica, lumbago (lower back pain), and insomnia that were cured through electromagnetic treatment.

In 1967, the Railway Hospital in Peru documented the pain-relieving effects of magnetic fields in cases of causalgia (burning pain), trauma, peripheral nerve pain, and phantom limb pain after amputations. Pain relief was also observed in internal conditions, with some patients achieving long-term or even permanent pain relief.

Various disorders were treated using the magnetic field device by E.C. Müller (approx. 50 Hertz):

### Neuralgias

17 cases, 14 of which were trigeminal neuralgia (nerve pain in the face)

5 patients were cured, 6 patients significantly improved, 6 patients showed no results.

The healing occurred after 10 to a maximum of 31 treatments.

- ♦ ***Neurological Indications***
- ♦ ***Reports from the University of Budapest***
- ♦ ***Railway Hospital Peru, among others***

### **Sciatica**

13 cases, Fully healed: 4

Significant improvement: 4

No result: 5

Success achieved after a minimum of 25 and a maximum of 66 treatments.

### **Lumbago (Lower Back Pain)**

In every case, rapid improvement.

Pain relief after just 1 to 2 treatments.

Complete healing after an additional 8 treatments.

### **Insomnia**

In 17 out of 19 cases, magnetic field therapy had a positive influence on sleep.

### **Diabetic Neuropathy**

According to a scientific report, 21 patients with diabetic neuropathy were treated using the elec-System Biopulse according to the following protocol: Each treatment lasted 10 to 15 minutes with a magnetic field amplitude of 20 to 60 gauss and a magnetic field frequency of 12 Hz.

During the first week, patients received 5 treatments daily, and for the following 5 weeks, only 3 treatments per week. The progression of the illness was evaluated based on classified symptoms.

Compared to a control group of equal size, the following results were observed:

- ♦ ***Neurological Indications***  
***Sciatica, Lumbago, Insomnia,***  
***Diabetic Neuropathy***

In 76% of patients treated with the magnetic field, excellent healing results were achieved, compared to only 17% in the control group.

The experimental group showed a significant reduction in pain, as well as numbness, itching, and tingling sensations.

### **Pneumology (Respiratory Diseases)**

Moscow

Results from the Institute of Pediatrics of the Academy of Sciences of the USSR, Moscow, published in 1980 under the title: **“Correlation of Helio-magnetic Factors with the Cytochemical Status of Leukocytes in Children with Bronchial Asthma”** in: *Pediatrics* 3, p. 60.

According to the authors, children with asthma react very sensitively to changes in meteorological factors (meteorosensitivity). This means that acute worsening of symptoms occurs during sudden weather changes and abrupt shifts in atmospheric pressure.

In a study investigating the correlation between fluctuations of the Earth’s magnetic field and the disease, the activity of glycerol phosphate dehydrogenase (an enzyme found in platelets) and acid phosphatase (an enzyme found in leukocytes) was compared to solar activity (sunspot number), changes in geomagnetism, and barometric pressure variations.

All meteorological indicators were measured on the 3rd, 2nd, and 1st day before the cytochemical examination (as well as on the day of the examination itself and on the following one or two days).

♦ ***Academy of Sciences of the USSR, Moscow:  
Children with Bronchial Asthma – Pneumology***



A total of 32 children were examined, 19 of them over a period of more than 1 year.

The analysis revealed a statistically significant correlation between the activity of glycerol phosphate dehydrogenase and sunspot activity.

A reduction in fluctuations of the Earth's magnetic field stimulated the activity of glycerol phosphate dehydrogenase in lymphocytes. Atmospheric pressure fluctuations, however, had no effect.

### Copenhagen

As early as 1944, results from the Medical Department B of Rigshospitalet in Copenhagen were published. Author: K. M. Hansen, 1944: **Studies on the Influence of Magnetism on the Oxygen Absorption in Man** — published in Acta Medica Scandinavica 118, 4/5, pp. 261–281.

At the Copenhagen National Hospital, it was found that magnetic field therapy could increase **oxygen consumption** and compensate for reduced oxygen uptake.

In a scientifically well-designed experiment, a magnetically induced increase in oxygen consumption was observed in 14% of cases compared to a control group (559 patients tested in total).

At the same time, the number of individuals with decreased oxygen uptake dropped by 17% in the experimental group.

Patients with abnormally high respiratory volume were brought back into normal ranges with the help of the magnetic field.

♦ ***Rigshospitalet Copenhagen:  
Magnetic Fields and Oxygen Consumption***

## Gynecology

### Universities of Moscow and Gorky

The Moscow Research Institute for Gynecology reported significant improvement in inflammatory gynecological diseases after just 3–5 treatments, and also recommends this therapy for preventive purposes. **At the University of Gorky, the reproductive ability of 34.8% of 115 infertile women was restored.**

The Russian Institute for Medical Devices and Equipment reported in 1977 on the use of a magnetic field therapy device called Polus 1:

Traditional physiotherapy for inflammatory gynecological diseases with exudative components has a number of shortcomings and is contraindicated in most cases.

Since 1969, therapy has been conducted using the **Polus 1** device, on a total of 210 patients: 122 in inpatient treatment and 88 as outpatients. In 190 cases, treatment was carried out using pulsating magnetic fields only, without medication. A total of 20 daily applications of the magnetic field were administered. Initial improvement appeared after 3 to 5 applications, sometimes preceded by a temporary increase in symptoms. In all patients, the exudative components disappeared. In 184 patients, there was complete or nearly complete pain relief.

**Bladder and bowel function improved in 68 patients.**

The relapse rate after 1 to 3 years was 14 out of 177 cases examined.

♦ ***Universities of Moscow and Gorky:  
Gynecology – In 115 infertile women,  
reproductive ability was restored***

From the Department of Gynecology at the Institute for Medical Education of the University of Gorky, Donetsk, I read the report by B.T. Noruzhenko, E.V. Molzhaninov, and B. Eutin from the year 1981, titled: **“Role of Magnetotherapy in the Overall Treatment of Women with Reproductive Function Disturbance”** — published in the journal *Akuserstvo i Ginekologija*, Issue 2, pp. 36–38:

**A total of 115 women with inflammatory diseases of the genital organs and infertility of varying duration were treated with magnetic fields under clinical-laboratory conditions. In 85.2% of the cases, menstrual cycles and uterine function were restored. In 34.8% of the cases, reproductive capability was restored.**

Sofia

From the Institute of Gynecology and Obstetrics in Sofia, K. O. Slaveikova already reported in 1980, under the title:

**“Effect of Magnetic Pulses in Chronic Nonspecific Inflammatory Gynecologic Diseases”** — published in the journal *Akuserstvo i Ginekologija* 19, Issue 4, pp. 355–357:

Using a device called the “Magnetimpulsator”, 40 women with purely inflammatory gynecological conditions were treated. Excluded were cases of gonorrhea, tuberculosis, and endometriosis (uterine anomalies). Applied were aperiodic, bipolar pulses with variable, relatively low amplitudes (30–40 Oe = max. 3,200 A/m) and low frequency (6 Hz). Each patient received 15 treatments, 20 minutes daily.

Results: 14 women: complete healing, 23 women: significant improvement, 3 women: no effect

- ♦ ***In 85.2% of cases, the menstrual cycle and uterine functions were restored.***
- In 34.8% of cases, fertility was regained.***

## Urology

Urology Clinic, Moscow

Reported by V. T. Karpuklin, 1981:

**“Magnetic Field Therapy for Kidney Stones in the Ureter”** — published in: Vor prosy. kurtologii, fizioterapii i lecebnoj fiziologiceskoj kultury, Issue 4, pp. 58–59.

Using the **Polus 1 device**, 40 patients with impacted kidney stones in the ureter were treated with daily 20-minute sessions, totaling 20 to 25 applications. Following magnetic field therapy, in combination with mineral water flushing, symptoms were alleviated in half of the group: pain, nausea, altered taste sensations, as well as elevated levels of leukocytes and erythrocytes in the urine normalized.

Clinically, a reduction in hemoglobin (the red blood cell pigment) was observed. Several other biochemical parameters remained unchanged. In total: 20 patients expelled their stones, in 5 patients, the stones dissolved.

## Orthopedics

New York

An especially high success rate was reported in the field of orthopedics.

**The New York Orthopaedic Hospital, for example, reported an 87% success rate in the treatment of fracture-related infections.**

The rate of fully healed bone fractures was similarly high.

♦ ***University of Sofia:  
Great success in treating inflammatory  
gynecological conditions***

## Bremen

**At the Herder Clinic in Bremen, the healing time for osteotomies (bone operations) was reduced from seven and a half months to 16 weeks.** It was therefore almost halved.

## Sheffield

At the hospital in Sheffield, poorly healing fractures, which had existed on average for twenty-eight months, were **healed in 72.7% of cases.**

Sources:

New York Orthopaedic Hospital,  
Columbia-Presbyterian Medical Center,  
and the Orthopaedic Research Laboratories, Columbia University, New York City.

Authors: Bassett, C.A.L., Mitchel, S.N., Schink, M.M., 1982

From a renowned orthopedic journal comes the report: Treatment of therapeutically resistant non-unions with bone grafts and pulsing electromagnetic fields  
The Journal of Bone and Joint Surgery, 64-A, 8, 1214–1220.

In a study involving 83 patients, the healing effect of pulsating magnetic fields was investigated. About 1/3 of the group had fracture infections and, on average, had undergone 2 of 4 previously unsuccessful surgeries.

**In a total of 87% of these cases, healing success was achieved with the help of the magnetic field and additional bone grafts. The failure rate of the treatment is 1.5%.** The average treatment duration is four months.

- ♦ ***New York, Bremen, Sheffield, university clinics***  
***Classic field of application:***  
***orthopedics — 72.7% of cases healed***

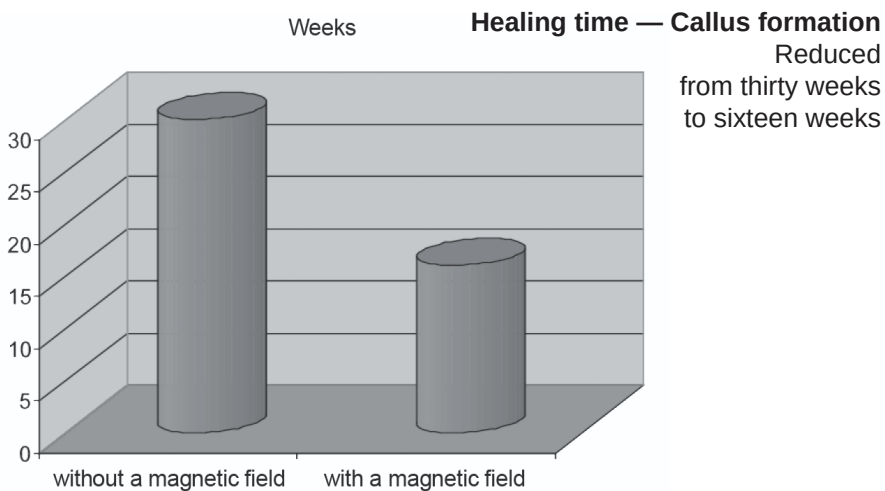
## Bremen

From the Herder Clinic, Department of Hand Surgery and Operative Rheumatology, Bremen, Haimovici, N., Negoescu, M., 1980, reported under the title: **“Influence on callus formation under treatment with low-frequency pulsed magnetic fields”** in *Therapiewoche* 30, 4619–4631

In the comparative study of 32 bilateral osteotomies (bone surgeries) of the metatarsal 1 (midfoot) with plate osteosynthesis (bone fusion), only one of the operated sides was treated with a pulsed magnetic field.

In 56.32% of cases, a significant improvement in callus formation was observed; in 15.60%, only a moderate acceleration could be determined.

The average healing time of the treated osteotomy was sixteen weeks, that of the untreated side thirty weeks (see graphic).



♦ ***From the Herder Clinic, Dept. of Hand Surgery, Bremen:  
Healing rate after bone surgeries nearly doubled***

## Sheffield / London

M. L. Sutcliffe and others reported in *Clinical Orthopaedics* 166, pp. 45–57, 1982, from the Royal Hallamshire Hospital, Sheffield, and Clinical and Technical Research Associates, London, under the title: “The treatment of congenital pseudarthrosis of the tibia with pulsing electromagnetic fields”:

They reported on 37 cases of congenital pseudarthrosis of the tibia (shin-bone), which were treated using pulsating magnetic fields, either exclusively or in combination with surgical methods. In 70.2% (= 26 cases), the treatment was successful.

Of 28 patients with 30 fractures, treated exclusively with magnetic fields, 50% healed.

## New York

The leading magnetic field researcher in the United States, C. A. L. Bassett, together with S. N. Mitchell and S. R. Gaston from the New York Orthopaedic Hospital, Columbia-Presbyterian Medical Center, and the Orthopaedic Research Laboratories, Columbia University College of Physicians and Surgeons, also reported successful outcomes in 1981 under the title: “**Treatment of un-united tibial diaphyseal fractures with pulsing electromagnetic fields**” — published in: *The Journal of Bone and Joint Surgery* 63-A, 4, pp. 511–523.

125 patients with 127 **fractures** were treated exclusively using pulsing magnetic fields (200 nT, 60 Hz). **Full success was reported in 87% of cases.**

♦ *University of Sheffield, London:*  
*Tibial pseudarthroses successfully treated in 70% of cases*

Healing was independent of the patients' age or sex, the duration of the illness, and the number of previous unsuccessful attempts.

The time between the initial trauma and the start of treatment ranged from 2 months to 14 years. Results of magnetic field treatment were recorded for 37 patients. Of those, 31 were completely healed; in 6 cases, the treatment was unsuccessful.

The treatment was applied for 12 to 14 hours a day, for up to 2 months.

### Sheffield

At the Orthopaedic Department of the Royal Hallamshire Hospital, Sheffield, Sharrard, W. J. W., and others tested in 1982:

**“The treatment of fibrous non-union of fractures by pulsing electromagnetic stimulation”**, published in *The Journal of Bone and Joint Surgery* 64-B, 2, pp. 189–193.

53 poorly healing fractures, which had existed for an average of 28 months, were exposed to a pulsating magnetic field (Bassett method). Healing was achieved in thirty-eight cases (72.7%) with an average treatment duration of 6 months. The success rate was even higher (86.7%) when only treatment-resistant tibial fractures (shinbone) were considered.

Previous or active sepsis or implanted plates and nails had no influence on the outcome. The same was true for age and duration of the fracture.

- ♦ *New York Orthopaedic Hospital*
- ♦ *Columbia University College of Physicians*
- ♦ *Sheffield Royal Hallamshire Hospital*
- ♦ *Fractures: complete success in 87% of cases*



## Polus 1

Sensational — though not yet verifiable — is the report by Mitbreit, I. M., Dormidontov, C. V., et al., from the year 1977:

“Use of the magnetic field (Polus 1) in the complex therapy of spinal osteochondrosis and deforming arthrosis” (Osteochondrosis = degeneration of the intervertebral discs) — published in *Novosti medicinskoj tehniki* 3, pp. 69–71.

500 patients were treated. The device Polus 1 (sinusoidal or pulsating 50 Hz, 10–30 mT induction) provided a pain-relieving or pain-reducing effect in all cases.

Improvement of the conditions, some of which included incapacity to work and inability to walk, leading to complete normalization, occurred with magnetic field treatment in 85% of the cases.

In magnetic field therapy applied to the cervical area, a side effect of increased blood pressure may occur.

Medication can be omitted during magnetic field treatment in the cases described.

## Columbia

The American magnetic field authority Bassett of Columbia University published together with N. Canlo and J. Kort, 1981:

**“Congenital Pseudarthroses of the Tibia: Treatment with Pulsing Electromagnetic Fields”** — in the journal *Clinical Orthopaedics* 154, pp. 136–148.

A detailed presentation laid out the results of seven years of research, which aimed to demonstrate the effects of low-frequency pulsing magnetic fields in congenital bone defects across 34 patients. 50% of the cases were described as completely healed.

♦ ***Particularly successful for treatment-resistant fractures:  
85% of all cases healed***

## **Ophthalmology** (Eye Diseases)

Moscow

Magnetic fields were also used successfully in **ophthalmology**: The Moscow Helmholtz Research Institute determined that magnetic fields are highly effective in dissolving retinal swelling and hemorrhages, reducing tissue detachment, and promoting epithelial tissue regrowth. In herpetic eye diseases, pain was alleviated and visual acuity improved. The therapy reduces intraocular pressure and quickly causes hematomas to subside. In the case of glaucoma, half of all treatments had positive outcomes.

Source: Moscow Research Institute for Eye Diseases (Helmholtz Institute)  
Authors: Vainshtein, E.S., et al., 1981

Title: **“Alternating magnetic field in treatment of some eye diseases of vascular genesis”** — published in the journal *Oftalmologicheskii Zhurnal*, Vol. 36, No. 6, pp. 325–328.

77 patients (107 eyes) with eye diseases of vascular origin were treated with alternating magnetic fields.

The magnetic field is exceptionally effective at dissolving retinal swelling and hemorrhages; it reduces the extent of neuroepithelial tissue detachment and can, in part or partially, enable the neuroepithelial tissue (“sensory cells”) to regrow. Overall, visual functions increase after magnetic field treatment.

♦ ***Moscow Research Institute:  
Successful use of magnetic fields in ophthalmology***

Over the span of 25 years, approximately 50 doctoral dissertations have been written in the USSR on the biological effects of magnetic fields.

The **findings for ophthalmology** are:

- An alternating magnetic field has a stronger effect than a static field.
- The vector direction of the magnetic field in relation to the body's organ is critical.
- A positive effect on corneal epithelialization is generally described.
- The blood vessels of the retina are dilated, and a reduction in intraocular pressure is achieved by the magnetic field. These effects remain within the physiological normal range.
- In some cases, when treatment-resistant, the magnetic field can restart blocked blood supply to the retina.
- The magnetic field has a pain-relieving effect.
- Hematomas (bruises) subside quickly under the magnetic field.
- Glaucoma treatment (glaucoma = green star/cataract) is successful in 50% of cases in the magnetic field — even when previous medication treatments had failed.
- **No negative side effects have been observed in the eye or brain tissue.**

♦ ***USSR: 50 doctoral dissertations on magnetic field therapy***

## Stomatology

An American team of researchers completely healed 148 patients with early-stage **periodontitis**. In more advanced stages of the disease, a healing rate of 60% was achieved.

As early as 1980, a **long-term study on the application of magnetic field therapy in stomatology** was published by L. N. Chelidze, T. G. Zhgenti, and M. T. Chichua, which I finally managed to get my hands on after persistent negotiations with a librarian.

The authors examined the effect of magnetic fields (from a device of their own design) on periodontitis. The amplitude was 1–60 Oe (approx. 10–600 nT in air), the frequency 11 kHz. The therapy was applied in ten to twelve sessions of 5–12 minutes each. Tartar had been removed prior to treatment. The severity of periodontitis was divided into four groups.

Significant improvement could already be observed in many cases after four to five treatments. The mucous membrane changed color due to improved blood circulation. Exudation (fluid discharge) decreased. **All patients with early-stage periodontitis (a total of 148) were completely healed through magnetic field therapy.**

Clinical follow-up examinations after one year showed no relapses. In 60% of patients in the second group (160 patients), a regression of symptoms was observed. For the test subjects in the third and fourth groups (312 total), the effect of magnetic field therapy was described as insignificant.

♦ ***Clinical study in the United States:  
Complete healing of early-stage periodontosis***

## Peru

Very interesting studies — conducted over an extended period — originate from the physiotherapy department of the Railway Workers' Hospital in Peru. Here, A. A. Tjurjaeva published in *Voprosy kurortologii, fizioterapii i lechenoj fiziologiceskoj kultury* 32, pp. 48–50, in the year 1967: **“Treatment of dystrophic ulcers and festering and infected wounds on the lower extremities using alternating magnetic fields”** — with the following results:

Since 1938, experiments with 50 Hz magnetic fields have been conducted at this institute.

- a) The simplest verification of the effect of a magnetic field is a slowing of the erythrocyte sedimentation rate (ESR) (this result was confirmed by Lenzi for pulsating magnetic fields; our own experiments also showed this effect, but not consistently across all trials, making statistical validation impossible.)
- b) Furthermore, the magnetic field causes a change in permeability of the erythrocyte membrane. (permeability = penetrability or ease of flow)
- c) Blood coagulation in the magnetic field is slowed.
- d) The phagocytic capacity of leukocytes is increased. (phagocytosis = activity of “scavenger cells”)
- e) In mice, the oxygen demand under magnetic field influence shows a decreasing trend.
- f) The permeability of frog muscle cells increases.

♦ ***Long-term studies from the Railway Hospital, Peru:  
Erythrocyte sedimentation rate slowed***

Based on extensive studies conducted in military field hospitals, **it was proven that magnetic field therapy has a pain-relieving effect in causalgia (burning pain), trauma, peripheral nerve pain, and phantom limb pain following amputations.**

A pain-relieving effect was also achieved in the treatment of internal diseases using magnetic fields, which in some cases guaranteed long-term pain relief.

Good results were observed in hypoacidic and hyperacidic **gastritis** (under- and over-acidification of the stomach).

Furthermore, **healing of skin diseases was achieved through the drying effect** in oozing skin eczema and pyoderma (purulent rashes), as well as in neurogenic eczema.

**Healing of infected wounds and burns through magnetic field therapy.**

Treatment began weekly, then — when granulation tissue (young connective tissue) appeared — daily, and during the epithelialization phase, twice weekly. Initial session duration: 10 minutes, gradually increased to 20 minutes in the 13th and 14th sessions.

After the second session, a healing effect was noted in ulcers and wounds; in 80% of patients, pain disappeared by that time, and in 20%, after the eighth or ninth session.

When granulation tissue was present, it changed color and the secretions became serous (serum-based). Treatment duration until complete healing ranged from several weeks to four years.

♦ ***Studies from military field hospitals prove:  
Magnetic field treatment has a pain-relieving effect.***

## Berlin

A 100 Hz magnetic field is described in *Berliner Klinische Woche* 24, pp. 652–655: “On a New Electrical Healing Method”.

In many interesting individual case observations, the effects of the magnetic field (100 Hz) according to Müller are described.

Phosphenes (light phenomena), taste sensations (pathological taste perceptions), prompt pain reduction, edema reduction, and resuscitation of frogs’ hearts are all phenomena that would be described again later.

In addition, the following indications are listed:

**Neuralgia**

57 cases; 22 healed, 18 improved, 16 not healed.

**Insomnia**

Promptly improved.

**Neurasthenia and Neuroses**

Improvements and healings.

**Spinal Poliomyelitis in Children**

Three cases significantly improved after approx. 40 sessions.

**Gout**

Reduction of swelling and pain.

Similar magnetic fields were also used at the Institute for Electromagnetic Therapy, already published in 1902 by C. Lilienfeld under the title: **“Electromagnetism as a Healing Factor”**, in: *Therapie der Gegenwart* (September, pp. 390–395)

♦ *Report in „Berliner Klinische Woche“  
Healing of skin diseases; neuralgia:  
16 out of 57 cases not healed*

Within half a year, the author — as a physician — gathered clinical-therapeutic experience with a magnetic 100 Hz alternating field (System E. Konrad Müller).

The treatment duration ranged between 10 and 40 to 50 applications. A table presents the indications, showing improvement and partial healing, such as:

1. Peripheral neuroses such as neuralgia, etc.
2. Enteric neuroses such as neurasthenia, hemicrania (unilateral headache), etc.
3. Neuroses of internal organs
4. Organic nervous diseases such as tabes dorsalis (degeneration of the spinal cord)
5. Muscle diseases such as chronic muscular rheumatism
6. Joint diseases

Since most of the conditions were chronic in nature, the healing success is attributed to the magnetic field. Above all, the pain-relieving effect was often striking.

Myositis (muscle inflammation), leukemia, and tumor of the medulla oblongata (brainstem, seat of respiratory and circulatory centers) showed no improvement.

- ♦ ***Neurasthenia and neuroses***
- ♦ ***Spinal polio in children***
- ♦ ***Gout successfully treated***



## Ear, Nose, and Throat Medicine

Kiev

In Kiev, 34 patients with inflammations of the larynx and trachea were treated. Improvement occurred in 22 cases. Chronic tonsillitis was also healed.

In 1978, the journal *Zurnal usnych, nosovyh i gorlovyh bolezney* 3, pp. 38–41, published: **“Electromagnetotherapy of inflammatory diseases of the larynx and trachea”**. The article reported on ENT disorders:

34 patients with inflammatory laryngeal and tracheal diseases such as catarrh, trauma, and radiation-induced damage were treated with a pulsating magnetic field (50 Hz, 500 Oe = 5,000 nT in air, treatment duration 15 minutes, 3–15 sessions). Improvement occurred in 22 cases. 10 patients showed no change, and in 2 patients, the condition worsened.

Magnetic field therapy showed its greatest success in acute laryngeal inflammations, was less effective in chronic conditions, and ineffective in radiation-induced chondroperichondritis (inflammation of the cartilage membrane of the larynx).

**Tonsillitis** — who doesn’t know it? The Pathophysiological Laboratory in Kiev, at the Research Institute for ENT Diseases, published in 1980: **“The search for methods of regulation of immune functions in chronic tonsillitis”**.

II. Effect of alternating frequency magnetic field on tonsillar immunoglobulins in chronic tonsillitis patients in:

*Zurnal usnych, nosovyh, gorlovyh bolezney* 3, pp. 8–11.

- ♦ ***Kiev University Clinic:  
Magnetic field treatment of laryngeal and  
tonsil inflammation in 34 patients  
Improvement in 22 cases***

The anti-inflammatory effect of an alternating magnetic field (200 Oe) in the ELF range was studied, specifically with regard to cytolysis and antibody production in the tonsils of patients suffering from chronic tonsillitis.

The test group consisted of 56 individuals, aged 16 to 40. The advanced form of chronic tonsillitis had persisted in this group for 5 to 10 years. The group was divided in half to enable a comparison between magnetic field treatment and control group. In addition, in vitro studies (test tube experiments) were conducted on the tonsils.

The results demonstrated that magnetic field exposure activated cellular reactions and humoral (fluid-based) immune responses within a chronic focus. This led to a normalization of tonsil function. Exposure time to the magnetic field should not be less than 1 minute and not exceed 15 minutes per treatment. With 10-minute exposure, antibody production in tonsillar cells deteriorated.

## **Immunology**

### **Moscow**

At a Moscow central institute, it was determined that magnetic field therapy can increase the body's immunological activity, specifically the antibody production by B-lymphocytes.

Central Institute for Balneology and Physical Therapy, Moscow.

Grigorieva, D., Tsarfis, P.G., et al., 1980:

“Use of a low-frequency permanent magnetic field in patients with deforming osteoarthritis and rheumatoid arthritis” — published in: *Voprosy kurortologii, fizioterapii*, Issue 4, pp. 29–35.

♦ ***Research Institute for ENT Diseases, Kiev:  
Study on the anti-inflammatory effect of an  
alternating magnetic field***

The analysis of clinical-physiological, immunological, and biochemical data demonstrates that an alternating magnetic field at the site of arthrosis and arthritis triggers a therapeutic effect in half of the treated patients.

Degenerative processes are halted in the magnetic field, and the immunological activity of the body is increased — especially the antibody production of B-lymphocytes (lymphatic cells, a special form of white blood cells).

### **Basic Research**

Loma Linda, California

In the United States, studies were conducted on **blood flow velocity** following treatment with elec-System devices. **The measured value increased significantly in 90% of the test subjects.**

In an equally large proportion of participants, the **oxygen partial pressure** rose by a factor of 4.

**This internationally confirmed the German basic research conducted at the University of Saarbrücken.**

Source: Department of Microbiology, School of Medicine, Loma Linda University, California, Lau, B. H. S., 1982:

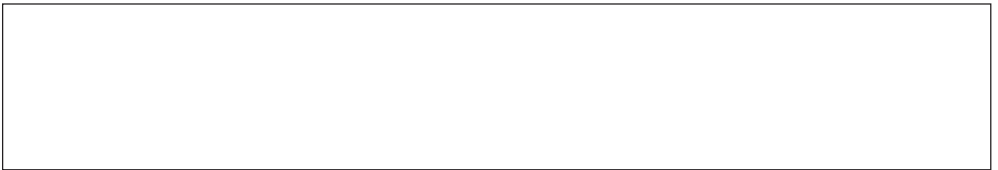
**“Effects of low frequency electromagnetic field on blood circulation.”**

♦ *Through the Loma Linda Institute, California, German basic research on oxygen partial pressure is internationally confirmed.*

## Chapter 11

# BASIC RESEARCH AT THE UNIVERSITY OF SAARLAND





## Chapter 11

**From Flea to Frog**

The magnetic field researchers at the University of Saarbrücken had collaborated on a scientific film for the magnetic field therapy device manufacturer “elec”.

Therapy with Pulsating Magnetic Fields – Fundamental Research: Physiological Mechanisms of Action.

This film presented mechanisms of action of magnetic fields at the cellular level, which are now better understood by research. Some basic concepts were already vividly illustrated and shown with graphic animations, so I still do not consider this film outdated. It belongs to the developmental history of quantum therapy, just as much as the research of Prof. König, Prof. Lechner, Prof. Schauff, Prof. Jovanovic, and Prof. Fischer.

With the kind permission of the producer, elec System GMT-AG, CH-Zug, the original text of this scientific film — modified only for better readability — follows here, including still images from the film. Definitions and emphasis were added to improve comprehension for non-medical readers.

*Basic research and physiological effect parameters of magnetic field therapy.*

*The Saarland University, a research team of physicists, biologists, and medical professionals has been investigating the physiological effects of pulsating magnetic fields in a scientific context for more than ten years.*

♦ ***Early Theories on the Mechanism  
of Action of Magnetic Field Therapy***

The goal of this research group is to identify and measure the various mechanisms by which pulsating magnetic fields act upon the organism.

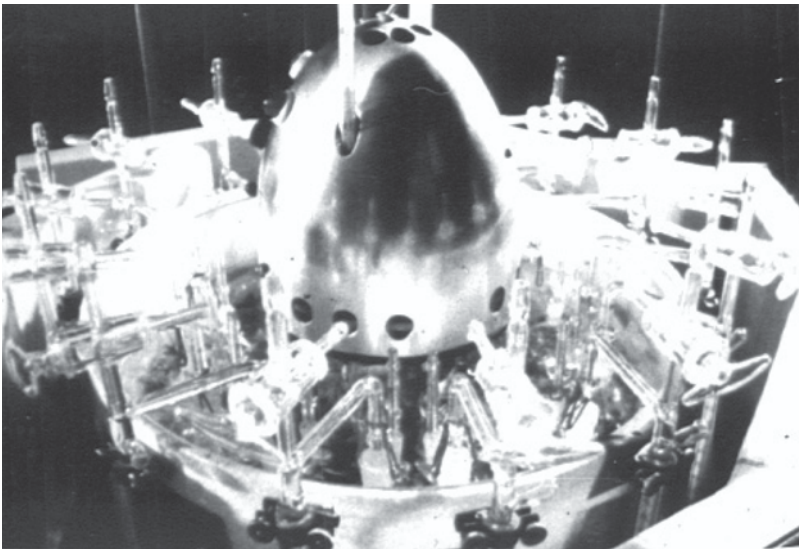
*The work is conducted on three levels:*

1. *Study of international literature.*

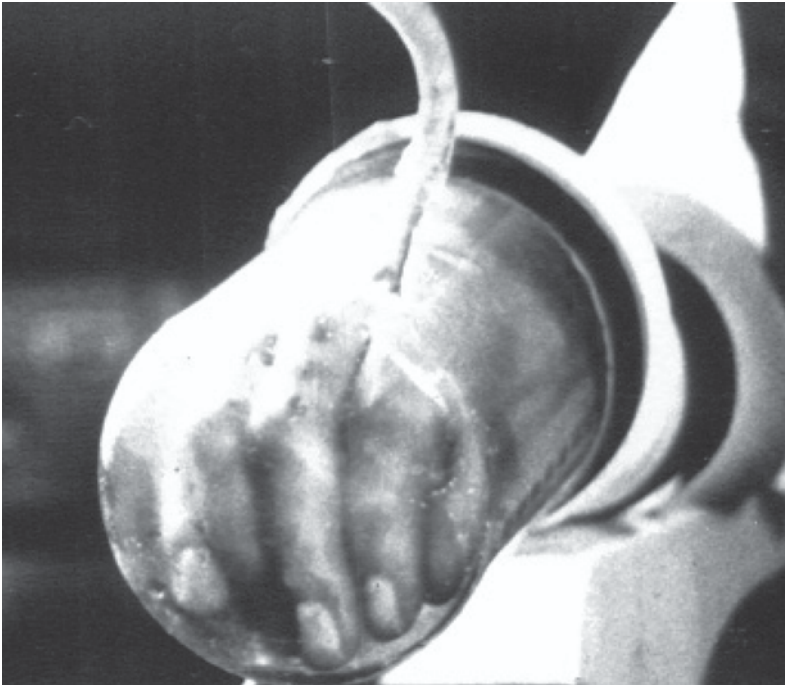
*A database contains more than 6,000 scientific publications on this topic, which can be retrieved based on subject area.*

2. *Experimental trials on various models.*

3. *The effects of magnetic forces on organisms — in vivo (on living individuals), including humans, represent the essential focus of the third level of research.*



♦ ***6,000 scientific publications  
on the effects of magnetic fields***



Measurement of oxygen diffusion pressure on the surface of a hand. One of the foundational experiments for quantum therapy, first conducted at the University of Saarbrücken.

The mechanism of action of pulsating magnetic fields can be explained by the following mechanisms:

### **1. Liquid crystals:**

Cholesterol in membranes as a para- and diamagnetic resonance phenomenon.

**Cholesterol can be influenced magnetically through its molecular structure.** In the presence of alternating magnetic fields, the structure can begin to oscillate, and at a specific frequency — which corresponds to the membrane's resonance frequency — these oscillations reach particularly large amplitudes (natural resonance).

♦ ***Therapy with pulsating magnetic fields:  
Basic research film***



## 2. Lorentz Forces:

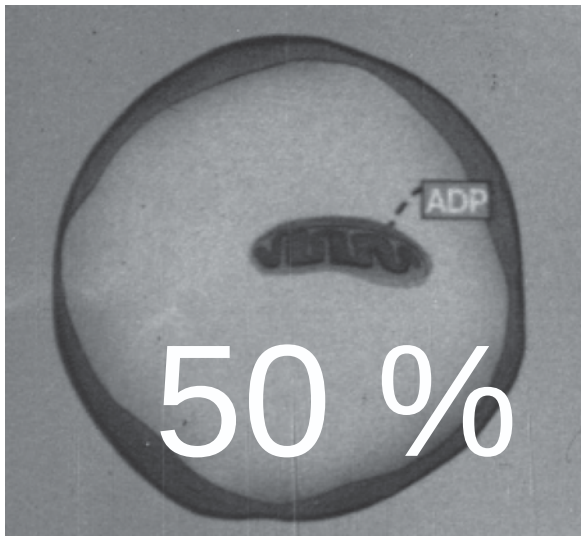
(Through force effect) Influence on moving charged particles in the magnetic field.

## 3. Eddy Currents:

(Induction-based) Formation of electromotive forces and eddy currents.

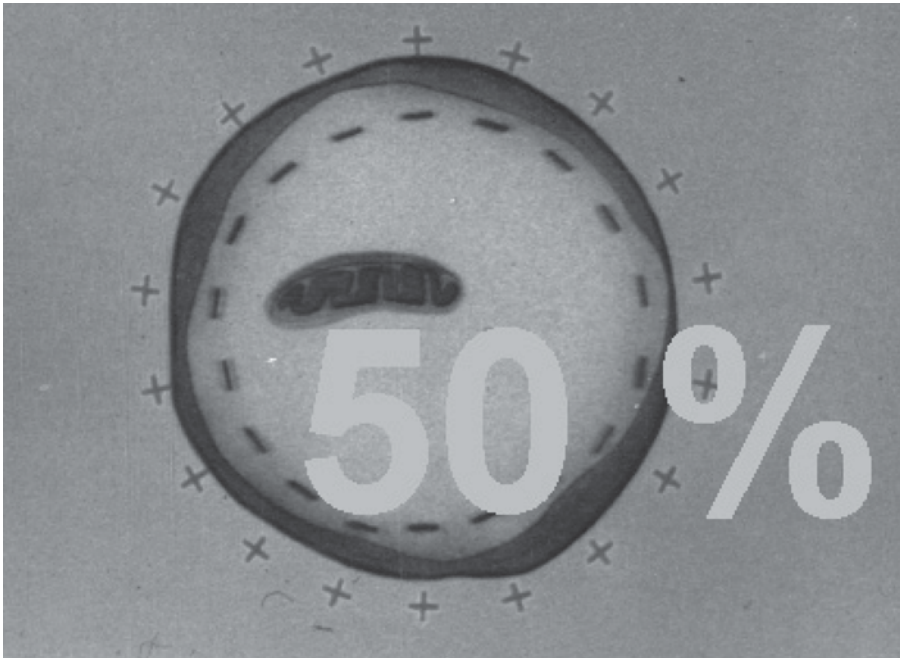
To understand these physical-physiological processes, let us first consider the processes in the microstructure of a cell. The mitochondria present in cells (= the power plants of the cell for energy production) are of great importance for the cell's metabolic processes.

*They absorb the ADP present in the cells and thus function as the energy source of the cell.*



- ♦ ***First film on the three important physiological mechanisms of action: Natural resonance – Force interaction – Induction***

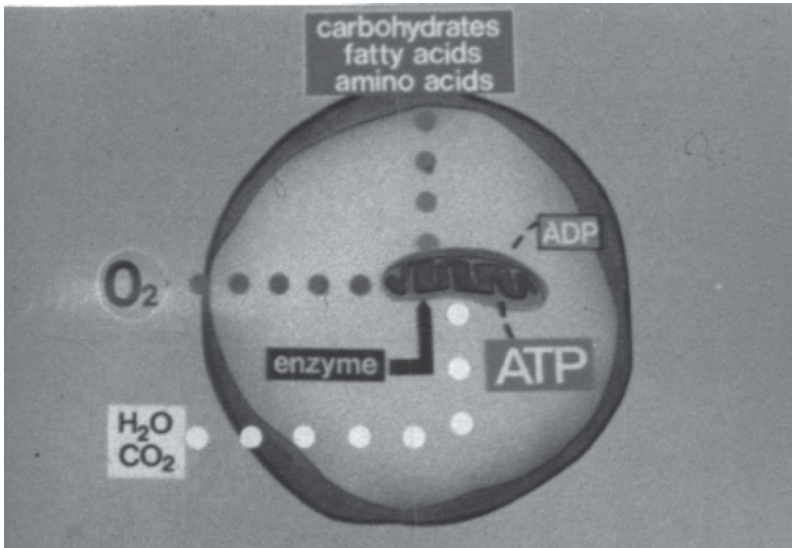
Using carbohydrates, fatty acids, and amino acids along with oxygen and the cell's own enzymes, the mitochondria produce  $\text{CO}_2$  and water as waste products and simultaneously convert ADP into energy-rich ATP. *About 50% of this energy is used to build the membrane potential. The cellular metabolism can then function in a regulated manner.*



- ♦ ***If the cell's energy balance is 50% ADP and 50% ATP, then cell metabolism can proceed in a regulated way.***

If this process is disrupted, a vicious cycle begins:

A deficiency — for example, in oxygen — leads to reduced production of ATP energy.



*This limited energy is no longer sufficient to maintain the cellular membrane potential (potential difference = electrical voltage). This disturbance further reduces the transport of vital substrates, resulting in even less energy being produced. The cycle begins anew.*

*With the help of pulsating magnetic fields, this disturbance can be interrupted. The effect will be demonstrated through the following simple experiments.*

- ♦ ***Reduced energy = deficit in electrical voltage;  
this can be compensated by the magnetic field.***

## Magnet Attracts Nerve

The dissected **sciatic nerve of a frog** is suspended in a container with Ringer's solution (a physiological solution of various salts). Electrostatic influences, i.e., Coulomb forces, are eliminated.

*If this nerve preparation is exposed multiple times to a sufficiently strong magnetic field, the magnetic susceptibility of the tissue changes. (Susceptibility = measure of a substance's ability to be magnetically influenced) **The nerve is then attracted by the magnet.***

## Frog Heart Reactivated

*The heart rate of a frog is directly correlated with temperature. **By freezing the tissue** of the pacemaker centers to a critical temperature, the **heart stops beating**. Using a **low-frequency pulsed magnetic field that is sufficiently strong, the heart can be reactivated**, even at consistently low temperatures. This reactivation is due not only to mechanical stimulation through attractive magnetic forces, but also to the effects of induced voltages and currents.*

- ♦ ***A frog heart in hibernation was revived using a magnetic field without external energy (heat or nutrition).***

## Frog Skin — Breathes Better

A piece of frog skin is tightly sealed over the opening of one container. A second container is connected to it in an airtight manner. Both containers are filled with Ringer's solution. The goal is to measure the influence of a pulsating magnetic field on the **diffusion of oxygen through the frog membrane**.

*To achieve this, one container is flushed with nitrogen to remove oxygen, while the other contains a defined amount of oxygen. A probe measures the oxygen diffusion rate through the frog skin and records it.*

*In the relatively strong pulsating magnetic field with a specific frequency combination, oxygen diffusion per unit of time increases. In this particular experiment, the increase is relatively large: approximately ten times the normal rate.*

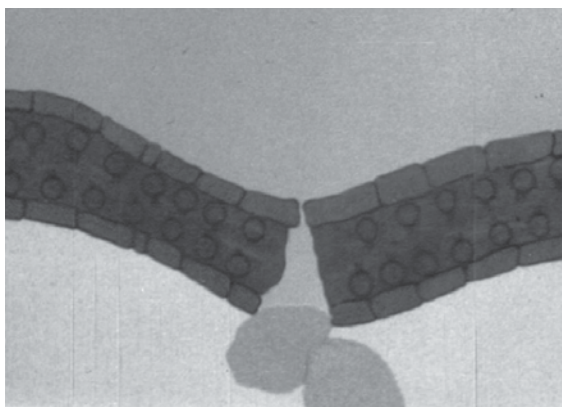
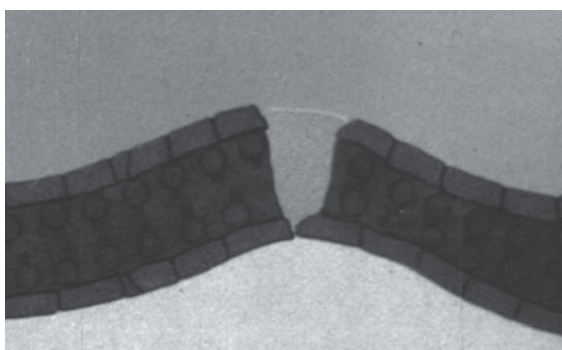
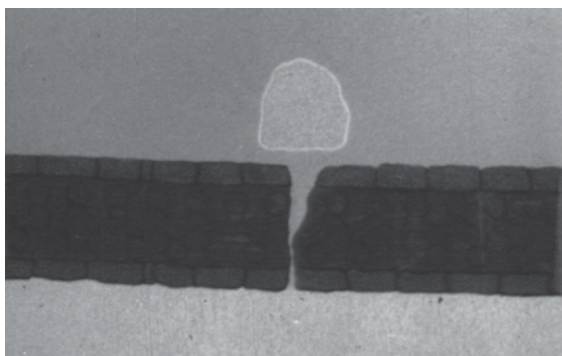
*How can these phenomena be explained?*

*The biological membrane consists of a double layer, which is covered on both sides by protein molecules. The crystals in the molecular structure are loosely arranged and highly flexible. Transport of substrates through this membrane structure into the cell occurs via very complex mechanisms. These mechanisms are highly sensitive to disruption.*

*Deficiency conditions can easily arise for the cell.*

*When this cell membrane is exposed to a pulsating magnetic field, the structures begin to micro-oscillate at its resonance frequency. The membrane pores in the model periodically widen, allowing nutrients and oxygen to enter more easily. Waste products are more efficiently eliminated.*

- ♦ ***Frog skin „breathes“ up to 10 times more strongly under the influence of a pulsating magnetic field***

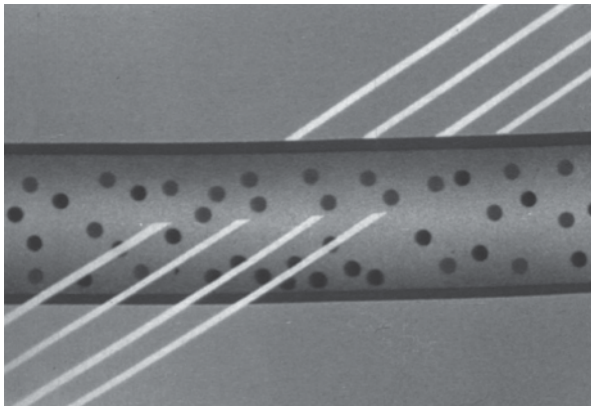


Conceptual Model of Micro-Oscillations of a Cell Membrane, as stimulated by a pulsating magnetic field. They improve metabolism.

- ♦ ***Model concept of micro-oscillations of a cell membrane induced by a pulsating magnetic field***

*Just like saline solution, blood is also an electrically conductive fluid. It contains negatively and positively charged particles, such as colloids and cells.*

*If a magnetic field is applied perpendicular to the direction of flow, the particles in the bloodstream are deflected — depending on the polarity of their charge — perpendicularly to the direction of movement and to the magnetic field direction (according to the Lorentz force).*

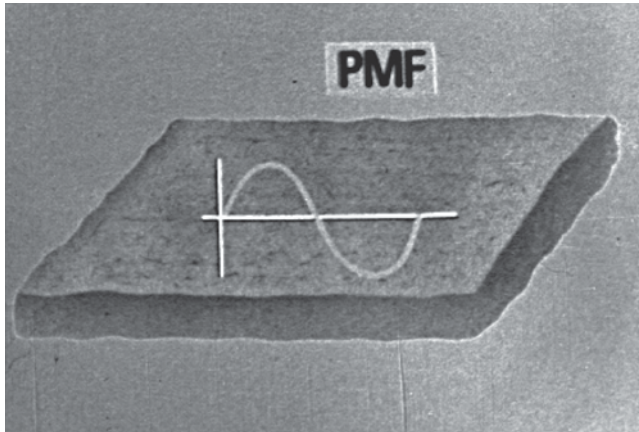


*In a pulsating magnetic field, the charged particles oscillate to the rhythm of the frequency. This reduces friction in narrow capillaries and lowers flow resistance. As a result, blood perfusion increases, as does the diffusion rate for oxygen and carbon dioxide.*

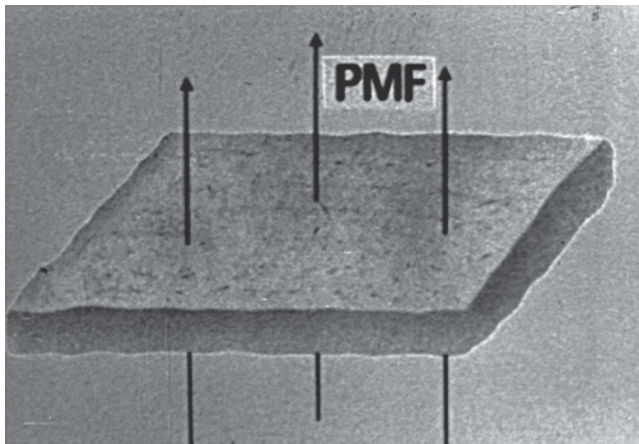
- ♦ ***Pulsating magnetic field in the bloodstream:  
Flow resistance is reduced, perfusion increases.***



*A pulsating magnetic field induces an alternating voltage in every material — that is, in every cell and outside every cell — and thereby creates alternating electric fields that exert a force on ions and other charged particles: the electromotive force.*



*The charges moved by this force generate eddy currents. The sum of all individual currents results in an overall current within the tissue, where transverse membranes represent barriers.*



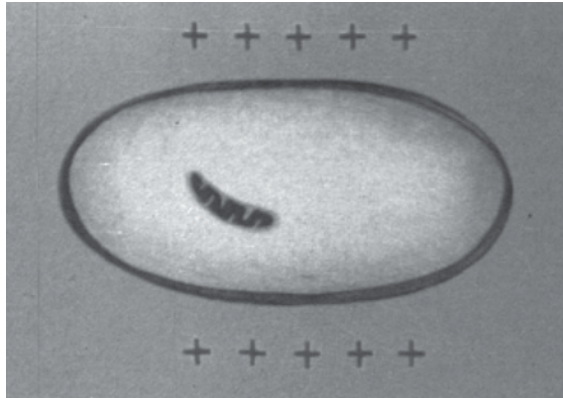
- ♦ ***A pulsating magnetic field induces an alternating voltage in every material, in every cell.***



*Let us first examine this phenomenon in non-specialized tissues and organ cells.*

We start from the following fact:

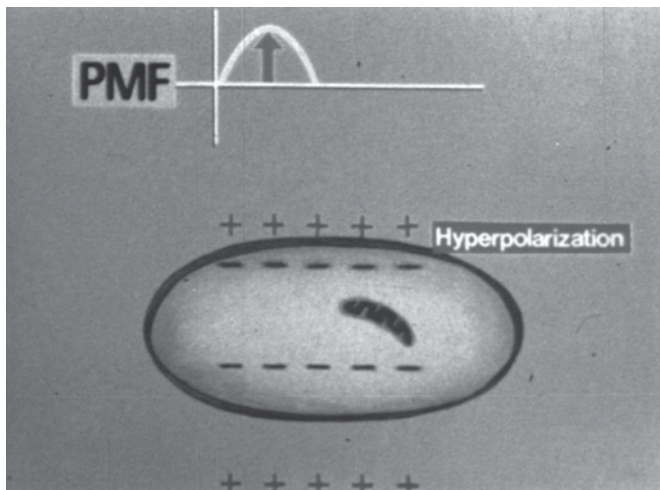
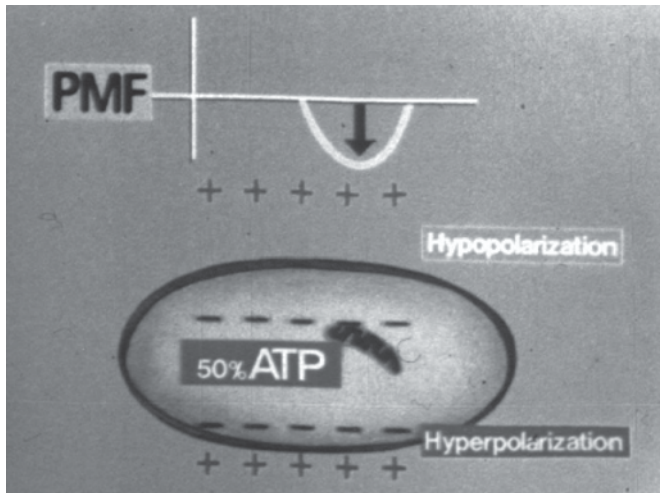
*In a healthy association of cells, there is an excess of positive charge outside the cell and an excess of negative charge carriers inside the cell.*



*If such a group of cells is exposed to a pulsating magnetic field, an alternating voltage is induced. This induced voltage exerts a force — the electromotive force — on the ions inside and outside the cell. The positive electromotive force attracts oppositely charged particles and repels the positive ions.*

As a result, one side of the cell becomes hyperpolarized (large accumulation of charge of a single polarity, e.g., positive), while the opposite side becomes hypopolarized (low accumulation of charge). If a negative electromotive force now acts on the charged particles, the ions behave in the opposite way.

♦ ***The electric potential  
of the cell and its influence***



♦ *The alternating electric field at the cell membrane*

***Let us recall that 50% of the energy produced in the cell must be used to maintain a sufficient membrane potential (voltage across the membrane).***

***Now we realize that during hyperpolarization at the cell membrane, energy is conserved or even replaced.***

***In contrast, the energy loss caused by hypopolarization can be kept relatively small with an appropriate waveform of the magnetic field. From this, we conclude that the energy balance is improved through magnetic field application.***

### **Effect on the Nervous System**

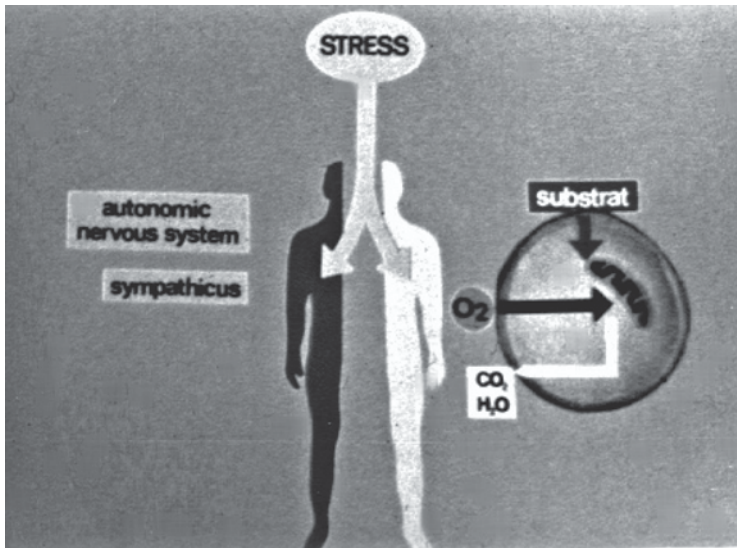
***A special effect of the magnetic field occurs in specialized cells (i.e., cells responsible for communication within the organism). Let us consider the organism as a whole — specifically the autonomic nervous system.***

***If the body is exposed to stress, the sympathetic nervous system responds with dilation of blood vessels in skeletal muscles, but simultaneously causes constriction of blood vessels in all other tissues. (The sympathetic nervous system controls involuntary processes, opposite to the effect of the parasympathetic system.)***

***This results in: oxygen deficiency in the cells and accumulation of metabolic waste.***

***The pH level of the surrounding tissue shifts (pH indicates the acidity of a fluid), which further worsens blood supply — a vicious cycle begins again.***

- ♦ ***Evidence that pulsating magnetic fields improve the cell's energy balance.***
- ♦ ***Improve pH levels, among other effects.***



***Stress is measurable***, for example through the use of impedance curves (impedance = resistance to alternating current), which can precisely record the extent of sympathetic nervous system activity.

***A pulsating magnetic field with a specific frequency (number of oscillations per second) and amplitude can counteract this effect.***

Let us now hypothetically examine these insights with specialized cells, i.e., ***nerve cells***:

For the effectiveness of magnetic fields, the synapses (the switching points for the transmission of stimuli) are the strategically most important locations in the human body.

- ♦ ***Stress is electrically measurable, and thus also influenceable by electromagnetic means.***

*At the synapses, the action potential — i.e., the propagation of a stimulus — is conducted via the nerve fiber to vesicle sacs (tiny vesicles) at the presynaptic membrane (presynaptic = located before the gap of a synaptic unit).*

*The vesicles then release a chemical substance. This diffuses to the postsynaptic membrane (located before the postsynaptic membrane) and ultimately triggers a new action potential at the postsynaptic membrane (located after the synaptic cleft).*

*As with any specialized cell, nerve cells also have a built-up membrane potential:*

***An excess of negative charges inside the cell and a predominance of positive charges outside.***

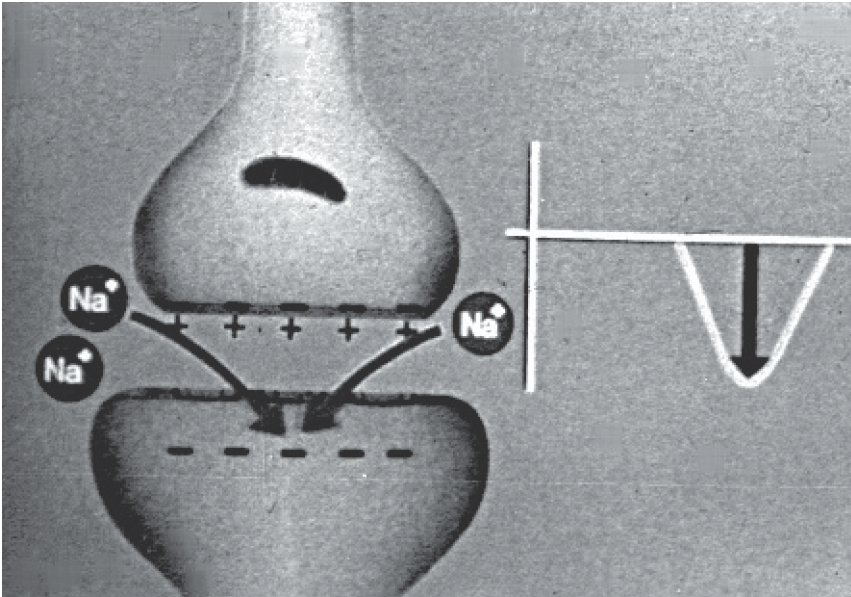
*If nerve cells are exposed to a pulsating magnetic field, additional polarization components arise, just like in regular cells.*

*If the electromotive force is positive, we observe a depolarization component at the presynaptic membrane and a hyperpolarization component at the postsynaptic membrane. With a negative force, this is reversed: Hyperpolarization at the presynaptic membrane, depolarization at the postsynaptic membrane.*

*We can conclude:*

*One membrane is always hyperpolarized relative to the other. **The difference between nerve membranes and the membranes of non-specialized cells lies in the important fact that nerve membranes respond to every hyperpolarization or depolarization component with local reactions in the form of ion influx and efflux.***

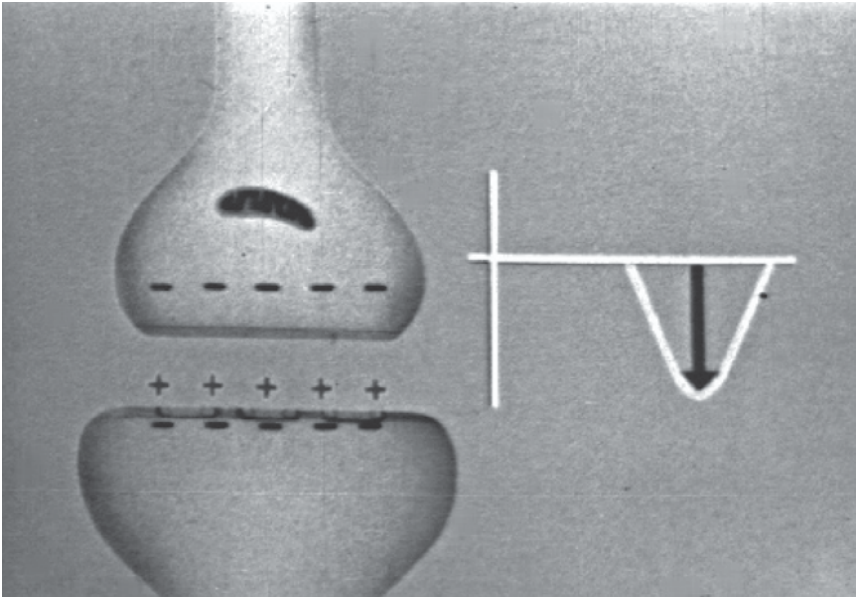
**♦ *If the membrane's electrical potential is out of balance, it can be restored electromagnetically.***



*These local responses to individual impulses can be integrated, especially when many impulses occur in rapid succession.*

Let us now take a look at the various potential distributions at a glance.  
*The sequence of action potentials follows a specific time interval. Only in the sympathetic nervous system is the time interval between individual action potentials particularly large.*

♦ ***The electrical potential at the synapses***

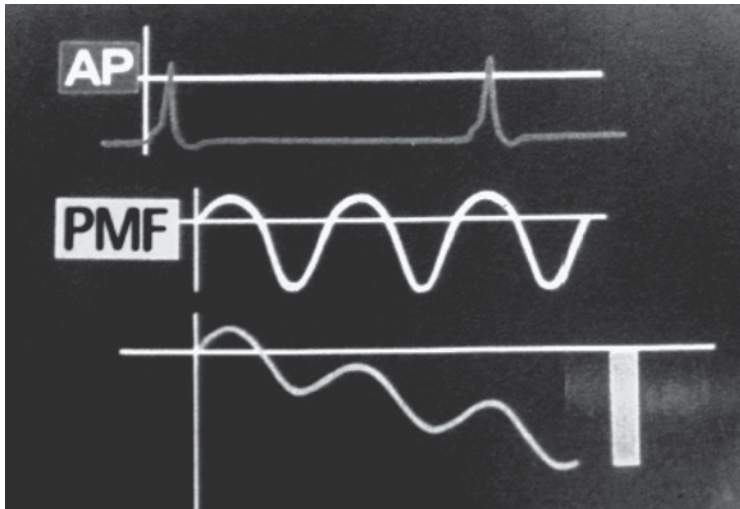


*If the frequency and waveform of the magnetic field (abbreviated PMF = Pulsating Magnetic Field) are set such that the electromotive force can build a sufficiently large hyperpolarizing potential between successive action potentials (abbreviated AP), this results in the inhibition of stimulus conduction.*

*The action potential at the respective membrane is then offset by the value of the hyperpolarization, so that when positive and negative voltages are added, a subthreshold voltage remains. This residual value is then — before a new action potential arrives — rebuilt by the pulsating magnetic field, so that, in the ideal case, a continuous blockade can occur.*

- ♦ ***With the correct frequency and waveform (amplitude window), excitation (stress) can be weakened.***





*This excitation blockade has an effect on the autonomic nervous system. **The stress stimulus is effectively blocked, and the sympathetic nervous tone is relaxed.***  
*(Tone = mechanical tension)*

***As a result, there is no narrowing of blood vessels in the internal organs — on the contrary, the blood vessels dilate...***

- ♦ ***Influence on the autonomic nervous system***
- ♦ ***The stress stimulus is blocked, the sympathetic tone is relaxed.***

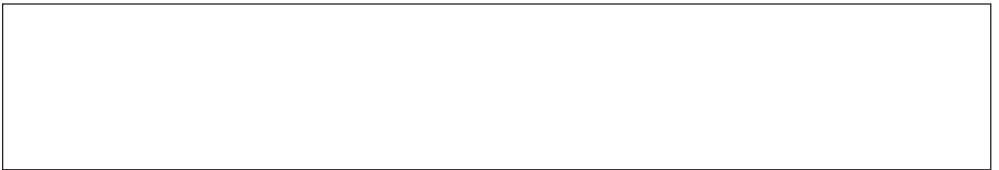




## Chapter 12

# PIONEERS AND COPYCATS





## Chapter 12

**Pioneers and Copycats**

We were initially three inventors working on the development of quantum therapy. My task was to thoroughly examine the market, identify all products already in use, analyze their strengths and weaknesses, plan production and distribution, and provide the necessary funding for our own research through DR. FISCHER AG.

Some people might imagine that an entrepreneur merely delegates work and only makes decisions. While that may be true for some peripheral areas of business, in the core area, and in this case that was magnetic field therapy, personal engagement with the subject could not be replaced by anything in the world.

And in this case, it meant personal physical experience. Soon, I had one of the first devices offered on the market in my hands. I had ordered it after seeing a newspaper ad. For good reason, I will not disclose the name of the device here.

To be fair to the manufacturer, I must acknowledge that nowhere in the elegantly produced brochure — which also served as the manual — does it mention the effect of his own device, but only the general effects of magnetic field therapy.

I quote:

“...Magnetic fields influence all magnetic substances. There is an interaction between magnetic and electric fields.”

♦ ***Useless devices — no one talks about effects, only about unverifiable implications.***

*“Electric charges are also influenced by magnetic fields. The *electric charge carriers are subject to these influences. These influences also determine the mobility and movement of electrons, as well as the entire ion flow.*”*

That may well be correct. But it said nothing about the actual device.  
**It was nothing but empty babble!**

Additionally, the brochure emphasized the device’s harmlessness: *“In the range of extremely low-frequency magnetic fields, in which magnetic field therapy operates, there is no danger of harm. Implants do not pose a contra-indication. There is no thermal effect.”*

That, too, is partially correct. However, pacemakers are also implants — and these can indeed be affected by certain magnetic fields, which is why harmlessness must be separately verified in this case.

**In any case, with this device, no healing or other effect was detectable.** Perhaps the claimed ineffectiveness for implants stemmed from the device’s complete lack of effect.

The device consisted of a control unit housed in a box, to which a so-called “therapy mat” was connected. The frequency could be adjusted from 1 to 20 Hertz, with different therapeutic effects ascribed to each frequency.

Together with my doctor, I tested all applications over several weeks. There was no improvement in my rheumatic complaints, nor in my stomach issues. Even the mild migraines, which had persisted despite the success of the magnetic plasters, did not improve. At least for me, this device was ineffective.

♦ ***Ineffective – and possibly not harmless!***

Only those who have suffered from long-standing ailments, who lived or still live with constant pain, can understand how much a sick person clings to every possible hope of relief or healing.

My doctor, already convinced by my earlier reports, now wanted to obtain a meaningful magnetic field therapy device for his practice and meanwhile asked me for advice. Although I suspected that the device he needed — and which had begun to take concrete form in my mind — had yet to be built, I promised to help him, as a technician, with the selection of the device. After all, I would have to have all of them tested anyway...

Above all, I first spoke with **Professor König**, who already had extensive experience with magnetic field therapy devices. I also showed him the device I had already purchased, which had shown no effect on me.

He cast just a brief glance at it and said: *“I know this device. I’ve measured it before. It cannot produce an effect, because the magnetic field only penetrates to a depth of barely 1.5 centimeters with usable intensity.”* Why this was the case, he explained to me in under five minutes. Basically, it was ninth-grade physics, and **it was more than astonishing that devices which did not even meet the most basic requirements were still being sold at the price of a good color television set.**

This was also due to the legal situation in Germany at the time:

**Magnetic field therapy had, in recent years, seen encouraging developments, including insurance approval for a number of indications.**

♦ *How deep does the magnetic field penetrate?*

Of course, it was not initially the general population of insured patients that established the reputation of magnetic field therapy in Germany.

Alongside the successes already described by Professor Lechner and his colleagues and students, there were also **spectacular results achieved in sports medicine and veterinary medicine.**

As early as 1981, Stefan Fischer had documented in his film on magnetic field therapy the **successes of the progressive sports physician and orthopedist Dr. med. Herbert Plohm**, team doctor of the second-division soccer club Fortuna Köln, such as: *“Goalkeeper Gert Wels suffered a midfoot fracture with torn ligaments and a severe post-traumatic hematoma after a player from VfB Stuttgart stepped on his foot during a cup match against Fortuna Köln. We had to cast the leg for an extended period and additionally applied magnetic field therapy to accelerate the absorption process... He has been back in training for four weeks, the fracture has healed, and his foot’s load-bearing capacity is fully restored...”*

That was the sports physician speaking in the film.

**Meanwhile, some leading figures in American sports medicine are using magnetic fields not only for treatment but also for preparation of the body for competition. A kind of legal “doping” — which cannot be detected afterward and cannot be banned, because magnetic stimulation is not unnatural and does not backfire like anabolic steroids.** Among other things, they utilize the already mentioned ability of magnetic fields to increase the oxygen partial pressure, thereby boosting the performance of the musculature.

- ♦ ***Sports physician Dr. med. H. Plohm:  
Spectacular results in sports medicine***
- ♦ ***Magnetic fields as „legal doping“***

I was also especially pleased that in the summer of 1994, a cellist friend of mine from Munich was able to successfully treat his “**tennis elbow**” on his own — using a Salut device I had provided for testing, which was actually intended for preventive use — after just three applications within a single day. He thanked me with a lovely private concert.

In the field of large animal veterinary medicine, especially in equine orthopedics, magnetic field indications have increasingly become the standard. **Animal healers** are also using magnetic field devices in small animal practices — for cats and dogs, for example — in many ways, such as to **enhance the effects of homeopathic remedies**.

This positive development has, however, often been carelessly put at risk.

I see three main dangers — which still exist today:

1. The uncritical and amateurish use of magnetic field therapy.
2. A second danger lies in the fact that some manufacturers are still entering the market with devices that cannot withstand scientific evaluation. In some cases, even the depth of field penetration — which can be easily calculated or measured — is incorrect, as experience shows.
3. Manufacturers who had no prior involvement in magnetic field therapy, have done no basic research and conducted no clinical tests, suddenly see an opportunity to grab market share with hastily assembled, low-cost devices.

♦ ***Beware of disreputable manufacturers!***



For every vehicle, every technical device — even every iron — an inspection by the TÜV (Technical Inspection Association) is mandatory. But for therapeutic devices, there are currently no regulations in the Federal Republic that, similar to the approval of pharmaceuticals by the Ministry of Health and its agencies, would require **proof of efficacy for these devices**.

Some of the claims made in promotional materials and advertisements are so misleading and inaccurate, they cannot stand up to critical scrutiny.

**Before we ever created a single design drawing for our own device, I traveled around the world — like a journalist chasing a big story — interviewed many people, bought hundreds of devices, sometimes at prices that made me hesitate.**

**I tested them on myself — sometimes with partial success — then passed them on to the Technical University of Munich, to the University of Saarbrücken, to Professor Jovanovic in Belgrade, to doctors, clinics, practitioners, theorists, housewives, writers, and even philosophers.**

I wanted to obtain the widest possible range of opinions. And here is **my current conclusion**:

As always in life, good ideas are discredited by charlatans, copycats, and dilettantes.

The findings and the immense work of a small number of companies that engage in serious scientific research on the subject are often pushed into the background, because all too often it is the brazen who triumph, while the serious are pushed aside.

♦ ***Warning about charlatans***

**I would like to issue a strong warning against buying a so-called magnetic field therapy device if the selling company cannot provide real scientific documentation for its product — through independent evaluations from public universities or university clinics operating under the supervision of recognized professors.**

One should place no trust in endorsements from individual private physicians, alternative practitioners, patients, or private institutes, because the research background is so complex that “lone fighters” simply cannot be up to date with the entire scope and latest developments, and they often lack the necessary qualifications.

Never forget: Any child who connects a coil of wire to their Walkman instead of headphones can, in principle, create a magnetic field device. This wire loop does indeed produce a magnetic field when an electrical signal from music flows through it. The only question is: **Does this magnetic field device qualify as a therapeutic magnetic field device?**

Magnetic fields from a Walkman — a ridiculous comparison?  
Not at all.

There are even manufacturers who bombard users with their devices using mystical sounds, light pulses, and magnetic fields simultaneously and claim that this would intensify the effect.

That may be the case — but what effect is being intensified, and **where is the scientific evidence?**

♦ ***Pay attention to scientific verification!  
(Universities!)***

Because, for example, a Walkman is already technically certified, **one can — through clever presentation in promotional brochures — easily fabricate test seals, which, however, apply only to parts of the device. Likewise, there are often references to patents that pertain only to components that are not essential to the system.**

Anyone can say: “I own a patented car,” because thousands of patented parts go into every car.

But a patented switch does not make a patented magnetic field device.

What **matters in magnetic field therapy** is not just the hardware, but the software — the **know-how** in designing the magnetic field itself: the choice of pulse shapes, the timing, and the distribution of quantum pulses emitted into the body.

**You must pay attention to this when comparing patent claims from different manufacturers.**

**Based on my current knowledge, there are only three systems in Europe that offer a solid scientific background.** This includes the **elec-system** already mentioned multiple times, as well as the **Sensodyn system**, the **Magnetodyn method**, and — if I may be permitted to add this — of course the **Quantron system** and all systems based on its underlying patent. It was not developed in a makeshift garage workshop but at renowned scientific institutes in collaboration with the Technical University of Munich, the University of Saarland, the University of Wuppertal, the University of Belgrade, the University of Graz, the University of Minsk-Moscow, and others.

♦ ***Examine patent protection carefully!***

If there are other systems on the market that I am not aware of, it is easy to assess their seriousness and safety by requesting corresponding independent scientific evaluations.

**Please don't be fooled when certain companies repeatedly use publications and studies from other systems as their own background and display official-looking patent certificates!**

**If you take a closer look at these patents, you'll find they typically refer only to mechanical components or design elements of the product — but never to the components required to bring about healing.**

Therefore, my urgent recommendation: take a close look and examine carefully, because so-called “magnetic field blankets” are being offered — especially at promotional events for seniors — for exorbitant prices, while being worth barely a twentieth of that.

Check the manufacturer carefully using the following criteria **checklist:**

- |  |                                 |                                |
|--|---------------------------------|--------------------------------|
| 1. Are the developers independent and not financially involved in the marketing?   | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 2. Was the product developed by independent scientists — preferably more than one? | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 3. Are the developers recognized authorities in their respective field?            | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |

4. Are the developers proven, recognized scientists?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
5. Are there any scientific publications, books, reports, radio or TV broadcasts about the product?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
6. Has the product been tested by a government-recognized institution?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
7. Is the product patented? (Patented specifically for its therapeutic effect on humans)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
8. Is there scientific supervision for the product (e.g., MDs or Professors of Medicine)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9. Is the product safety certified? (e.g., TÜV, GS – Tested Safety mark)	Yes <input type="checkbox"/>	No <input type="checkbox"/>
10. Are truly serious and competent professionals involved with the product?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
11. Is the company financially stable and secured for the future?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

You should be able to confidently answer “Yes” to all of these questions.  
**Even a single “No” should raise serious concerns.**

♦ ***Checklist for reputable magnetic field therapy devices***

**Chapter 13**

**RECOGNITION  
BY THE  
HEALTH INSURANCE  
PROVIDERS**





## Chapter 13

## Health Insurance Providers: Hesitant Recognition

Among the financial considerations that fell under my area of responsibility was, of course, the question: How has **magnetic field therapy been accepted so far within our healthcare system?**

Do health insurance companies reimburse medical treatments using magnetic field therapy?

I learned that some insurers covered costs in the following cases:

**Delayed bone fracture healing**

**Pseudoarthrosis**

**Loosening of endoprostheses**

**Idiopathic femoral head necrosis (primary tissue death of the femoral head)**

This was disappointingly little given the global research findings — of which I have so far only presented a few. For over two decades, renowned scientists, physicists, and doctors have been engaged in the development of magnetic field therapy.

**The results are convincing. Why, then, is this healing method still unknown to most suffering patients?**

♦ *The health insurance providers have waited far too long.*



## Why only as a last resort?

Why was it used by so few physicians, and then only as a last resort?

How did the medical device industry react to this therapy? What supportive measures were made available by the state for the further development of magnetic field therapy?

I found out that there was hardly any state funding for the further development of magnetic field therapy. An application submitted by the University of Saarland still has not been decided to this day.

The German medical device industry, which enjoys an excellent reputation worldwide, has so far dealt with the production of magnetic field therapy devices reluctantly or hardly at all, and only for those indications reimbursed by insurance. Where are the research investments for truly innovative methods?

How great was the **acceptance among physicians** for this new application?

In a long and intense conversation, my physician admitted that the majority of his colleagues — he was clearly trying not to discredit his own profession — were skeptical or opposed to magnetic field therapy.

Between the lines of his statements, I could infer **that the economic aspects of magnetic field therapy were less favorable to conventional physicians than those offered by traditional therapies.**

- ♦ ***Magnetic field therapy:  
Too affordable for our healthcare system?***
- ♦ ***Why only as a last resort?***

So is this a *circulus vitiosus* — a vicious cycle?

**Are doctors the “amigos” of the pharmaceutical industry?**

**No!**

**I myself have doctors in my family, I know their ethics, and I simply cannot believe that the majority of physicians, for material reasons, would avoid the — let’s just say it outright — more affordable magnetic field therapy, simply because it might cost them long-term or chronic patients.**

However, it may very well be the case that the powerful medical lobby influences the allocation of government research funding, just as there may be interdependencies between physicians and the medical industry that equips their practices.

**Health insurance providers inevitably fall in line with this functionary-driven cycle. And thus, the development of a new and effective therapy stagnates, even though it could quickly bring healing to millions of people and save billions in healthcare expenditures.**

- ♦ *Doctors as „amigos“ of the pharmaceutical industry?*
- ♦ *Functionaries and „amigos“*



**Chapter 14**

**EVALUATION  
BY  
NATUROPATHIC  
PRACTITIONERS**





## Chapter 14

## Evaluation by Naturopathic Practitioners

Among naturopathic practitioners, magnetic field therapy is a well-known method. Understandably so — the therapy, using advanced, electronically controlled devices, is relatively new and successful, which makes it ideally suited to sometimes achieve spectacular results in cases deemed untreatable by conventional medicine.

Our health policy is structured in such a way that it tends to push naturopathic practitioners into “gap therapy”, which paradoxically means that they most often have to deal with the most difficult or so-called “incurable” cases — instead of the simpler ones that, given their usually shorter education, would be more commonly expected of them.

Because they are often confronted with seemingly unsolvable cases, naturopathic practitioners are frequently more challenged than the often skeptical physicians, and they more readily find solutions with more original therapies than conventional medicine — which, in turn, tends to adopt these successful approaches later on as if they were always part of its own repertoire.

With regard to magnetic field therapy, I especially came across a book by the naturopath Dr. Karlheinz Hanusch. In his book *Magnetic Field Therapy*, he describes five case examples of successful applications of magnetic fields:

### Back pain

A 34-year-old woman suffered from severe back pain because two of her lumbar vertebrae had degenerated due to decalcification and were pressing on her nerves.

- ♦ ***Naturopaths as the gap fillers of conventional medicine?***
- ♦ ***Evaluation by Naturopathic Practitioners***

Although conventional treatments had failed, she refused to undergo surgery. After two weeks of daily one-hour magnetic field therapy, improvement began, and the pain subsided.

### **Hip pain**

An elderly lady, who had received a ceramic hip joint five years earlier, suffered from severe hip pain. Various therapies from other practitioners had shown no effect. Hanusch treated her with magnetic field therapy. After the first treatment, there was a significant increase in pain — the so-called “re-active phase.” After the fifteenth treatment, the patient was pain-free — and remains so to this day.

### **Osteoarthritis**

A 57-year-old patient was severely limited in mobility due to intense arthritic pain. Since conventional treatments had failed, Hanusch decided to use magnetic field therapy.

After one to two daily treatments, significant improvement was noted, and after eight weeks, the patient was free of complaints. Six months after discontinuing magnetic field therapy, the complaints returned. However, after resuming therapy under the same conditions, symptom relief reappeared after just one week. The magnetic field therapy was then continued every two to six days. The patient has now been symptom-free for over a year. What is especially interesting in this case is that no other therapy was used alongside the magnetic field treatment.

### **Osteoporosis**

A 72-year-old woman, severely restricted in movement due to years of osteoporosis (lack of bone tissue), sustained an elbow fracture. Conventional treatment — immobilization — was unsuccessful, as the X-ray showed no callus formation. The case seemed hopeless.

♦ ***A report by Dr. K. Hanusch on  
Back pain, hip complaints, osteoarthritis,  
osteoporosis, painful menstruation***

Three months later, magnetic field therapy was initiated, two to three times daily for 20 minutes, applied directly to the fracture.

After six months, the magnetic field treatment could be discontinued, as the patient, within the limits of her overall condition, was considered to be recovered.

### **Painful menstruation**

A patient suffered from cramping lower abdominal pain. Procaine injections were administered in combination with two magnetic field applications. With daily treatment, the patient was symptom-free after ten weeks.

♦ *Magnetic field therapy successful  
among naturopathic practitioners*

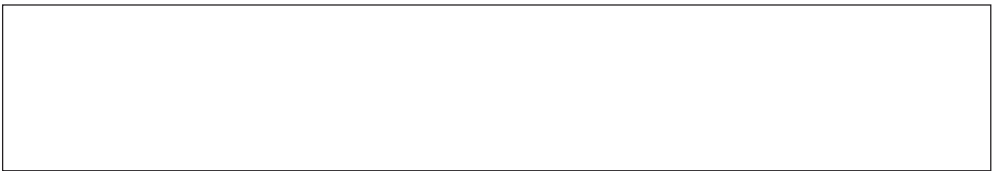




**Chapter 15**

**MAGNETIC FIELD  
THERAPY  
LARGE-SCALE STUDY  
ON 50,000 PATIENTS**





Chapter 15

**Magnetic Field Therapy  
Large-Scale Study on  
50,000 Patients**

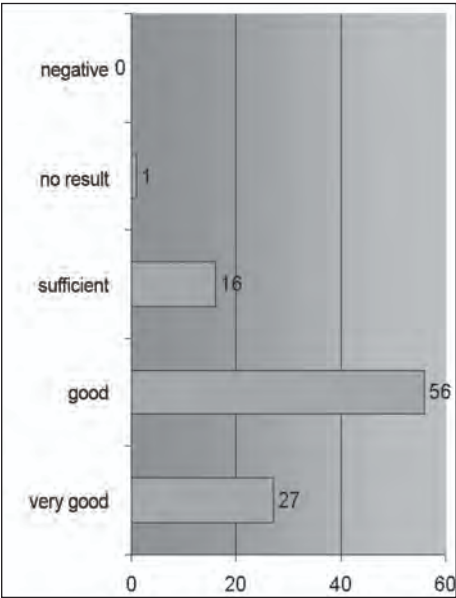
We received an interesting publication from the company elec, written by Manfred Fichtner, titled: **“The Use of Pulsed Magnetic Fields in Home Treatment.”** This report discussed the **Sanapulse and Vitapulse systems produced by the company elec-System**, which has already been mentioned multiple times in this book as a renowned manufacturer of classical magnetic field therapy devices.

The publication presented data collected from **642 treating physicians**, based on approximately 50,000 patients who underwent magnetic field therapy. The following results were reported:

**Degenerative Diseases  
of the Musculoskeletal and  
Joint System**

95 participating physicians

(Results in percent)



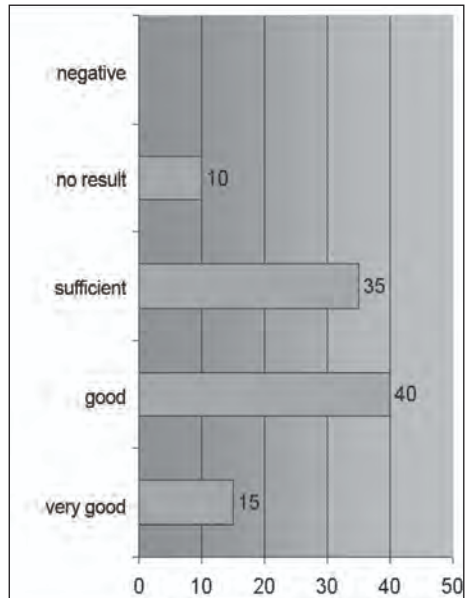
♦ *Large-Scale Magnetic Field Study  
involving 50,000 patients and 642 physicians*

### Epicondylitis

(**Severe inflammation** of the periosteum of the bone — also known as “tennis elbow”)

44 treating physicians

(Results in percent)

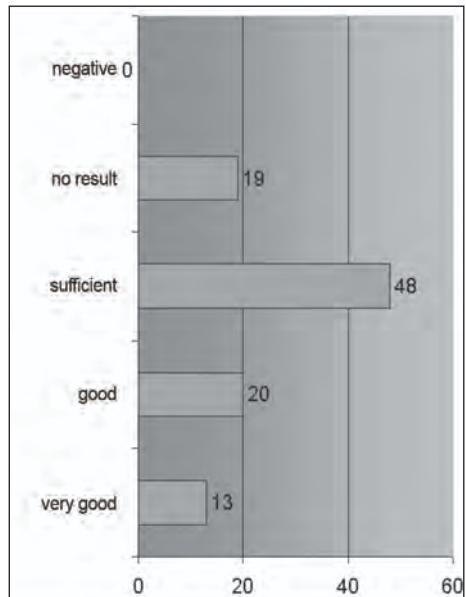


### Osteoporosis

(Brittle bone disease — loss of **bone** mass)

38 treating physicians

(Results in percent)

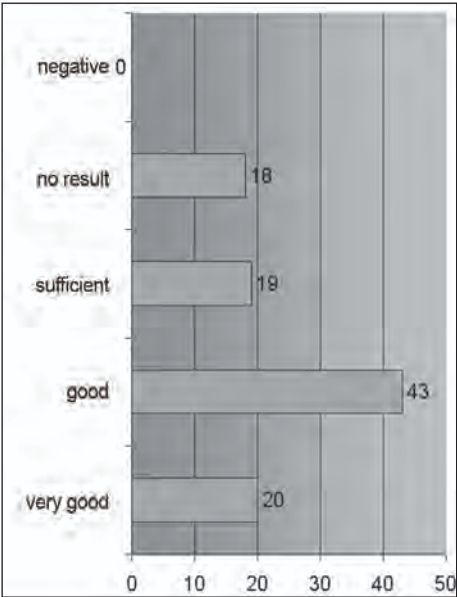


- ♦ ***Epicondylitis 90% rated outcomes from very good to satisfactory***
- ♦ ***Osteoporosis 81% showed positive response***

Geriatric Adynamia  
(Age-related lack of strength)

31 treating physicians

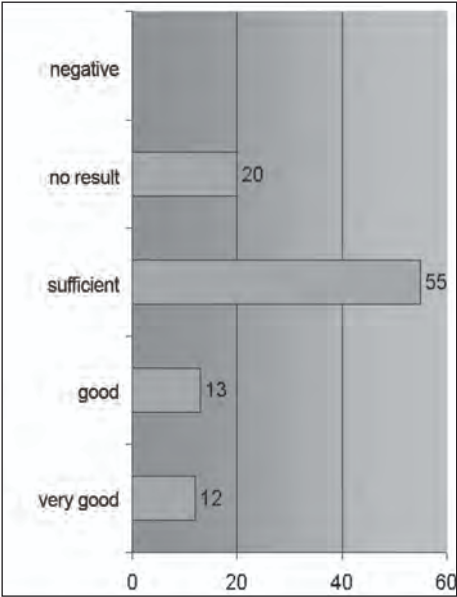
(Results in percent)



Sexual Insufficiency  
(Erectile dysfunction /  
sexual performance issues)

12 treating physicians

(Results in percent)

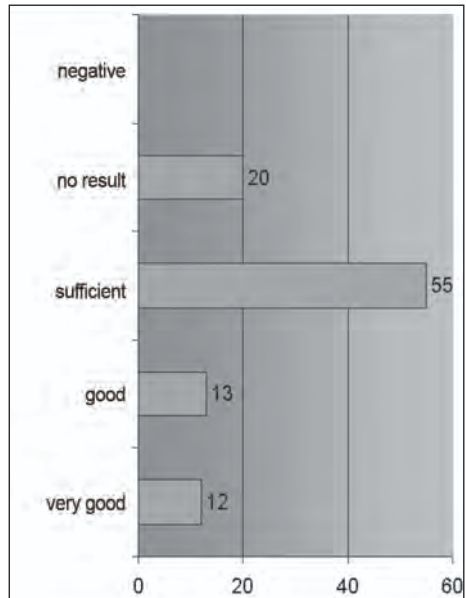


- ♦ Geriatric Adynamia 82% rated very good to satisfactory
- ♦ Sexual Insufficiency 80% rated very good to satisfactory

## Migraine

49 treating physicians

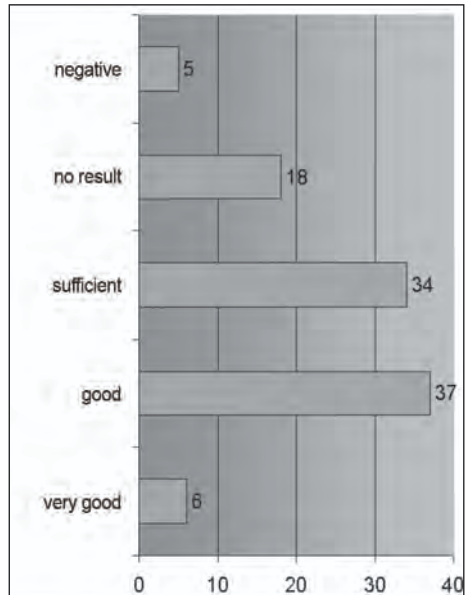
(Results in percent)



## Metabolic Insufficiency (Impairment of the metabolic system)

33 treating physicians

(Results in percent)

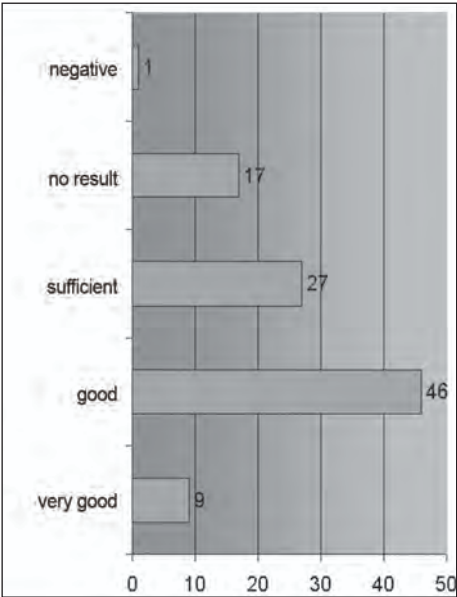


- ♦ ***Migraine 95% rated very good to satisfactory***
- ♦ ***Metabolic insufficiency 77% rated very good to satisfactory***

Chronic Sinusitis  
(Inflammation of the mucous  
membranes in the sinuses,  
e.g., chronic rhinitis)

36 treating physicians

(Results in percent)



**“Can we do that too?”**

This was my first question to my fellow inventors when I read the results contained in Manfred Fichtner’s statistics, which **also reported seemingly sensational success with various forms of rheumatism, delayed wound healing, bronchitis, chronic joint inflammation, and polyarthritits.**

**“If we were satisfied with that, the Quantronik devices would’ve been on the market long ago,”** was the response I received.

It became clear to me that the results could also be interpreted from the other side — and that meant: The cases in which only adequate, no, or even negative results had been achieved with magnetic field therapy amounted to **an average of 43% across all outcomes reported** in Manfred Fichtner’s statistics.

♦ ***Chronic Sinusitis 82% rated very good to satisfactory***



**What good is a 57% success rate for a therapy that is relatively new and enters the scene without a lobby, because it calls into question the position of powerful pharmaceutical companies, if 43% of the outcomes are unconvincing?**

**That may well be the case with hundreds of pharmaceutical drugs, some may even have worse success rates. But those drugs were already established on the market, available at every pharmacy, and listed in the reference books found on every doctor's desk as approved treatments.**

Magnetic field therapy, as I've already explained in an earlier chapter, had so far only received insurance recognition for a limited number of treatment options and was only known within the most progressive circles of physicians.

**"We need to move forward," I urged my fellow researchers. "We need to achieve at least a 75% average success rate for Quantronik and gain insurance approval for all proven indications!"**

**♦ 57% success rate of the old magnetic field therapy is not enough for us!**

**Chapter 16**

**THE STUDIES  
BY  
PROFESSOR PELKA**





The Study by Professor Pelka

Thanks to Ms. Bangeter of Mecos Inc., I received the following **randomized double-blind studies conducted using the REDUCTOR C device. Professor Dr. Rainer B. Pelka carried them out in 1988 on 82 patients between the ages of 16 and 66.** These individuals suffered from headaches of various origins, migraines, and weather sensitivity. The results were later confirmed by another 9-month clinical study by Wieczorek, conducted on 168 patients, using a different ELF (extremely low frequency) magnetic wave device.

HEADACHES

Results by Prof. Dr. R. B. Pelka, 1988

Magnetic field effect was observed

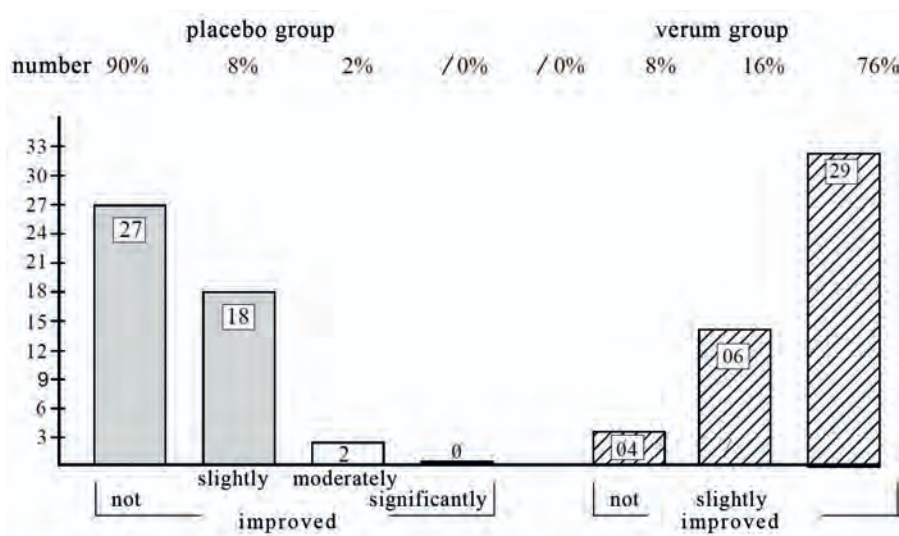


Figure: Development of insomnia in the study groups over the four-week study period for placebo ( □ ) and verum ( ▨ ): differences in favor of the verum group statistically highly significant (P < 0.0001).

♦ *Double-blind studies by Prof. Dr. R. B. Pelka, German Armed Forces Hospital, Munich*

A further study using a low-frequency device on 102 patients with what is referred to as “natural sleep” in 1990 also yielded highly significant results. These findings are consistent with the observations by Professor Dr. Gerald Fischer of the University of Graz, who also used a 4-Hz magnetic field device to treat insomnia.

### IMPROVEMENT OF INSOMNIA Results by Prof. Dr. R. B. Pelka, 1988

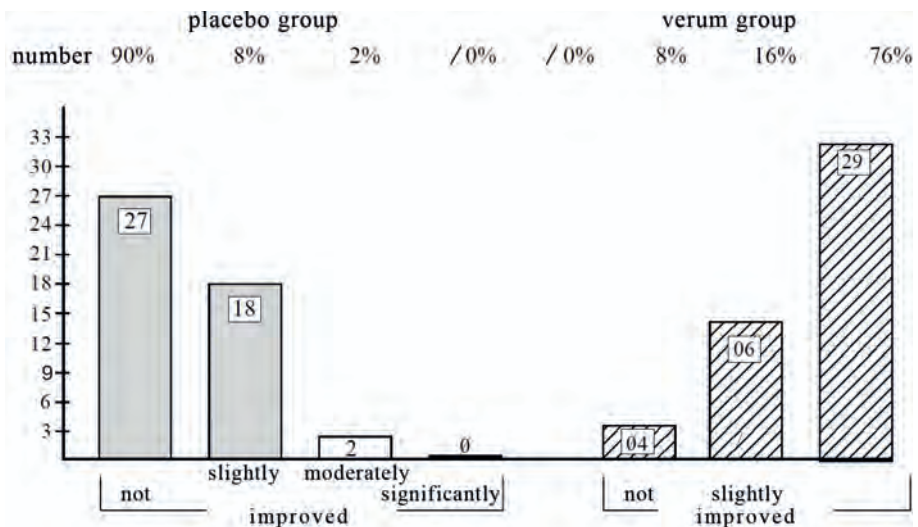




Figure: Development of insomnia in the study groups over the four-week study period for placebo (  ) and verum (  ): differences in favor of the verum group statistically highly significant ( $P < 0.0001$ ).

- ♦ **Prof. Dr. R. B. Pelka, 1988, Improvement of sleep disorders: Over 60% positive results, Double-blind study**

## Magnetic Fields to Enhance Potency?

Even in cases of erectile dysfunction with no identifiable organic causes, extremely low-frequency magnetic fields (the so-called “bio-potentiator”) were successfully used.

Professor Pelka and Dr. von Molière conducted another controlled double-blind study between 1987 and 1988 on 20 patients. **With a daily usage duration of 20 hours, the average erection duration in the Verum group (active device) increased to 30 minutes, while in the Placebo group (inactive device) it increased only to 6 minutes.** In both groups, impotence could not be attributed to any organic causes.

### ERECTION DURATION

after 4 weeks of application

Prof. Dr. R. Pelka / Dr. von Molière, 1987–1988

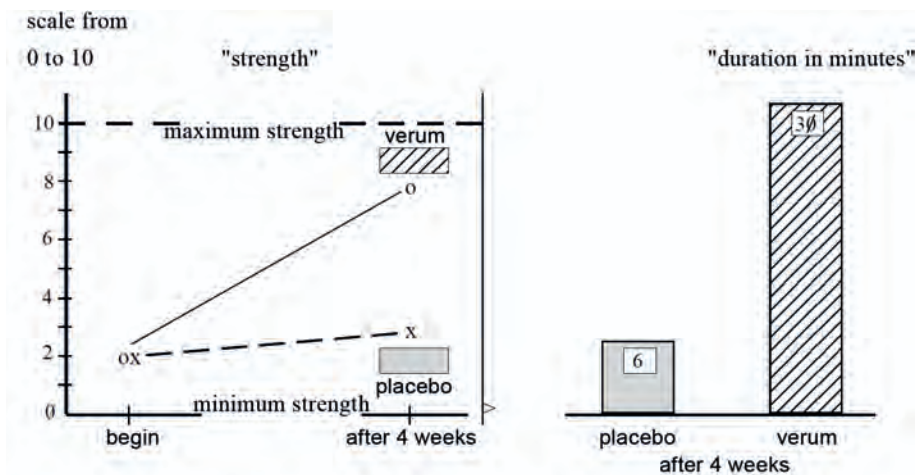




Figure: Improvement in average erection strength and duration following therapy in the placebo (  ) and verum (  ) groups. Differences are statistically highly significant in favor of the verum group. ( $P < 0.0001$ ).

♦ **80% improvement in erectile function**

**The increase in erection strength, overall sexual activity, and, not least, general well-being** was clearly greater in the Verum group by the end of the 4-week study, despite a similar starting point, than in the Placebo group.

While only 30% of the Placebo group reported a noticeable increase in sexual activity (a typical placebo effect), this figure was **80% in the Verum group**. These were truly impressive and irrefutable results. It is no surprise that magnetic field therapy has increasingly been adopted by major and renowned university hospitals, especially in the now “classic” indication area of orthopedics. Here, the Magnetodyn method, based on the magnetic field pioneers **Prof. Lechner and Dr. Krauß**, has gained wide acceptance.



## Chapter 17

# FROM THE SINE WAVE TO THE SAWTOOTH WAVE







## Chapter 17

## From the Sine Wave to the Sawtooth Wave

One of our researchers watched a film by Norddeutscher Rundfunk (NDR), in which **Dr. Günter Regling from the Orthopedics Department at Charité University Hospital in Berlin** was interviewed about the Magnetodyn method.

**“In what way can magnets accelerate or improve bone healing?” he was asked.**

He replied:

*“We are talking here about a very specific method, **a sinusoidally oscillating magnetic field** that has certain physical characteristics, which I won’t go into here — but which allow a very intense physical effect on tissue within a tolerable range, such that **this particular method can be considered plausible and scientifically comprehensible.**”*

This was certainly a statement backed by the scientific authority of one of Germany’s most respected hospitals. Conventional medicine was now slowly beginning to move forward in the field of magnetic field therapy.

But it was also clear to us that this was once again a “home field advantage” for magnetic field therapy: Orthopedic applications had already been known for a long time.

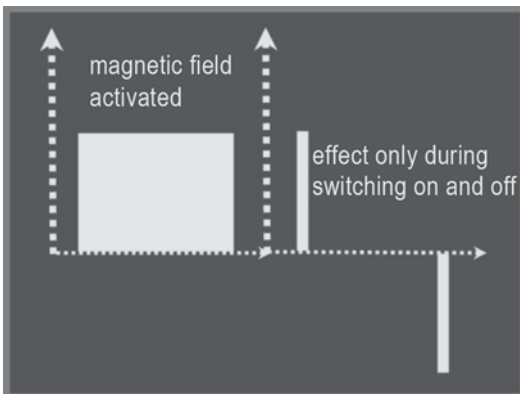
Our method had to show significant improvements in other indications to represent broad-based progress.

♦ ***Charité Hospital successfully uses sine wave oscillation***

Eventually, Professor König remarked that the sinusoidal waveforms used to generate magnetic fields — the same ones researchers at the University of Saarland had been studying for decades — might still not be the best possible waveform. He had already pointed this out in detail — supported by experiments on humans, animals, and plants — in his 1975 book *Invisible Environment*.

I do not want to go too deeply into this complex subject of physics here — a topic also thoroughly explained by Ulrich Warnke in the first edition of his book *The Human and the Third Force* — but will instead try to illustrate the basic concept, as it is elementary to understanding Quantronik. We were certain that the square wave pulses commonly used in cheap devices had to be ruled out from the start. These are relatively crude-looking current pulses in the form of rectangles, which are fed into the magnetic coil to generate a magnetic field of the same shape, which in turn is supposed to stimulate the ion flow in the body.

Thus, the path goes from electronics (current in the control unit) to electromagnetism (current through the coil generates a magnetic field) to ionics (ion flow in the body).



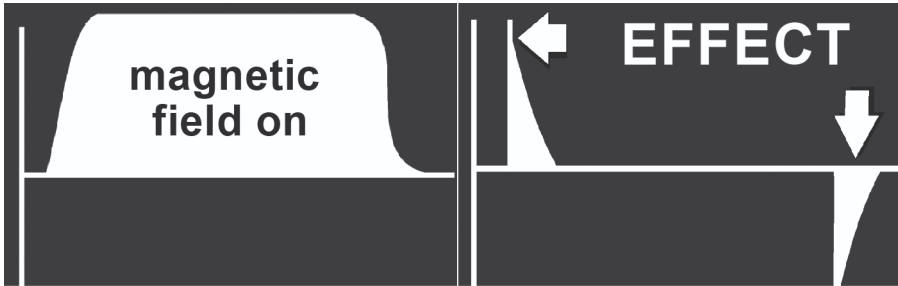
A typical square-wave pulse:  
On the left, the duration and intensity of the magnetic field is shown.

On the right, the simultaneously generated electric field in the body.

Only when the magnetic field is switched on or off does a brief electric impulse occur in the body — one with little potential for effect.

♦ ***Incorrect impulses only cause irritation in the body***

The rectangular electronic pulses only produce very short-lived ion flows in the body. These flows collapse almost immediately, and the ions simply retrace their path. The same applies to the commonly used modified square-wave pulses with a so-called “ramp.”



The square-wave shape with a “ramp” makes it easy to understand the connection between the pulse form of the magnetic field and the ion flow induced in the body: Only as long as the strength of the magnetic field changes, an electric field is generated in the body. If it remains constant, nothing happens — even if the magnetic field were extremely strong. This relationship can also be seen with the trapezoidal form of a magnetic pulse (lower figure).



In essence, the various versions of the square wave only result in a kind of “nervous trembling.” No therapeutically relevant stimulation occurs.

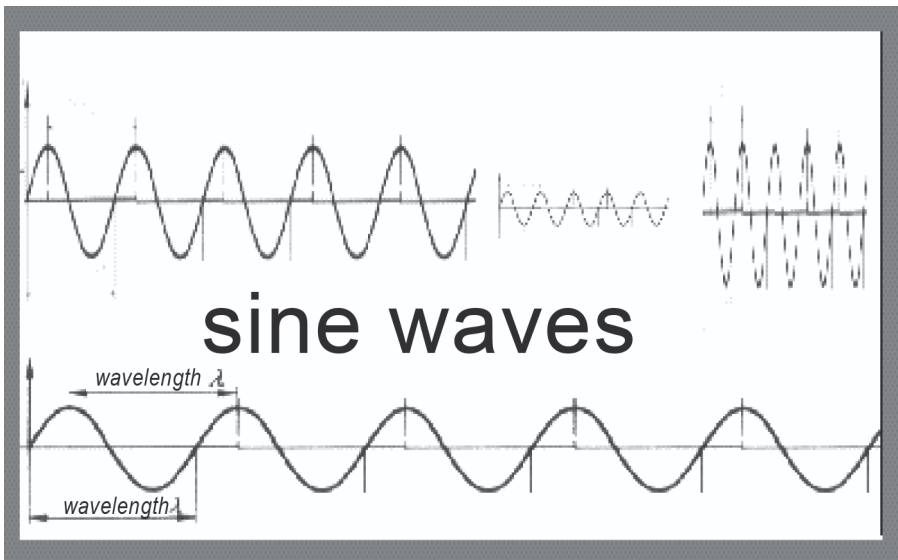
- ♦ ***The sine wave is good for treating bones.  
Thousands of cases prove this -  
but not every sine wave is a true sine wave!***

It's different with the sine impulse. Here, the initiating electronic current rises continuously to the peak of the sine curve and creates a longer-lasting ion flow in the body. As the sine curve then falls again, the counter-impulse follows.

Simply put:

**“The sine creates a sine in the body.”**

Sine waves are in constant change, i.e., they are always either rising or falling. With varying frequencies, the duration of each wave and the rise time also changes.



With sine waves, as Dr. Regling had stated, there truly was an intense physical effect on the tissue.

♦ *Square-wave pulses only cause nervous trembling*

**The professional-grade devices developed and used before Quantronik often utilized sinusoidal magnetic fields.**

However, for certain types of therapy, a sinusoidal course of the magnetic field turned out to be disadvantageous, for several reasons:

1. **At relatively low frequencies**, the amplitude of the induced voltage spike was too weak to produce sufficient stimulation, because the rate of change in the magnetic field was too slow — it took too long to reach its peak value. As a result, the **rate of change** of the induced voltage spike was also too low.
2. **At relatively high frequencies**, the current flow time was insufficient to produce a stimulus that could be recognized and processed by the body. **The required physiological stimulation threshold was not reached.**

Also, the equally strong counter-impulse that inevitably occurred due to the symmetry of the sine wave made us skeptical as to whether the sinus impulse was truly the optimum form.

Certainly, there had been major therapeutic successes with sine impulses. But in the end, the mechanism of action of the sinusoidal fields was merely a kind of back-and-forth shaking of ions, not a targeted and controlled movement.

It became clear to us that we needed a pulse shape that created a time-varying magnetic field, but without a symmetrical counter-impulse.

So we experimented for a while with sawtooth-shaped pulses and observed a distinct increase in effectiveness.

♦ ***Why Quantronik doesn't need the sine wave***

A waveform particularly similar to a sawtooth shape, in the form of a so-called exponential function, produced the best results.

What is essential for the therapeutic mechanism is that, unlike all other pulse forms commonly found on the market, the sawtooth waveform made it possible to move specific ions inside body cells to the desired extent.

ZEICHNUNGEN SEITE 4

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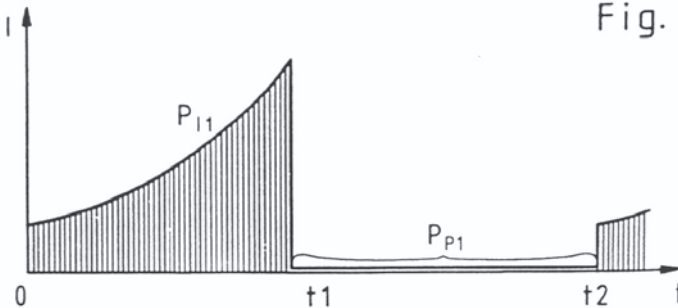
Int. Cl. 5:

A 61 N 2/04

Offenlegungstag:

14. Januar 1993

Fig. 8



The sawtooth form of the Quantronik pulse, shown here schematically in the version eventually submitted for patenting: Only with this signal shape, and at the corresponding amplitudes, does the desired "transport of ions" occur. This impulse form and its amplitude represent the quintessence of over 20 years of magnetic field research.

More on this in the chapter: "Physiology of Quantum Therapy."

- ♦ ***The Quantronik sawtooth:  
Protected worldwide by patents***

**Chapter 18**

**PHYSIOLOGY  
OF  
QUANTUM THERAPY**







## Chapter 18

**Physiology of Quantum Therapy**

With the sawtooth form of the impulse curve and the development of the coil shape, we had achieved the decisive breakthrough. After more than 3,000 years during which healers used magnets based on empirical knowledge, we were now able, by means of pulsed magnetic fields, to exert predictable control on the level of body ions, and thus at the atomic and molecular level.

How can we envision what is happening at the body level?

Generally speaking, as we know, for a low-frequency magnetic field, it makes no difference whether it propagates through empty space, a house wall, or a human being. When we generate a low-frequency pulsed magnetic field by means of a current-carrying coil, this field affects any matter in the vicinity of the coil. In this matter, a so-called electromotive force is generated. As the name implies, this electromotive force can move charged particles. It has a clearly defined direction — namely, perpendicular to the magnetic field lines.

The human body is a very well-suited object to harness the electromotive force for quantum therapy. It consists of more than 70% water, and in this water are many molecules and elements with excess charge, the so-called ions, which are the prerequisite for good electrical conductivity. These ions can be selectively moved by a magnetically induced electromotive force, and thus electric current flows.

- ♦ *Physiology of Quantum Therapy*
- ♦ *The Electromotive Force in the Human Body*

It delivers exactly what is needed — a full 2 milliseconds of electromotive force into the body, which is just enough to set the ions in motion and overcome their inertia.

### Overcoming Inertia

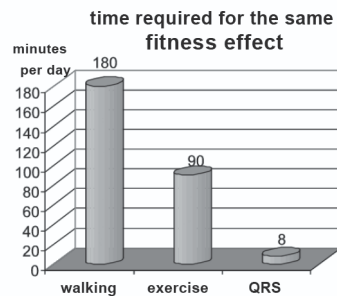
Let me put the effect of this process in very pointed terms:

**When we overcome the inertia of specific ions, we outsmart our own inertia!**

The movement of ions on the atomic and molecular level mimics our own physical movement, and thereby replaces what most of us are missing: Movement.

To put it plainly:

**Pulsed magnetic fields work like a fitness workout for the body. Quantronik instead of a jog through the woods.**



A hundred years ago, people walked at least 15 kilometers a day. That's what the human body is calibrated for — but where today can it still get energy derived from movement that is so urgently needed for metabolism? Exercise is one option — but not everyone can make use of it, especially when the body, as in the case of the elderly or chronically ill, is already weakened. Through the application of pulsed magnetic fields, the body can be revitalized — and all while saving time.

- ♦ ***Pulsed magnetic fields work like fitness training. Quantronik instead of a jog in the woods?***

## Fit to the Power of Four!

That might sound a bit exaggerated at first. Let this statement — which initially comes across as a bold thesis — sink in for a few minutes to fully grasp the enormous consequences it implies.

However, Quantronik is not a substitute for exercise.

Of course, this requires further explanation. But you should know one thing right away: When ions move, it's as if we ourselves are moving. Because during physical activity, the same process occurs.

In the meantime, allow me to give you a few basic facts about what happens when ions are set in motion:

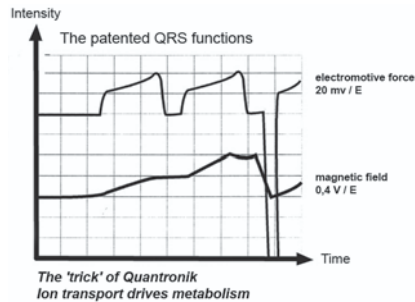
### **Ions drive metabolism, and therefore, our life.**

Let's take a closer look at the Quantronik pulse:

As you now know, the magnetic field generates an electromotive force. A special trick of the Quantronik pulse is that the magnetic field and the electromotive signal are “in phase,” meaning: While the magnetic field curve rises, the electromotive force also increases. We should recall that both forces act perpendicularly to each other. Dr. Warnke explained this aspect of the invention during a lecture on November 27, 1994, in Potsdam/Glindow, as follows:

*“This means: In the blood, I pull ions in one direction using this phase-based description... now I lower the magnetic field again, and suddenly I get a huge induction flank in the body — and in this rapid slope... I suddenly pull the H-ions out — no longer in-phase with the others — because H-ions are the easiest to extract from the electrolyte system.”*

- ♦ ***The „trick“ of Quantronik***
- ♦ ***Ion transport enables metabolism***



The electromotive force "in phase" with the magnetic field that generates it this represents another advantage of the Quantronik pulse form compared to other professional therapy devices currently on the market. What actually acts in the body is the upper curve, which is triggered (induced) by the lower curve. The two positive impulses, each lasting 2 milliseconds, act as ion collectors. The suddenly starting strong counter-impulse pulls H-ions out (see below), initiates "H-hopping," and drives them to the vascular membrane, where they exert their therapeutic effects.

The magnetic field, which penetrates the body evenly, induces a current of electrically charged particles in a defined direction — and it lasts long enough to set even more inert particles in motion. These now flow in an orderly fashion, side by side. Suddenly, this flow ends, and the particles remain where they are.

The counter-impulse is now comparatively short, but much stronger than the first impulse. The inert particles remain in place. It is the faster particles, especially the **hydrogen ions ( $H^+$ )**, that are moved. They quite literally "hop" through the cell (technical term: H-hopping) and are only slowed down at the cell membrane.

Now something happens that we might best imagine by thinking of descaling a coffee machine with formic or citric acid. In the fat and protein layers of the cell membrane, **calcium ions ( $Ca^{2+}$ )** are embedded. They are attached to two electrically negative binding sites.

♦ ...makes H-ions „hop“

### 1. Macrophages are activated

Macrophages are an important part of the immune system. They clean up cellular waste and, for example, devour bacteria.

(Greek: Macro = large, phagein = to eat)

**2. Enzymes are activated, stimulated, or inhibited.** As a result, metabolic processes are primarily accelerated.

### 3. NO gas (nitric oxide) is produced

It diffuses into the bloodstream and surrounding tissues. This gas, which now has its own classification in biology, was formerly known in medicine as the “endothelium-derived relaxing factor.”

It **dilates blood vessels** and thus represents an important therapeutic effect.

NO is also a key component of nitroglycerin, which is used as a first-aid medication for heart attacks. Furthermore,

NO gas as a vasodilator is an indispensable part of male erection.

### 4. Cell proliferation is stimulated

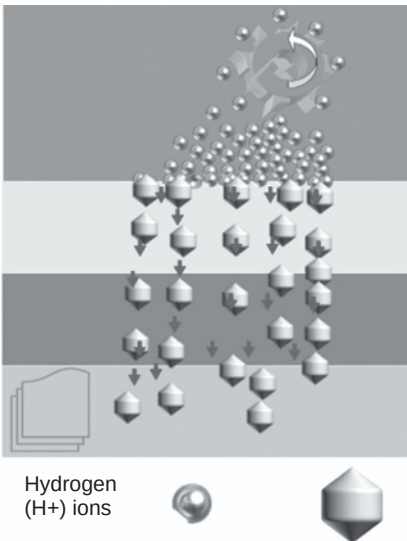
There have long been indications that the effects of magnetic fields preferentially target dividing cells. That may be one of the reasons why classical magnetic field therapy, before Quantronik, had its greatest successes in the field of regeneration, such as in orthopedics.

♦ ***Newly discovered vasodilator,  
immune stimulation, enzyme activation***

If the surrounding environment becomes more acidic — which occurs due to the accumulation of  $H^+$  ions — then these calcium ions can no longer remain in place, just like limescale in a coffee machine.

According to the laws of physics, two  $H^+$  ions together have a stronger attraction to the binding sites than a  $Ca^{2+}$  ion and first push it into the intercellular fluid, and then into the cells themselves.

### The Calcium Cascade



Example of the worldwide patented Quantronik ion shift:

Positive hydrogen ions (red) from the blood are pressed against the vessel wall (gray) and create an acidic environment, which drives the calcium ions from the wall into the intercellular fluid (blue).

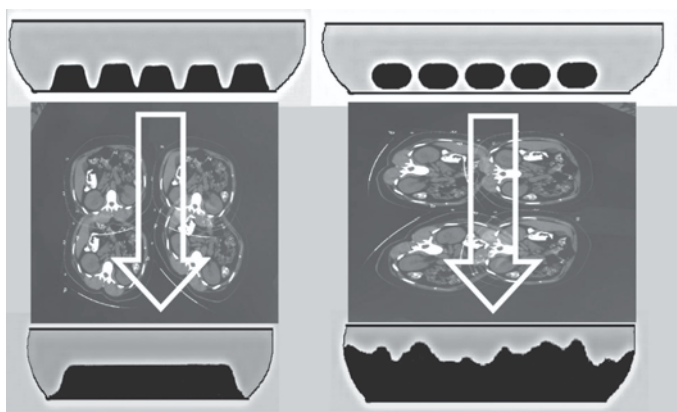
From there, the  $Ca^{2+}$  ions migrate into the cells (orange) and trigger the cascade of effects described below.

The  $Ca^{2+}$  ions that have migrated into the cell trigger effects that resemble a visit from a wealthy aunt. **The cell puts itself in order.** Depending on its prior state, the following processes are initiated — which we in Quantronik refer to as the Calcium Cascade, because they all involve the release and action of calcium.

- ♦ ***The Calcium Cascade***
- ♦ ***The cell puts itself in order***

However, since cancer cells also continuously reproduce, many people — including those who have dealt with topics such as magneto- and electrosmog — suspect a potential risk in the application of magnetic fields in therapy. But what really matters is: what kind of magnetic fields are being used. We will have to come back to this point more than once. First, however, let's consider an important **difference between a healthy cell and a cancer cell**, as described, for example, by **Dr. Otto Stemme** in his excellent book “**Physiology of Magnetic Field Treatment**” (see bibliography):

Difference between the proliferation of normal and cancer cells according to Dr. Otto Stemme. Left: Healthy cell reproduction. Right: Cancer cell proliferation



Healthy cells in a nutrient dish adapt to their surroundings and stop growing once they touch each other. **Cancer cells**, by contrast, do not adhere to the base of the dish and continue growing uncontrollably, as long as they receive nutrients — even when they touch each other. **They know no boundaries of growth because they have no other function than to grow.** It is therefore not surprising that every serious magnetic field therapist, equipment manu-

♦ ***Healthy and pathological cell proliferation according to Dr. Otto Stemme***



facturer, and of course also the manufacturer of the Quantronik devices recommends **using magnetic fields in cases of cancer only under medical supervision. The same caution applies when a child is developing in the womb**, and thus a very specific form of cell division is taking place. However, I want to emphasize that I am not aware of any clinical findings that would require such therapeutic restrictions. This is a precautionary measure solely for legal reasons.

## 5. Cells Differentiate

If cells only proliferate, this by no means implies regeneration. What matters is that the new cells also take over the functions specific to a given tissue — in other words, a bone cell must become a bone cell, and a liver cell must become a liver cell. According to our research, this effect is also part of the Calcium Cascade. Whether cells are primarily encouraged to proliferate or rather resume their specialized functions depends on how much calcium was already present in the cell before the inflow occurred.

## 6. Blood Pressure Sensors Regulate Blood Pressure

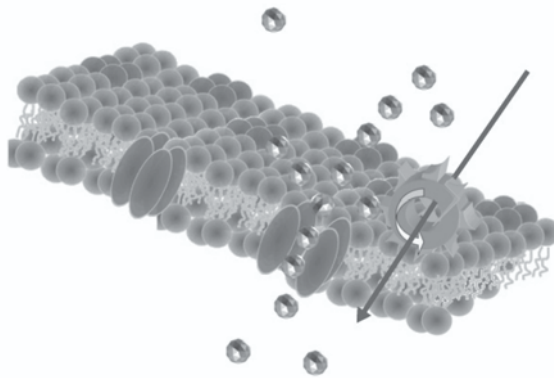
In the medulla oblongata, a part of the brainstem, there are oscillation regulators for blood pressure, which respond positively to the calcium effect of the magnetic field, increasing or decreasing blood pressure as needed.

## 7. Sensitivity to adrenaline decreases, and so does the response to Cortisol

## 8. Responsiveness to Insulin is Activated

## 9. Membrane gates open and enhance ion exchange (see illustration on the next page)

- ♦ ***The Calcium Cascade activates insulin responsiveness, enhances ion exchange, and reduces sensitivity to adrenaline***



The patented ion transport through the cell membrane. Due to the effect of the Quantronik signal, the ion gates open. The membrane resistance is overcome.

## **10. The sensitivity of free nerve endings increases**

## **11. Fatty acid metabolism is normalized**

The effects of the Calcium Cascade are by no means the only therapeutic mechanisms of Quantronik. However, they do, for the first time, provide a scientifically understandable explanatory model for the success of classical magnetic field therapy previously described elsewhere in this book.

The realization that the Calcium Cascade is one of the fundamental effects of certain pulsed magnetic fields formed the basis for the continuous refinement of the magnetic coil's signal — until the Quantronik impulse was finally discovered.

Below is a summary of additional well-known and long-established effects of magnetic fields:

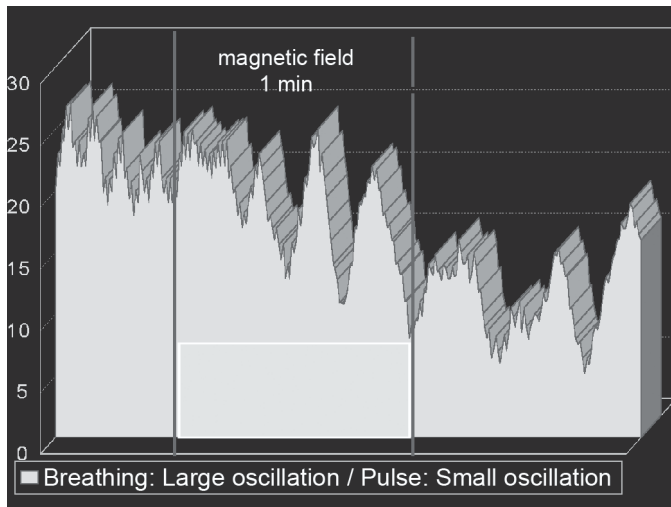
♦ ***Calcium Cascade and Immediate Indicators***

### Immediate Indicators of the Effect of Quantum-Therapeutic Magnetic Fields

See diagram on the previous page

- A: Cardiac Effect  
The heartbeat calms, and the frequency decreases.
- B: Blood Pressure Effect  
Blood pressure decreases.
- C: Blood Flow Velocity  
The blood flows more quickly.
- D: Blood Viscosity  
The blood's viscosity resistance decreases.
- E: Respiratory Volume  
Breathing depth increases immediately.

In another presentation based on measurements at the University of Munich, we can see how respiratory volume and pulse rate are interrelated: The depth of breathing increases immediately — and this effect is sustained.



♦ ***Immediate indicators for the effects of pulsed magnetic fields***

## F: Increase in Circulation / Heat Radiation

As described in detail earlier in this book, the body's heat radiation increases noticeably under the influence of a magnetic field. This is not a form of energy transfer, such as with a heating pad or microwave, but rather a true circulatory reaction of the body. This is evident from the fact that the magnet coils on the horse's body (black square) remain black and thus cold, while the rest of the body warms up considerably. **This horse experiment documented — for the first time worldwide — that the magnetic field effect is not a direct physical effect, but a stimulation of the body's own reactions.**

**In the cybernetic sense, this is a genuine transmission of control information to the body, which seems to respond accordingly.**

Like the previously described double-blind studies, the horse experiment also showed that the magnetic field effect cannot be attributed to a placebo effect.

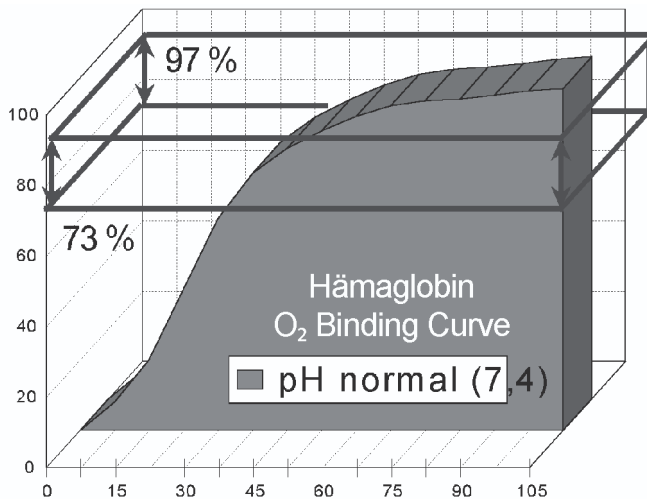
**In animals, placebo effects are generally considered impossible.**



- ♦ *Immediate indicator: heat response, improved circulation*
- ♦ *Example using a horse*

Out of 6,000 measurements, it became evident that among all influencing factors, the so-called acidosis status (acid level) of the blood plays a decisive role. Roughly speaking: The magnetic field is more effective when the blood is relatively acidic. Meanwhile, after more than 3 million additional applications, we now know that in acidic blood, a lower amplitude must be selected to achieve the desired effect. But why does the body absorb more oxygen when exposed to a suitable magnetic field?

According to Dr. Otto Stemme (see bibliography), the **normal pH value of human blood** is 7.4 at a body temperature of 37°C (98.6°F). (Note: The lower the pH value, the higher the acidity — the more acidic the blood.) Normally, 97% of the hemoglobin in the blood is saturated with oxygen in the lungs. This oxygen is released in the capillaries — the smallest blood vessels — to the tissues, reaching up to about 73% saturation at rest. **This means that only 24% of the oxygen bound in the blood is normally utilized.**

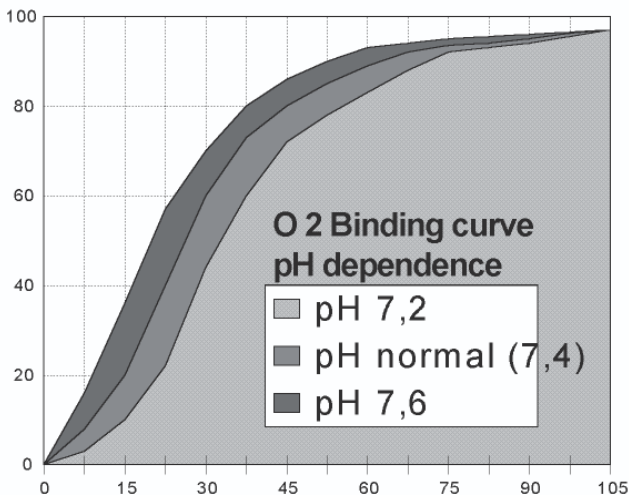


♦ ***Oxygen partial pressure  
Measured in 6,000 students***

If the acid status of the blood changes — either increasing or decreasing — the release of oxygen also changes. Stemme writes the following on page 108 of his previously mentioned book “Physiology of Magnetic Field Treatment”:

“Apparently, hemoglobin (i.e., the blood pigment responsible for oxygen transport, note by the author) interprets the increased concentration of  $H^+$  ions (acidity) as an indication of increased oxygen demand, and shifts its oxygen dissociation curve to the right...

*The dependency of the oxygen binding curve on pH value is called the Bohr effect.”*

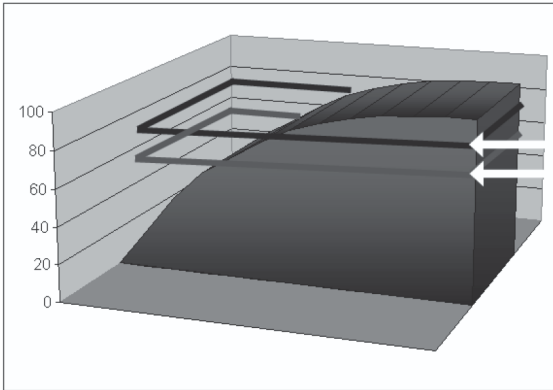


Oxygen binding curves at different blood pH levels according to Dr. O. Stemme.

#### ♦ **The Bohr Effect**

Dr. Stemme was now able to demonstrate, through physico-theoretical calculations, **that the oxygen extraction rate of the blood under the influence of a magnetic field can be increased to as much as 56%.**

This means that the oxygen supply to the capillaries more than doubles — specifically, by 133%!



Oxygen extraction without magnetic field: 24%

Oxygen extraction with magnetic field: 56%

Naturally, this is not the place to walk through step by step how **Dr. Otto Stemme**, in his globally unique (and outstanding) theoretical work, derived this impressive value through an almost infinite number of calculations. But for those who are not deterred by mathematical and physical equations or chemical formulas, his book is highly recommended for study. It is astonishing **that, once again, a German author has dared to take this major theoretical leap**, while American research — despite its wider scope and much greater funding — has not yet managed such a breakthrough.

**In the 6,000 measurements conducted at the University of Saarbrücken, an increase in the oxygen saturation increased from 70% to 80% was recorded under the influence of a Quantronik field. Compared to the 133% increase theoretically predicted by Dr. Stemme, this may initially**

♦ ***Dr. Stemme calculates the oxygen extraction rate under magnetic field influence to increase from 24% to 56%.***

**seem modest. However, in rare cases, increases of up to 900% have been measured using a Quantronik impulse magnetic field.**

These, however, are exceptional cases, which may be due to specific individual health conditions.

**133% more oxygen – theoretically**

**80% more oxygen – practically**

What causes the difference?

I do not believe that Dr. Stemme miscalculated. His argumentation is entirely sound. However, what abstract theory cannot take into account in its calculations are fundamental real-world circumstances, which can affect the theoretical baseline.

The 6,000 measurements of normal oxygen partial pressure were conducted on students — that is, on young individuals, who can generally be considered relatively healthy, and who were studying subjects like biology, chemistry, or medicine — people from whom we may assume they behave no less health-consciously than the average citizen.

Dr. Warnke summarized this very alarming result in his lecture on November 27, 1994, in Potsdam/Glindow with the words:

*“This is an oxygen saturation measurement, and it typically reads around 60 mmHg (note by the author). That’s relatively low, but we’ve already conducted over 6,000 measurements, because this is part of an experiment in the biomedical practicum I teach; and in that context, we measure the oxygen saturation in all students.”*

♦ ***Oxygen supply nearly doubled!***



*And we were very shocked at how low it has now dropped. The expected value for a 75-year-old should actually be 70 mmHg. But the students we measure — they're at 60, if not lower."*

*"I know what the cause is. I work in environmental medicine, preventive biology..." "We are taking in too much CO (carbon monoxide, e.g., from car exhausts, note by the author), and that blocks the oxygen transport by hemoglobin.*

*We have too many nitrogen oxides in the air. That causes the alveolar walls (alveoli = lung sacs, note by the author) to proliferate (= multiply, overgrow), meaning they develop a mild inflammatory reaction. This reduces the diffusion coefficient.*

*We are too stressed — our blood vessels are severely constricted. All of this is reflected in the oxygen partial pressure.*

*And I could go on: We eat too many nitrate-rich vegetables, over-fertilized produce; together with the bacteria in our mouths and stomach, nitrite is formed, and nitrite produces methemoglobin, which can no longer bind oxygen. Even our drinking water is contaminated with nitrate."*

So far, Dr. Warnke's statements in Potsdam.

**CO gas has a 300 times stronger tendency to bind to hemoglobin, the oxygen transporter in the blood, than oxygen from the air.**

- ♦ **Maximum value observed in practice:  
900% increase in oxygen partial pressure with Quantronik**

That wouldn't be so bad if this binding lasted for only one circulatory cycle. **But if the oxygen pressure is not drastically increased, the blood cell remains bound to CO for the rest of its lifespan — that is, for 50 to 120 days — and once it has been affected by this gas, it can no longer contribute to the body's oxygen supply for the remainder of its life.**

What does that mean in practical terms?

If you walk daily through a CO-contaminated area, for example through a car underpass where exhaust gases accumulate, you inhale CO, which binds each time to a portion of your available hemoglobin volume. **Oxygen doesn't get a chance!**

Result: Your hemoglobin volume available for oxygen transport is reduced by the “functional corpses” being carried around in the bloodstream — blood cells vampirized by carbon monoxide! These no longer contribute to cellular supply but drift through the bloodstream until their eventual cell death.

Unlike literary vampires, they don't threaten us only at night, but also during the day. **They make us tired for life!**

### Vampirized blood cells

The CO-bound hemoglobin molecules naturally alter the baseline values for theoretical calculations. You can no longer assume a total hemoglobin mass of about 800 grams in the average human body, but significantly less.

According to Dr. Stemme, **the normal hemoglobin quantity can transport about 1.12 liters of oxygen in the human body, of which normally 24%, that is, a good quarter of a liter, is utilized.**

- ♦ *The oxygen partial pressure in 75-year-olds in 1950 was about 70 mmHg. Today, among our students, it is still around 60 mmHg, if not lower. Prematurely aged students?*

Depending on environmental pollution, a large portion of the hemoglobin, for example, may be vampirized by CO gas, reducing the amount of oxygen transported.

### **Consequence: CFS, PED**

CFS (Chronic Fatigue Syndrome) is by no means a trend disease of the lazy. It is a condition that is linked to a **pathological energy deficit (PED)** in the cells. This has several causes, including **oxygen deficiency**, which results from the vampirization of hemoglobin by nitrogen oxides.

Let us reconsider the difference between Dr. Stemme's theoretical calculations and Dr. Warnke's practical measurements:

### **Students with senile oxygen levels**

The youthful subjects had a baseline oxygen partial pressure of 60 mmHg, compared to a critical value of 70 mmHg, which is generally considered the lowest healthy value for a 70-year-old person (intervention point).

**The physiologically damaged students were already 14% below the critical oxygen supply value for seniors, which leads to a critical oxygen supply for the cells.** This could practically mean that, instead of the typically assumed approximately 800 grams of hemoglobin, only about 700 grams are available for oxygen transport. The remaining portion of the blood pigment would then be loaded elsewhere and would circulate without benefit to the organism. **Thus, the energy deficit for the cells is essentially pre-programmed.**

♦ *CO gas displaces oxygen in the blood,  
it has 300 times stronger binding force*

Improving the generally disturbed blood respiratory function through the application of an appropriate magnetic impulse and thereby preventing many diseases became one of the most important tasks of the Quantronik system.

**Young people with age-related cellular supply values are biological time bombs — an alarm signal that must not be overlooked, and one that provoked the development of the Quantronik therapy device.**

**“Oxygen is not everything in cellular supply,  
but without oxygen, everything is nothing.”**

The measurements of oxygen were often quite different for the reasons previously mentioned, and perhaps even due to other unknown factors. However, there was no doubt about the improvement in cellular oxygen supply, which was ultimately called the Oxygen-Magnetic Field Effect by Dr. Stemme in his book “Physiology of Magnetic Field Treatment” (p. 172 ff.): Dr. Stemme writes:

*“The cellular energy production essentially occurs through biological oxidation in the mitochondria, from glucose (carbohydrates), fatty acids (fats), and amino acids (proteins). It’s a process that, besides these fuels, requires oxygen and is determined and limited by **oxygen supply, provided there’s generally good fuel availability.**”*

♦ **Chronic Fatigue Syndrome**

*The energy supply to tissue and cells, in turn, is naturally decisive for all the processes occurring there that require energy. So, particularly: regenerative processes, strengthening the body's own defense mechanisms, mechanical performance, and heat generation...*

*Since blood circulation influences energy production in the cell through oxygen supply to tissue and cells, we can always expect therapeutic efficacy from magnetic fields when we anticipate or already know a therapeutic effect due to improved blood circulation for a particular illness. In such cases, we will increase circulation itself through magnetic field treatment.*

*From these perspectives, we can compile a therapeutic treatment plan for magnetic field therapy, which is still open for additions and extensions. Here are the key points:*

### ***Circulatory disorders***

*Peripheral circulation*

*Extremities*

### ***Migraines***

### ***Aging process***

*Local signs of aging*

### ***Skin aging***

*Reduced skin tension (turgor)*

### ***Skin impurities***

*Acne*

♦ ***Oxygen-Magnetic Field Effect  
versus Chronic Fatigue Syndrome***

**Wound healing***Connective tissue formation***Bone healing****Arthritis***Polyarthritis***Rheumatism****Osteoarthritis****Body's own defense****Cancer***Therapy**Prevention**Risk reduction after surgical tumor removal*

*It is clear that in some of the cases mentioned above, a more localized magnetic field application (e.g., for cosmetic skin treatments) is indicated, while in other cases, the treatment of a larger part of the body (e.g., strengthening the body's own defense) may be necessary.*

*The required treatment times will vary significantly, as we see when we compare, for example, the treatment of a migraine attack and the promotion of wound healing...*

*It is worth noting that, due to the common active ingredient O<sub>2</sub>, we can **observe alignment with the application areas of an O<sub>2</sub> full-body method**, the Oxygen multi-step therapy by **Manfred von Ardenne**... This is especially evident when we consider the interaction of the significantly improved O<sub>2</sub> ab-*

♦ **Oxygen supply: The gas lever of the body's motor**

*sorption in tissues, due to the Oxygen multi-step therapy, and the magnetic field that directly attacks the hemoglobin molecule, releasing O<sub>2</sub>.*

### **The Oxygen Effect in Cancer Therapy?**

Why does Dr. Stemme explicitly mention cancer therapy and prevention as indications for magnetic field treatment?

He develops a highly interesting theory on the origin of cancer in his book, which we will not elaborate on here. However, two key points from Dr. Stemme's argumentation are crucial for our context. On page 197, he writes:

*Cells can fundamentally obtain their energy from the energy carrier glucose in two ways:*

*Fermentation:*

*In this process, glucose is converted into lactic acid through a series of intermediate reactions. One molecule of glucose produces two molecules of lactic acid.*

*Respiration (oxidation):*

*The end products here are CO<sub>2</sub> and H<sub>2</sub>O. For every mole of glucose, 15 times more energy is produced compared to fermentation.*

*What is important for us and our cancer problem is this: Unlike healthy cells, cancer cells continuously ferment glucose into lactic acid, even in the presence of oxygen, allowing them to grow.*

♦ ***Indications Based on the Oxygen-Magnetic Field Effect***

This observation is crucial. **Unfortunately, it is by no means the case that with increased oxygen supply, a cluster of cancer cells, once formed, suddenly switches to respiratory oxidation and thus becomes normal again.**

It is not like a muscle, which can use both “modes” depending on the oxygen supply and switch between anaerobic and aerobic energy production.

Dr. Stemme’s line of thought therefore leads in a different direction. He argues that, with a cell division rate of at least 4 million cells per second, as occurs in an adult human, regular operational accidents occur, which lead to the formation of cancer cells.

**The decisive factor for Dr. Stemme, therefore, is not the prevention of the formation of cancer cells, but rather their successful disposal by the body’s immune and repair system.**

However, this natural anti-cancer function of the body is disturbed by the lack of oxygen. Stemme writes on pages 212-213:

*“We now also overlook the role of oxygen deficiency in the development of cancer:*

*Disruption of cell respiration, Genetic promotion of fermentation,  
Impairment of DNA repair due to energy shortage,  
Weakening of the body’s defense systems.”*

*Oxygen is therefore of decisive importance as a raw material and operational resource for the efficiency of the defense system.*

♦ ***Optimal results through  
Oxygen Multi-step Therapy and  
Oxygen-Magnetic Field Effect in Cancer Therapy***



Dr. Stemme recommends a comprehensive full hygiene approach: This means avoiding carcinogenic influences, such as the use of known carcinogenic substances in food and beverages, as well as contact with such substances. Avoiding unacceptably high radiation doses, regular medical examinations, and active preventive measures are also key components.

**For Dr. Stemme, active prevention looks like this:**

*First, the oxygen situation must be consistently improved through an active lifestyle that promotes O<sub>2</sub> supply to the tissues. This aligns with our understanding of the role of oxygen deficiency in cancer development.*

*Secondly, the idea of regularly eliminating micro-clusters of cancer cells by utilizing oxygen, as a resource for the body's defense system, must be realized. This has been suggested as part of a routine akin to brushing teeth. The purpose is to implement periodic oxygen washings of tissue to destroy any cancer cells or clusters that might have slipped through the body's immune system while still small.*

**Dr. Stemme's Cancer Cell Cleaning Process**

Dr. Stemme provides useful tips on pages 222-224 of his book, explaining how regular O<sub>2</sub> cancer cell cleansing can be supported through complementary measures.

***Lowering blood glucose levels is one such measure.***

***Simple low-carb or, better yet, carbohydrate-free diet, at least 24 hours before magnetic field application.***

♦ ***Oxygen deficiency = immune deficiency***

*Naturally, individual tolerance to such a diet should be considered, and a doctor's consultation is advised beforehand. The doctor may also lower glucose levels through insulin administration. By lowering glucose levels, the energy supply to any present cancer cells is intentionally diminished. This slows down their highly energy-consuming growth (division). Furthermore, we can expect that, in the absence of glucose, oxygen will be used to oxidize endogenous substrates. The cancer cells, weakened and damaged by this process, will be more easily destroyed by the body's own defense mechanisms.*

#### *Improvement of Circulatory Situation*

*Before and during the magnetic field application, the circulatory situation should be improved by physical activity, sauna, or massage. The improvement in circulation is beneficial because, as we recall: The magnetic field-induced O<sub>2</sub> effect involves an "O<sub>2</sub> milking" of hemoglobin. The effect is increased when more oxygen is supplied.*

#### *Supplementation*

*One of the most important supplements is certainly vitamin C. We also expect that vitamin C, as a strong antioxidant, will play a regulatory role against any oxidative oxygen species that may arise with O<sub>2</sub> treatments.*

*A beneficial supplement could also be red beet juice, taken at least 24 hours before the magnetic field treatment. It should be sugar-free juice so that the glucose diet prescription is not violated. There is red beet juice available in which the sugar has been lactic acid fermented which also results in a favorable taste.*

### **♦ *Magnetic Field Cancer Cell Cleaning***

*Red beets are attributed with a positive influence on oxidative cellular metabolism, and at least a growth-inhibiting effect on tumor cells. What is particularly noteworthy in this context is that red beets contain allantoin, which accelerates wound healing.*

*We should not leave out the fact that red wine is also believed to have a positive effect on cancer progression. However, this note should be taken with particular caution, especially since it likely refers to the regular consumption of large amounts.*

*Further:*

*Thymus extract-based medications are available in pharmacies. Considering the role of the thymus in the development of T lymphocytes, we can expect these preparations to strengthen the body's immune system. This process takes time, and 24 hours is certainly not enough — more likely at least a week prior to magnetic field treatment.*

**These are the recommendations by Dr. Stemme on how to support regular cancer cell cleaning under magnetic field treatment, with complementary measures.**

As far as I know, there are no clinical studies supporting these recommendations, but I see no reason to object to such a complementary diet alongside magnetic field therapy.

♦ ***Diet for Cancer Cell Cleaning***

## Chapter 19

# NATURE AS A MODEL FOR QUANTRONIK





## Chapter 19

**BIONICS and QUANTRONIKS**

The word bionics is composed of the two terms bio (**biology**) and techn**ics**. It refers to the scientific effort to explore nature for designs and methods, and then to incorporate these insights into technical innovations.

**Bionic designs represent a third and new form of human invention, a product of the 20th century.**

In antiquity and medieval scholasticism, there was only the **concept of the discoverer-inventor: “Everything has been here before”** was the underlying philosophy. One could not invent anything truly new, but only discover something that already existed. The fundamental ideas were always already there; they were not the product of human imagination.

**Christian philosophy** adopted this concept with the thought that God created the world in a single act of creation. This creation was complete in itself, and nothing new needed to be invented. One simply had to discover everything that existed.

With the discoveries of the early modern astronomers **Galileo and Kepler**, the decline of this worldview began. It became clearly apparent that natural laws determined the course of the planets, not the books of the Holy Scriptures. With natural laws, inventions had to be in alignment. Nothing more. And everything that functioned according to the natural laws was already realized in creation. Yet for something that flies through the atmosphere at supersonic speed, there is no precedent.

- ♦ ***Bionics and Quantroniks***
- ♦ ***The Concept of „Invention“ in History and Present – Galileo and Kepler***

The more one thought about speed, the more one encountered new abstraction levels of natural laws. Finally, it was physics that managed to unify the relationships of these different levels into a coherent theory — **the General Theory of Relativity**.

With this, the inventors were finally freed from the constraints of pre-existing concepts. It became possible to create things that were purely the product of human imagination, things to which neither God nor the old natural laws had any connection. They just had to fit into a system.

In this newly gained freedom, something astonishing happened: For example, when developing aerodynamically efficient bodies with ever finer methods, and defining geometries for airplane wings, the best and most powerful of these inventions provided models that the constructors recognized. Any child could see that while a Concorde flies faster than a crane, the flight pattern and the shape still showed strikingly similar structures

And lo and behold, it suddenly became apparent that birds exhibited structural features that had previously gone unnoticed, simply because there had not been the corresponding mathematical language to describe them.

**Nature suddenly revealed its tricks, offering a wealth of ideas for technical improvements. Bionics was born.**

Human creators discovered that the seemingly endless variety of creation was composed of an enormous number of well-designed constructions.

♦ *The Path from Bionics to Quantroniks*

One increasingly understood nature as a self-learning system, a continuous improvement process. Bionics is nothing more than industrial espionage in nature, and nature is the most successful company of all time. All the patents in the world would not be as valuable as the complete construction plan of a single mammalian species.

### **What does Quantroniks have to do with Bionics?**

Magnetic field therapy devices have been built for quite a while. The control processes of magnetic quanta, no matter how mysterious they may seem to a layperson, are well understood.

However, our goal was **to build a device that optimally utilizes the mechanisms of action presented in the last chapter.**

We already had a special impulse form, and from the Quantroniks research project, we knew enough about the impulse size, the so-called amplitude window?

So the vessel was available to send information into the body. But who did we want to inform, which part of the body did we want to give the energy preferentially: the bones, muscles, nerves, heart, lungs, or intestines?

- ♦ ***What does Quantroniks have to do with Bionics?***
- ♦ ***We are copying the most successful company of all time — nature!***



In principle, much is possible, because every cell, indeed every atom, vibrates with a specific resonant frequency. Why shouldn't each part of the body, each organ, be responsive to a specific carrier, for example, a magnetic field, if one were to send it into the body with a certain frequency?

Nature has already provided us with these frequencies. We cannot change them, only amplify or suppress them.

Somehow, this knowledge has always existed. Even the ancient **Pythagoreans** spoke of the fact that everything is vibration. Especially in music, the vibrational and resonance processes that affect the human body were first discovered and studied. **Jonathan Goldman**, in his book *Healing Sounds* (see the bibliography, pages 26 ff), has very clearly illustrated the relationship between resonance and body harmony:

“Resonance is the frequency at which an object naturally vibrates. Everything has a resonant frequency, whether we can hear it or not. From the orbits of the planets around the sun to the movement of electrons around the atomic nucleus, everything vibrates. According to this view of sound, every organ, every bone, and every tissue in your body has its **own mechanical resonant frequency**. Together, they create a total frequency, a harmony, which represents your personal vibration.”

Due to resonance, the vibrations of a vibrating body are transferred and cause another body to vibrate. This is the case, for example, when a singer breaks a glass with their voice. The voice then corresponds to the resonant frequency of the glass and sets it in motion. If the singer applies too much sound energy, the **glass** will break. There are many examples of resonance that we are familiar with.

♦ *The Body's Own Frequency*  
*The Secret of Resonance Frequency*

Perhaps you have seen movies in which a **bridge** is set into vibration by strong wind; the bridge begins to vibrate, then starts to sway, eventually breaking apart and falling into the water. Architects are aware of this phenomenon, which is why they prefer to build in a way that prevents the structure from being easily set to vibration by external forces, such as wind.

The law of resonance might also explain how Joshua was able to bring the **walls of Jericho** down, as reported in the Old Testament. Joshua and his men walked around the walls of Jericho seven times to the sound of trumpets. Then they stopped, the people raised a war cry, and the walls collapsed. Did Joshua know how to use resonance to bring down the city's walls?

The **glass** that shatters, the bridge that collapses, and the walls that fall in are examples of the destructive use of resonance. But **just as sound can be used for destruction, it can also be used for healing and transformation.**

Just as you can move an object into its natural motion through resonance, you can restore the natural resonant frequencies of an object that is out of balance or harmony.

When an organ or body part no longer vibrates at the right frequency, we call it “disease”. Let’s imagine the human body as an excellent orchestra playing a beautiful symphony. **When we are healthy, the entire orchestra is in harmony. But when we become ill, it’s as though a musician — the second violin, for example — has lost their sheet music and starts playing in the wrong key and rhythm.**

- ♦ *Nature has given us the frequencies — for the past 2 million years.*
- ♦ *We cannot change them, but we can replicate them.*

At first, this affects the other string players, and ultimately this violinist is the reason the whole orchestra sounds off.

**Conventional allopathic medicine** tackles the described problem with various methods. One solution is to dose the violinist — sometimes to death — with medication in the hope that he'll stop playing. Another commonly used method is to cut him out.

But what if you could simply return the sheet music to this suffering musician, and the whole orchestra would return to normal?

In other words: what if you could send the correct resonance frequency into the disharmonically vibrating organ?

*When an organ or area of the body is healthy, it produces its own specific resonance frequency, which is in harmony with the rest of the body. In the case of illness, a different sound pattern is generated in the affected part of the body, one that is no longer harmonious. If you then send tones into the diseased area, you can restore the correct harmonic pattern and induce healing. According to the principle of resonance, sound can be used to return the body's disharmonious frequencies to their normal, healing vibrational state.*

That is the introduction by **Jonathan Goldman** to the resonance phenomenon.

Musicians like Jonathan Goldman or the well-known German author **Joachim-Ernst Berendt** have collected impressive examples of **how music alone can have effects on the body that may indeed be called healing effects.**

♦ *A wrong note disrupts the entire orchestra.*

Conversely, as Berendt reports in his book *The Third Ear* (see bibliography), **cell biologist David Deamer** of the University of California in Los Angeles has **translated DNA sequences — the genetic alphabet of humanity — into music; others have converted solar wind into sound, thereby creating music “that the sun plays on the Earth’s magnetic field”** (see Berendt, pp. 226f).

Undoubtedly, remarkable works and theories have emerged in this way. Nevertheless, these more or less esoteric methods cannot be understood as bionics in the strict sense. **Here, nature is being observed, yes, but there is a lack of systematic analysis and technical reconstruction. It’s merely an analogy in the sense of the late medieval scholasticism of Thomas Aquinas, but it does not offer anything new from a technical point of view!**

The difference from bionics is as follows: analogy does not understand the details and does not master the various parts of the design plan.

Take the Concorde, for instance: analogous engineering would mean trying to build a crane bird in hopes that your artificial crane will fly!

Bionic engineering, on the other hand, means: look at what you can learn from a crane to build a technical giant transport crane.

“I absolutely do not intend to belittle the path of practitioners, seekers, meditators — in short, the path of esotericism — in any way. On the contrary: this path may very well be the right one for an individual’s personal fulfillment in life. I do not at all doubt that, for instance, through the intensive practice of a particular vocal and breathing technique, as advocated by Goldman, it may indeed be possible to increase the partial pressure of oxygen, lower blood pressure, or stimulate certain hormones and enzymes.”

♦ **Prof. David Deamer,**  
**University of California, Los Angeles:**  
***Bionics – a revolution in engineering***

It is simply very difficult and time-consuming. And likely not possible for just anyone.

If we consider the **6,000 measurements** that showed an excessively low oxygen partial pressure as a starting point — should we seriously suggest that these students first spend years learning overtone singing if we have a way to help them more quickly?

**Or take older people, those already suffering from serious illnesses, bedridden and waiting for wound healing, whose bones no longer want to mend; people with rheumatism, allergies, insomnia, impotence, migraines, or high blood pressure...**

The fact is quite clear: **we can learn more about the vibrations and resonances that are important to a person from a single MRI scan than from all the traditional knowledge handed down by esotericism**

With the development of Quantroniks, we aimed to make this knowledge usable.

My initial goal was **to develop a compact home therapy device for general use in the field of prevention.** Given the sluggishness of the healthcare system, this seemed to me the only sensible path — especially since magnetic field therapy has so far shown no side effects that would rule out such an approach.

- ♦ *Priority on prevention*
- ♦ *Amplifying the body's own vibrations*

If you don't have the backing of broad sections of the population who have already had positive experiences with a new technology, you'll get stuck in the long march through the institutions. Legally, of course, it is strictly prohibited to sell such a private device as a medical treatment or to advertise it as such. It can only be marketed as a preventive or health-promoting device. **But no one can prevent buyers of the household device from, in case of illness, asking their doctor about a medical or clinical Quantronik device, which we were simultaneously developing.**

This device was intended to include everything **that doctors and clinics would need — namely measuring and documentation instruments and an expanded control system. This would allow doctors to respond more precisely and individually to specific cases and to monitor the healing progress.**

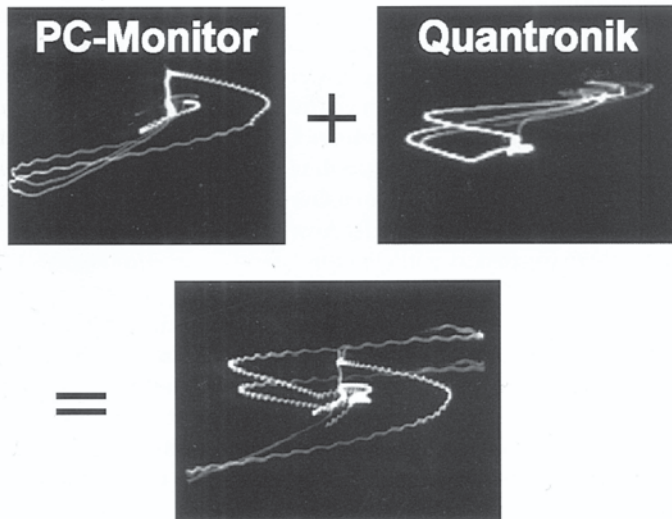
At the mention of a home device, a word of caution from **Prof. Dr. König** was certainly warranted. Environmental conditions in the home are not nearly as easy to standardize as those in a doctor's office or hospital setting. Although we had, **through an ingenious coil design, prevented the Quantronik magnetic field from interfering with itself — a common flaw in many devices on the market — external interference from the user's environment could not initially be accounted for.**

An electric alarm clock by the bedside — or even a neighbor's TV running behind a concrete wall — can disrupt any nearby magnetic field to the extent that undesirable or even harmful new waves or fields may result. And that's not even mentioning high-voltage power lines, which cause **electromagnetic smog** in residential areas.

♦ ***Highest standards for a home device,  
as it must be safe in the hands of laypeople.***

**I can only once again urgently warn against cheap devices that lack the necessary interference suppression mechanisms.** Let me refer again to the books by Professor König, which describe in detail how this should be done — and also how it does not work. As far as I am aware, apart from the Quantronik devices, there is no magnetic field therapy device on the market that meets these criteria.

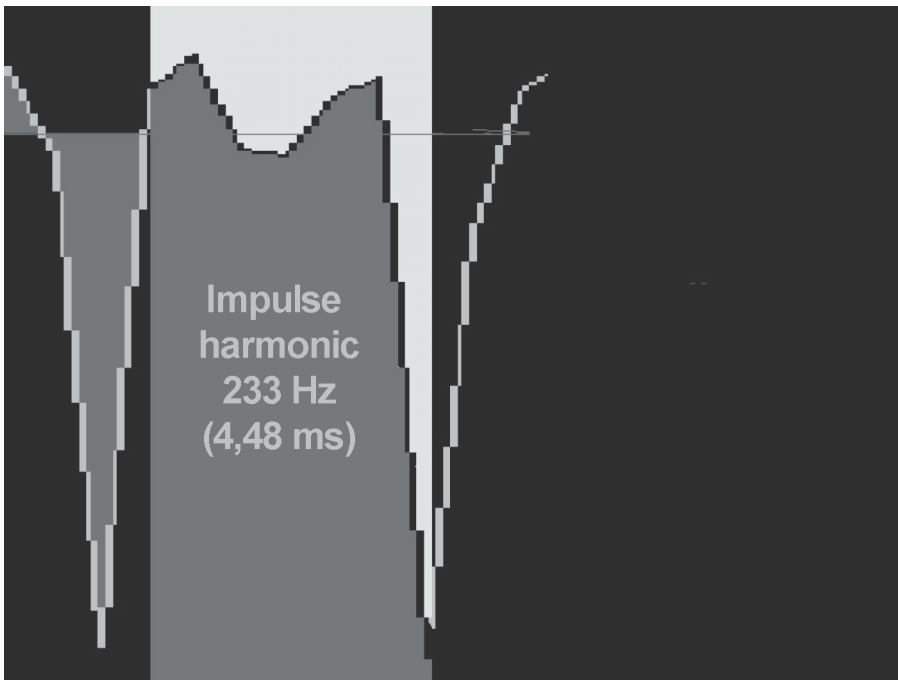
The task, however, was relatively easy to solve: We embedded a 23 Hz frequency into the magnetic pulse package. This frequency creates what is known as a “beat frequency” with the wandering electromagnetic smog of our power grid, and during the period of application, it neutralizes the disruptive effects of the omnipresent 50 Hz frequency. The illustration shows, as an example, how the 50 Hz smog from a PC monitor is neutralized.



- ♦ *How does Quantroniks eliminate electrical and magnetic smog during use of the device?*

Within our circle of the three inventors, there was no debate whatsoever: **such an interference suppression function for environmental electromagnetic smog had to be built into every Quantronik device — both the home unit and the clinical/physician model.**

The core component of the Quantronik pulse package is a coupling of the 23 Hz interference-suppression frequency with a 200 Hz signal, resulting in a 223 Hz signal and harmonics up to 10 kHz.

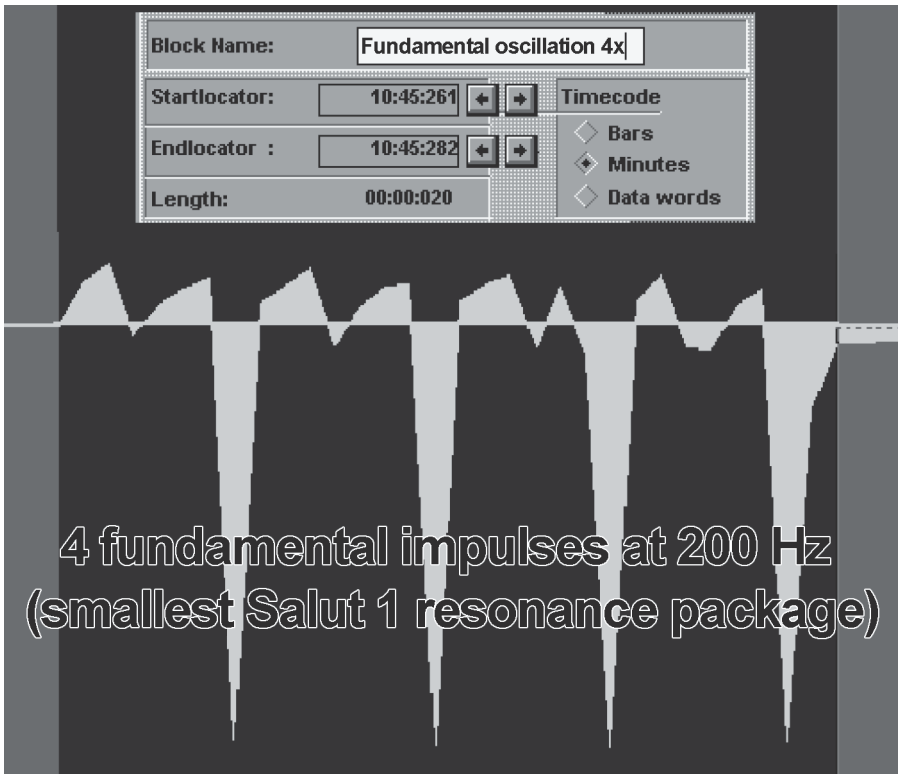


What is shown here is not the magnetic field itself, but rather the induction measured in a test coil approximately 40 cm in diameter (about the size of a human chest). One can immediately see the distinct induction slope, which serves to trigger the calcium cascade.

♦ ***Components of Quantronik ion control:  
Frequencies from 0.3 Hz to 10 kHz***



This basic pulse is in turn repeated at a 200 Hz rhythm, which primarily targets blood vessels of certain sizes to ensure improved oxygen supply to the cells.



The 200 Hz corresponds to their mechanical natural resonance — meaning that the effect of the Quantronik field amplifies the vessels' own natural oscillation.

- ♦ *200 Hz corresponds to the mechanical natural resonance of blood vessels.*
- ♦ *The „blood frequency“*

At this frequency, the impulses encounter the least natural resistance. Just as the string of a violin resonates most purely and lastingly at a specific tone — such as 440 Hz, the standard concert pitch A — these blood vessels resonate best at 200 Hz. They naturally “enjoy” vibrating at this rhythm, and in doing so, they move the blood inside them forward. **The blood cells are shaken apart, like the feathers in a fluffed-up duvet; they take on more mobile, flexible forms.**

The ion current generated by the magnetic field in the body acts like the violin bow drawn across a string. Even after the bow is removed, the string still resonates in the tone it was tuned to.

**You may have wondered why a string orchestra sounds so incomparably more beautiful than a single violin, even when they are all playing the same note. The sound of the orchestra is not just louder, but entirely different — smoother and more sustained. The same happens with Quantroniks through its bundle of frequencies.**

The reason for this again lies in the phenomenon of resonance. The air and surrounding space themselves become the invisible bow connecting the individual instruments. The vibrations continue even when all the musicians lift their bows from the strings.

In much the same way that a conductor ensures all instruments in a string section move their bows in parallel, in unison — up-bow and down-bow — **the coil mat of the first Quantronik device, “Salut”, ensures that the magnetic field sweeps through the body coherently and as uniformly as possible.**

- ♦ *The blood cells are shaken apart*
- ♦ *The capillary concert*

Let's stay with the image of the string orchestra a little longer.

Why does the same note sound different when played on a violin compared to a sine wave generator? It may be the same reason why the sawtooth wave is more suitable for magnetic field therapy than the sine waves that have been used until now.

Watch a violinist or cellist before they start playing: they apply a resin called colophony to the fine horsehair of the bow — without it, the bow would hardly be able to make the string vibrate. This sticky resin is essentially a very fine abrasive coating. It's not the bow itself, but tiny particles of resin that excite the string during playing, like an ultra-fine saw blade. That's also why, in the past — when gut strings were used instead of steel — it was common for strings to snap during performances. Over time, the string would be quite literally “sawed through”.

Excessive pressure or forceful bow strokes could also cause the string to snap. Translated into the language of Quantroniks, this would mean that the “amplitude window” was incorrectly chosen: Magnetic fields that are too strong or too weak do not induce resonance. The magnetic energy either acts where it shouldn't, or not at all, because the cell membrane is no longer properly polarized and thus fails to enter micro-vibration.

♦ ***Only the combination of the pulse packages and the 200 Hz resonance with the biologically correct amplitude window creates the circulatory symphony.***

**Chapter 20**

**CELL MEDITATIONS  
OR  
FREQUENCIES  
AGAINST STRESS**





## Chapter 20

## Cell Meditations or Frequencies Against Stress

The activation of blood vessels through a magnetic field resonating at 200 Hz — their natural frequency — is the actual “melody” of Quantroniks. In other words, it’s the sequence of notes, the pattern the body remembers and “hums along” with.

Also important are specific **pauses between the impulse packages so that the body doesn’t become accustomed to a constant, repetitive stimulus and cease responding.**

The human **brain** is a far more complex organ than, for example, a capillary in the tip of the toe. Its various regions have different natural resonances, and sometimes one region sets the rhythm, and sometimes another. The more the conscious part of the brain is activated, the faster it appears to vibrate — or, more precisely, the part that processes perceptions.

The best-known phenomenon in this context was discovered by the German physician Hans Berger, the inventor of **electroencephalography**, or EEG — the science of measuring brain currents. When we attach sensors to measure the brain’s electrical activity, we get faster oscillations when the test subject is awake and has their eyes open. These **oscillations range — depending on sensory input — from approximately 13 Hz to 27 Hz, and sometimes even higher. This is commonly referred to as the beta range of brainwaves, or colloquially, the waking consciousness.**

A state of relaxation, meaning reduced brain activity, begins as soon as one simply closes the eyes.

- ♦ *Cell meditations or frequencies against stress*
- ♦ *Impulses for the brain from 13 Hz to 27 Hz*

Anyone who owns a computer and works with color graphics knows how much processing power and memory graphic information requires. When visual input is removed, the brain is less burdened, and the frequency of brain-waves decreases overall.

Do you also enjoy watching old black-and-white movies to relax? No wonder — your brain only needs to distinguish between light and dark, not color, so it relaxes. When visual stimulation is absent, we speak of the so-called **alpha rhythm, or resting consciousness, in which dominant frequencies between 8 and 12 Hz can be measured.**

With training or innate ability, many people manage to produce alpha waves even with their eyes open. They appear calm and composed to others. Sometimes this can also be achieved simply by reducing the sharpness of your focus. This decreases the brain's need to differentiate visual input, lowering the brainwave frequency into the range of resting consciousness — though at the cost of greatly reduced visual acuity.

As resting consciousness gradually deepens, even auditory stimuli fade, reducing to mere linguistic structures.

Anyone who has ever become aware of the difference between an old tape recording and a modern CD understands just how much data must be processed even in the auditory domain.

The main memory of a good PC is just enough to capture a 30-second commercial in audio quality that sounds realistic to us. And when it comes to the length of a Beethoven symphony, most standard hard drives are hopelessly overwhelmed.

- ♦ *Fast and slow brain cells*
- ♦ *The alpha rhythm or resting consciousness*
- ♦ *Frequencies from 8 Hz to 12 Hz*

**When auditory demands on our brain are also removed, the frequency of brainwaves drops into the so-called theta range, which lies between 4 and 7 Hz.** While you can simply close your eyes, it's not so easy with the ears. The sense of hearing cannot just be "shut off" — instead, it is gradually faded out through a process that has not yet been fully understood. It appears that the phase of external perception is followed by a phase of internal perception, which first reveals an inner dialogue in linguistic form, and then gradually slips into a "dream world" of inner images. The process of waking up from this state into the alpha state seems to follow a symmetrical path.

**The theta rhythm has been measured in meditating monks, who, at first glance, could easily be considered fully awake. While average people in the theta state are already in light sleep or the dreaming phase, these monks remained creative and alert.** Hundreds of books have been written on this subject, and many methods have been tried to artificially induce this creative waking-sleep state, **in an attempt to harness the world of day-dreams, which virtually everyone has experienced at some point.**

There have indeed been successes — especially in the upper and middle theta range, corresponding to light sleep. These were primarily achieved using so-called "**mind machines**" — optical-acoustic devices that deliver simultaneous stimuli to the eyes and ears, making use of the fact that the human brain likes to follow such rhythmic stimuli, even as they slow down. However, there are two limits: First, a fatigue threshold, beyond which the brain no longer wants to follow the stimulus; Second, a habituation threshold — **if the stimulus is too monotonous or repeated too often, the brain loses interest, as it no longer perceives it as a potential threat.**

- ♦ *Only without auditory input can we reach the theta range, which lies between 4 Hz and 7 Hz.*
- ♦ *„Mind machines“*



(A misconception that criminals have taken advantage of time and again: If the alarm goes off for the eleventh time without cause, a burglar can be fairly sure they won't be caught.)

These so-called “**meditation devices**” must therefore continually surprise the brain with new “ideas.” That's why most of these devices with fixed programmed pulse frequencies are largely ineffective. However, for these devices that rely on sensory organs, there is a **definitive boundary — the point at which the brain enters deep sleep and shuts down both external and internal perceptions. This occurs during what is known as the delta rhythm, in which the brain produces oscillations in the range of 1 to 3 Hz.**

In this deep sleep state, the body clearly dominates over the mind. It is the state of regeneration. A person in a delta brainwave state can barely be awakened by light or sound — physical stimulation is usually needed, such as shaking them awake. A delta rhythm cannot be induced in the body via the visual or auditory senses.

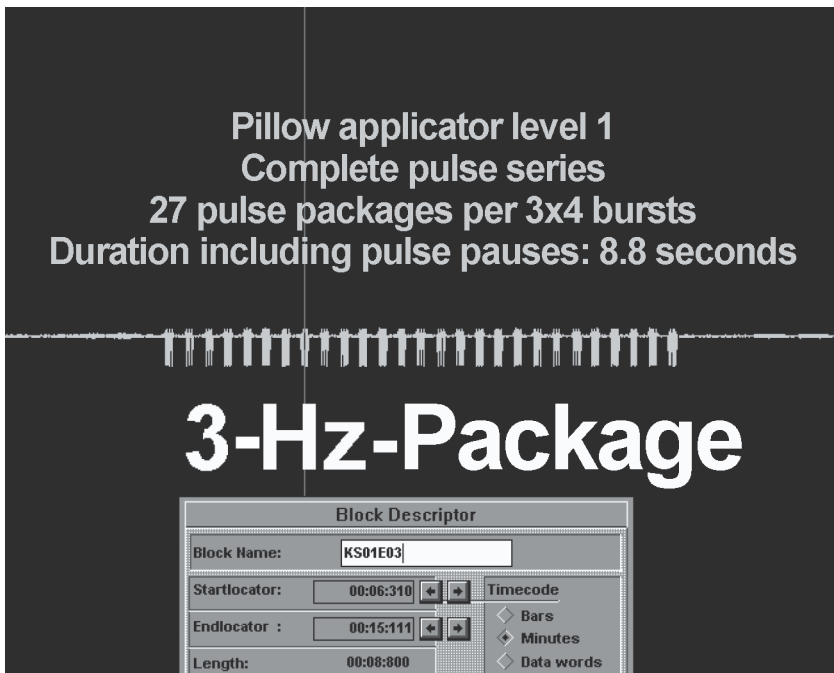
**For example, if you play a Viennese waltz with 180 beats per minute, which equals exactly 3 tones per second — i.e., 3 Hz from the delta range — people don't get into the mood,** complain, and resist following the rhythm for long. But if you increase the tempo to the customary 193 beats per minute, it is often observed that sensitive individuals, through the trance-like experience brought on by music and dance, develop theta-related experiences that are anchored in the brain through the rhythm of the waltz.

**“A magnetic field, due to its special nature, does not need to be channeled into the body through a specialized sense organ. It penetrates the body at every point and affects it as a whole. The body is, in a sense, a receiver for the frequencies embedded in the magnetic field as information.**

- ♦ *The delta rhythm: 1–3 Hz*
- ♦ *Regeneration for body and mind*

(Incidentally, it is also a transmitter — but let's not complicate things here.)”

It is therefore also possible to introduce frequencies containing information into the body via the magnetic field — even if they lie outside the range of perception — and to trigger resonant oscillations at appropriate locations. The **3 Hz component of the Quantronik impulse serves this purpose. It belongs to the delta range, the state in which the body regenerates** and the brain shuts down — in deep sleep. However, artificially inducing this state is not always possible even with the Quantronik system — especially if the person is well rested and alert, pays attention to external sounds, and keeps their eyes open.



- ♦ *Magnetic rest*
- ♦ *The 3 Hz pulse package*

This is precisely where it applies: the Quantronik frequency “cocktail” offers a variety of physiologically beneficial, body-appropriate stimulations.

**However, when a person is exhausted and in need of sleep, the brain becomes receptive to low-frequency magnetic stimuli.** It actively seeks out the delta wave, which is included in the broad frequency spectrum of the Quantronik signal. The 3 Hz oscillation is essentially the double bass to daily activity — brought into resonance and amplification via the magnetic field. The brain then selects the 3 Hz component of the Quantronik signal when it is ready to receive it. As a result, deep sleep occurs more quickly and brings greater recovery.

**There is clear evidence that the Quantronik field can stimulate the production of melatonin — the hormone associated with sleep, regeneration, and anti-cancer effects.** Whether this happens via delta stimulation or through another mechanism is still to be determined.

However, what is already proven today is that the melatonin balance can be disrupted by the electromagnetic smog of our modern power systems — when the exposure becomes too intense.

### **Quantroniks promotes restful sleep!**

- ♦ *The Quantronik frequency „cocktail“ offers a variety of body-appropriate stimulations.*
- ♦ *The magic hormone: Melatonin*

**Chapter 21**

**THE  
AMPLITUDE WINDOW**

-

**THE  
MASTER KEY  
TO LONGER  
LIFE**





## Chapter 20

## The Amplitude Window or The Master Key to Longer Life

Why was the Quantronik signal patented worldwide in the first place? How could something that mirrors natural processes within the human body be protected from imitators and free riders? What, exactly, is the inventive element of the Quantronik innovation?

It lies in the technology used to introduce these replications of natural processes into the body — a **key technology**.

Why call it a key?

Let me try to explain it as simply as possible using an image: Think of the human body as the “house” a person lives in. You live your entire life in this “house.” What some might call the soul, mind, self, or astral body — whatever term you prefer — resides in this physical body.

Now, we all know that people live in different houses or apartments. These differ most noticeably in size — from a monk’s cell to a royal palace. However, the doors of these houses don’t differ nearly as much. From a structural standpoint, every door has three main components: the **door leaf, the hinges, and the lock**.

Of course, one can also enter a house by smashing in the door or a window — or even breaking through the wall. If you will, medicine over the past 3,000 years has developed all sorts of ‘**break-in techniques**’ to gain access to

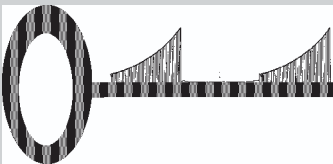
♦ *Quantroniks as key technology*

the house of your body. **Surgery and internal medicine — even therapies using high-energy radiation — are nothing more than different forms of ‘invasive’ techniques** (invasive from Latin: to penetrate).”

**In contrast, Quantroniks is truly a non-invasive technique, because no matter is introduced into the body — only information for controlling matter, transmitted in the form of quanta (massless radiation). Quantroniks enters the house with a key! And not only does it enter the house — it goes through every room, because it has the master key for all rooms...**

Let’s stick with our metaphor: if the body is the dwelling place of your life, then we can imagine each individual room as a cell — just like monks often refer to their small living quarters as “cells.” Each of these room-cells also has doors, and we gradually begin to understand **that the doors in our metaphor correspond to the pores in the cell membrane. The locks, on the other hand, correspond to the receptors in the membrane — these open the pores only when the correct bioelectric key fits.**

Perhaps you have a **magnetic key card**, the kind now commonly used to open the doors of banks, ATMs, or secure areas. These magnetic card systems are increasingly replacing traditional mechanical locks, because they are much more cost-effective, and if an electronic master key is lost, it doesn’t require replacing the entire system — just a small reprogramming.



On the cellular level, the Quantronik signal corresponds to the code on the magnetic card.

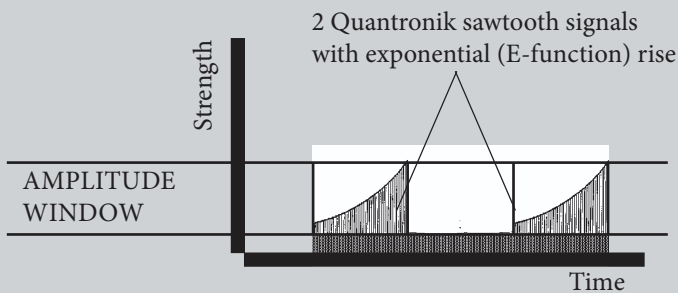
It is the bioelectric master key for the cell membrane.

♦ ***The Quantronik signal as the bioelectric master key***

Like a physical key, the Quantronik signal has a precisely defined length, a precise key pattern, and exactly measured notches.

In Quantroniks, we refer to this as the amplitude window, because the master key to the cell is made up of precisely defined electromagnetic impulses.

The amplitude window is nothing more than the template for the master key, generated by the Quantronik control unit. Only within this template do the cell pores open to allow better supply and exchange!



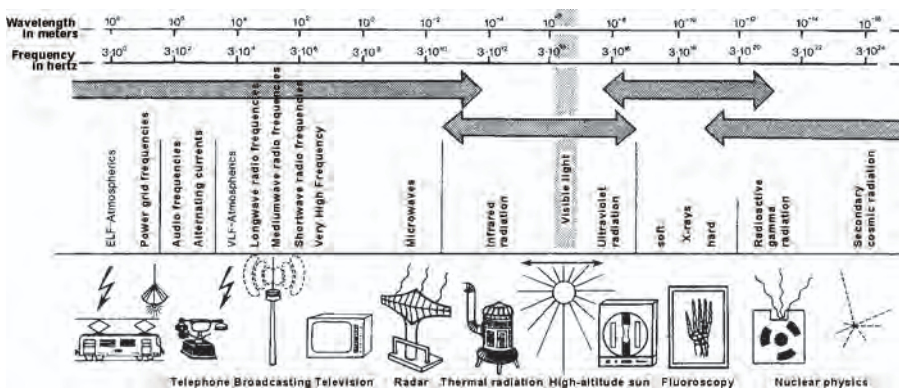
**Can this lock be “picked” without adhering to the amplitude window and the specific form of the Quantronik signal?** Could one build a magnetic field therapy device that moves ions in the body using a different amplitude or impulse form? No! There is no other code that can move the ions in the desired direction. Only within the amplitude window is the polarization of the cell membrane possible — and only then can ions be directed with precision. The strength must be exactly right, as must the duration and shape of the impulse. Otherwise, nothing at all happens at the vessel wall. **In other words: The Quantronik patent cannot be bypassed. Not even the inventors themselves could find another way!**

- ♦ *The amplitude window of the human cell is 2 million years old*
- ♦ *Any alteration of the amplitude window is ineffective for humans*



In the course of my lectures on the Quantronik system, I am often asked why I speak so openly and in such detail about the mechanism of action — whether I’m not afraid of imitators who might come out with competing devices that differ only slightly from the patented version. These questions always come from people who haven’t understood the **concept of the amplitude window**. They simply cannot grasp that there is only one single path — the one that evolution has laid out for us over millions of years. And to protect this path from imitators, we had to present the mechanism of action openly and in detail in the first place.

I usually bring my audience to that “aha moment” by pointing to an analogy from the world of visible light:



As shown in the overview of the forms of electromagnetic energy (taken from the book **Invisible Environment** by Quantronik co-inventor Prof. Dr.-Ing. H. L. König, p. 40), there are a number of “heavyweight zones” in the electromagnetic spectrum that can also be described as “windows” — for example, the range to which the human eye responds: the range of visible light.

♦ **Overview of the forms of electromagnetic energy**

Outside of this relatively narrow “window,” there is still light — but we don’t see it, because our retinal cells are not designed to perceive it.

**Imagine if Edison had invented a light bulb that emitted light outside the range our retina can detect...**

Or think of the “window” of hearing — that incredibly narrow corridor of sound frequencies humans are capable of perceiving. If we want to build a loudspeaker to artificially generate sound, we must take that window into account. It must not emit frequencies that only our dog can hear, because of its differently tuned sense of hearing. The frequency range of the amplitude window of our sense of hearing lies between 300 kHz and 300 MHz.

And just like that, the polarization of our cell membranes — which is essential to bodily function and occurs through ions — is only achievable within the narrowly defined amplitude window used by Quantroniks.

There is no other way to do it — unless humans were to undergo an unexpected electrobiological transformation. But that would mean nature suddenly changes the locks — and it doesn’t do that. After all, evolution has spent millions of years refining this locking mechanism. If it were to change the locks, it would lose its own key — the one it uses to regulate the body’s functions.

However, there are cases in which the natural key no longer seems to fit. The body has slipped into a metabolic disorder, or even an existential crisis. It no longer has the strength to insert the key into the lock in order to supply its cells with fresh nutrients and oxygen. It’s as if the lock were gummed up with chewing gum.

♦ *Quantroniks is the light of the cell*

With Quantroniks, we give even a sick body the chance to increase the pressure toward the cell membrane. We trigger the calcium cascade and, combined with an immune system activated by quanta, we can eliminate invaders in the body — especially at the receptor sites — and restore the bioelectric flow.

**And once the bioelectric flow resumes its natural course, all that's needed is the supply of optimal nutrition (which, nowadays, is unfortunately no longer possible without nutritional supplementation) to secure the maximum possible lifespan of each cell — and, therefore, of the entire organism.**

At some point in the not-too-distant future, someone may quote this book and say: Look at that — back in 1996, it was already predicted that the average human lifespan would double again. Because even then, the author of this book foresaw that this would be possible through the use of the amplitude window via Quantroniks.

♦ *Natural bioelectric flow: maximum lifespan*

## Chapter 22

# THE WUPPERTAL STUDY





## Chapter 22

## The Wuppertal Study

With the definition of the impulse packages, our invention was now complete. This meant it became my task to carry out **worldwide patent research** to determine which elements could also be protected outside of Europe.

In addition, I commissioned a market analysis from the renowned firm PR+P Rowland — and it turned out brilliantly. We also had to consider which components the control unit would require. The complex technical requirements could only be met using high-performance computer technology, which allowed us to design a unit that was compact by modern standards and affordable for everyone.

**While the initial cost estimate for the home device was still in the range of a family sedan, we were ultimately able to offer the unit for the price of a high-end color TV.**

Do you remember the introduction to this book? When I parked in front of the Deutsches Museum in Munich with the freshly printed patent, and for the first time was able to enjoy the benefits of foehn weather — because my migraine was gone?

I had forgotten to mention that, in that beautiful weather, I had naturally driven with the window open, letting the warm, blue-and-white Bavarian air whistle around my shoulders. **Because my rheumatism was cured as well. Cured by prototypes of the Quantronik technology**, which I was about to submit for patent registration. My attorneys' worldwide re-

- ♦ ***The big success!***
- ♦ ***Television reports on the***
- ♦ ***scientific background of Quantroniks.***

search had revealed that no such invention had ever existed in this form. With the submission of the patent specification, payment of the fees, and the publication on January 14, 1993, our ideas were initially protected worldwide to the extent that we could proceed with distribution and manufacturing without having to fear imitators.”

From prototype to the first production model, there were still several steps to take. Designers had to create drafts, production contracts had to be signed, a distribution channel had to be built, brochures designed, certifications, approvals, expert opinions, clinical tests, and above all, user feedback and results had to be gathered...

To this end, a scientific forum was established with professors and physicians. For me, this was routine business — something I was very familiar with from earlier times. Still, it was time-consuming, even though I was truly enjoying the time made possible by my newly regained health.

What delighted me in particular was the tremendous media response, which came just a few days after the first device hit the market. By mid-1994, our first Quantronik device was already featured on German television.

The occasion was a **study on the effects of magnetic fields conducted at the University of Wuppertal. The head of the study, Prof. Dipl.-Ing. Gerhard Schauf from the university's Institute of Medical Technology**, explained the background in the broadcast:

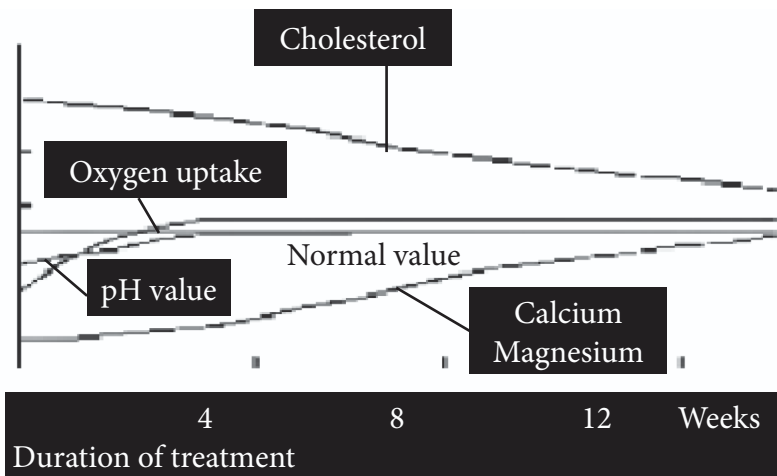
*“We have two reasons. One is the technical interest in **proving that electromagnetic fields have no effect on humans**. The second aspect is: **if there are effects on humans, then we want to demonstrate under what conditions negative effects can be avoided and possibly positive ones utilized.**”*

- ♦ ***Tremendous media response to the large-scale study at the University of Wuppertal***
- ♦ ***Prof. Dipl.-Ing. Gerhard Schauf***

The television commentator described the surprising outcome of the study as follows: *“In just six months, 700 test subjects were exposed to magnetic fields of varying intensities. Extensive blood analyses were conducted to determine possible physical effects. Initially, the results from Wuppertal were some disappointment.”*

**Prof. Schauf** explained (paraphrased): *“We found that out of 34 blood parameters examined, about 10 showed variation under the influence of magnetic fields — and this was observed in 700 patients, with an error probability as low as 1% in some cases. That is a clearly significant indication that an effect is indeed present.”*

This was, in fact, a conclusion that even expanded upon our own findings. Using an animated graphic, which I later redrew for clarity, four particularly important blood parameters were illustrated:



♦ **University of Wuppertal:**  
**Study with 700 test subjects**



The commentator explained the chart:

*“After just a few weeks, blood that was abnormally acidic returned to its normal level, as shown by the pH value curve.*

*Likewise, the blood of the test subjects was able to absorb more oxygen. The calcium and magnesium concentrations increased, and last but not least, cholesterol levels decreased — trends that have been positively evaluated by the medical professionals.”*

**Privatdozent Dr. med. Guido Sell** from the University of Wuppertal added:

*“It must be said that virtually every disease process, every injury, ultimately leads to a metabolic disorder. And the magnetic field improves metabolic disturbances — most notably, it enhances the respiratory chain, increases oxygen levels in the blood, and thus leads to an immediate subjective sense of well-being.”*

The television journalist summarized:

*“Accordingly, the medical professionals see a wide range of potential applications. Thanks to the investigations from Wuppertal, practical experiences were scientifically validated, and new therapeutic possibilities were opened up.”*

**Dr. Sell** elaborated further:

*“I can positively influence both high and low blood pressure, and I can also heal open wounds in cases of diabetes or venous disorders.”*

- ♦ *10 blood parameters were positively influenced by the magnetic field.*

*In the field of orthopedics, one of the main priorities is the preservation of artificial joints, especially hip endoprotheses. “In the past 15 years, we haven’t had to replace a single hip joint prosthesis. Whenever they became loose or showed signs of loosening, we were always able to stabilize the joints again using magnetic field therapy.”*

The documentary provided the following explanation:

*“This phenomenon can also be explained by the findings from the Wuppertal study: Under the influence of the magnetic field, metabolic exchange between the bloodstream and body cells improves. As the measurements show, calcium levels increase — a critical prerequisite for bone formation.”*



The film showed a young woman sitting on an office chair, using the cushion applicator of the first Quantronik device model.

- ♦ ***Positive evaluation by medical professionals in the fields of orthopedics, metabolic disorders, calcium increase, and blood pH improvement***

The broadcast continued: “Meanwhile, **biomedical researchers at the University of Saarbrücken are working on a new generation of therapeutic devices.**

Until now, only the strength of the magnetic field could be adjusted. With this device, however, the frequency of the electromagnetic field is also tuned to the body’s natural frequencies, so that specific body cells — for example, the walls of blood vessels — can be precisely targeted.

***The Wuppertal study shows: Magnetic field therapy can improve the physiological condition of the blood without the administration of medication.***

***It now seems entirely possible that this controversial treatment method will increasingly find a place in medical practice in Germany.”***

- ♦ ***University of Wuppertal study:  
Successful therapy without medication***

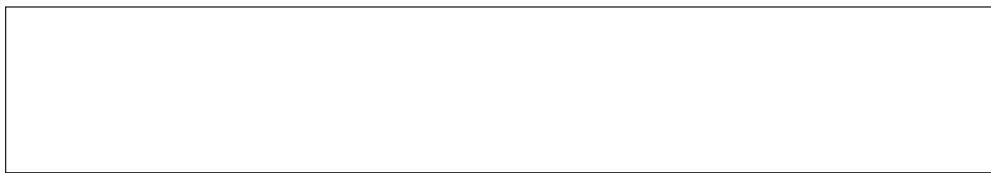
**Chapter 23**

**QUANTRON SYSTEM**

**SCIENTIFIC**

**EFFICACY STUDIES**





## Chapter 23

## Quantron System

### Presentation at the 26th Annual Meeting of the Austrian Society for Internal Medicine and at the Annual Meeting of the Austrian Society for Physical Medicine and Rehabilitation

The TV broadcast featured in the previous chapter (June 1994), along with the unexpectedly swift media support, showed not only that the time was ripe for a revolutionary leap in quantum therapy, but also that it quickly brought us a broad and satisfied user base for the first generation of Quantronik devices — sooner than we had planned.

Since the **“Salut” device** was first launched in Austria, it was there that the scientific community initially took a concrete look at the new device — and **even tested it in clinical settings for traditional magnetic field therapy applications, such as pain relief and improved mobility in diseases of the musculoskeletal system.** This was a logical step, since the patented Quantronik impulse in the Salut home device is identical to that of the physician’s model, which was at the time not yet available to the public. And as previously discussed, this impulse pattern represents **the decisive advancement over previous forms of magnetic field therapy!**

**The first medical test results obtained using Salut under the direction of Prof. Dr. Gerald Fischer from the Institute of Hygiene at the University of Graz** were presented at the 26th Annual Meeting of the Austrian Society for Internal Medicine in 1995. They were published by W. Kobinger and Prof. G. Fischer from the Institute of Hygiene in Graz, along with J. Barovic, Z. Turk, N. Sket, and D. Zivic from the Teaching Hospital Marburg/Drau, in the journal *Acta Medica Austriaca*.

♦ ***University of Graz:  
Clinical test success with „Salut“***

# Acta Medica Austriaca

Journal of the Austrian and Viennese Societies for Internal Medicine, the Austrian Society of Nuclear Medicine, and Austro-Transplant

Volume 22 (1995)

Special Issue 1

Pain relief and improved mobility  
in musculoskeletal disorders  
through magnetic field therapy

*“A group of 28 patients (14 men, 14 women) with musculoskeletal disorders, none of whom had undergone prior surgical treatment for these conditions, was treated between February 1 and May 12, 1995, using an entirely new magnetic field therapy device introduced to the Austrian market (‘Salut’).*

*The patients (average age:  $46.1 \pm 10.8$  years) were diagnosed with disc prolapse (confirmed by myelography), spinal stenosis (via CT), and osteoporosis (via densitometry) (see Fig. 1). They received 20 treatment sessions over the course of 2 weeks (twice daily, 8 minutes each — once in the morning and once in the afternoon, Monday through Friday) using a mattress-style applicator mat at maximum field strength (max.  $4 \mu T$ ).”*

*The success of the therapy was assessed using the 10-point Dolor scale and by measuring the distance of the fingertips from the floor during forward bending, both before and after treatment. Subjective pain responses were analyzed using nonparametric statistical methods (maximum test, sequential range test, and chi-squared test). For evaluation of mobility, a two-sided t-test for unequal variances was performed (parametric test).*

- ♦ ***The breakthrough has been achieved!***
- ♦ ***The Quantron System is presented at the 26th Annual Meeting for Internal Medicine***

				Pain assessment (Dol scale)			Mobility test (cm above the ground)		
Pat.	Sex	Age	Diagnosis	before	after MF-Ther.	Delta Dol End-Start	Therapy success	before after MF-Ther.	Delta 1 (cm)
01	m	52	Disc prolapse	9	5	-4	improved ---- improved	26	16
02	m	33	Disc prolapse	10	6	-4		30	21
03	m	36	Disc prolapse	10	7	-3		26	22
04	m	50	Disc prolapse	7	5	-2		29	27
05	w	45	Disc prolapse	8	5	-3		27	20
06	w	38	Disc prolapse	7	5	-2		24	24
07	w	40	Disc prolapse	9	7	-2		37	35
08	m	40	Disc prolapse	8	5	-3		20	12
09	m	48	Disc prolapse	10	9	-1		36	30
10	w	56	Disc prolapse	10	7	-3		30	27
11	w	55	Disc prolapse	10	7	-3		29	30
12	m	51	Disc prolapse	8	7	-1		31	30
13	m	38	Disc prolapse	8	6	-2		24	20
14	m	40	Disc prolapse	10	9	-1		36	30
15	m	36	Disc prolapse	8	6	-2		20	11
16	m	45	Disc prolapse	6	5	-1		26	20
17	m	50	Disc prolapse	9	7	-2		30	27
18	w	28	Disc prolapse	10	8	-2		31	25
19	w	50	Spinal stenosis	9	5	-4	28	22	
20	w	52	Spinal stenosis	8	1	-7	36	16	
21	m	50	Spinal stenosis	9	4	-5	27	21	
22	m	55	Spinal stenosis	7	4	-3	24	20	
23	w	35	Spinal stenosis	9	6	-3	26	20	
24	w	25	Spinal stenosis	6	4	-2	27	25	
25	w	55	Spinal stenosis	8	3	-5	20	11	
26	w	48	Spinal stenosis	7	4	-3	27	20	
27	w	70	Spinal stenosis						
			Osteoporosis	10	8	-2	36	30	
28	w	70	Osteoporosis	9	7	-2	36	33	

improved ---- improved

*In the Sequential Range Test, the threshold for statistical significance ( $P < 0.05$ ) was exceeded at an early stage; for methodological reasons, a lower level of error probability could not be tested (see overview on the following*

- ♦ **Acta Medica Austriaca, Special Issue 1 (1995):**
- ♦ **Test: Table based on the 10-level Dole scale**



page). The Maximum Test demonstrated a **highly significant reduction in pain** ( $p < 0.001$ ). The Chi<sup>2</sup> test, based on the null hypothesis of equal distribution between the categories 'improved' and 'not improved', also showed a highly significant effect ( $p < 0.001$ ) of magnetic field therapy.

*The increase in mobility during forward bending after magnetic field application was found to be highly significant.*

## Statistical evaluation of therapeutic success

### 1. Evaluation of pain reduction

#### a. Sequential Range Test:

The threshold for statistical significance ( $p < 0.05$ ) was greatly **exceeded**, demonstrating a measurable improvement at this level.

#### b. Maximum Test:

Negative (and positive) differences between the Dolor scale values (end of treatment minus start of treatment) were compared. This resulted in **highly significant differences** ( $p < 0.001$ ) in terms of **pain reduction** through magnetic field application.

#### c. One-dimensional Chi<sup>2</sup> procedure with one degree of freedom (including continuity correction):

Among the 28 improvements, there were no deteriorations. Assuming an equal distribution (i.e., just as many improvements as deteriorations), the Chi<sup>2</sup> value was 26.04 ( $N = 28$ ), resulting in a **highly significant pain reduction** ( $p < 0.001$ ).

- ♦ *Acta Medica Austriaca Special Issue 1 (1995):*
- ♦ *Statistical evaluation of the Quantron therapy results*

## 2. Evaluation of Mobility

The t-test (two-tailed, unequal variances) applied to the average distances from the floor during forward bending, before and after the magnetic field therapy sessions, yielded:  $t_{\text{emp}} = 3.56$ ;  $df = 51.07$ . A **highly significant improvement in mobility ( $p < 0.001$ )**.

These were the interim results of an ongoing study with the Quantronik “Salut” device, as presented at the 26th Annual Meeting of the Austrian Society for Internal Medicine in 1995.

Shortly before the completion of this book, I received word from Professor Dr. Gerald Fischer (University of Graz) that the follow-up trials were also progressing extremely positively.

UNIV.-PROF. DR. GERALD FISCHER  
University of Graz

*Dear Dr. Fischer,*

*Yesterday, we received additional data from Primar Dr. Barovic on the continuation of the clinical testing of the “Salut” device. Our collective now includes 46 participants; the results are truly very encouraging. We are currently preparing a poster presentation, as the results will be presented by Dr. Barovic at the Annual Meeting of the Austrian Society for Physical Medicine and Rehabilitation (November 10–11, 1995, AKH Vienna) under the title: “Improved Mobility and Pain Reduction in Musculoskeletal Disorders through Magnetic Fields”.*

*A copy of the poster was also sent to Dr. Wagner and Dr. Gaube (both users of the ‘Salut’ device). The poster, which presents the results of the ‘Small Orthopedic Study,’ will be shown by Dr. Barovic at the ‘Graz Congress’ on*

♦ ***Further test results for Quantron „Salut“  
at the Austrian REHA-Medicine Conference***

September 22, 1995 (you already have a copy). This serves as an indication that we also expect to receive data on 'Salut' outcomes from both of these physicians. Dr. Gaube has already responded and announced that he will compile his data and send it to us. We will then categorize and evaluate the results. In addition, he plans to experiment with the device's lower intensity settings in the future. His results so far have been very satisfactory.

***Due to the unimpeded penetration into the entire organism, low-frequency magnetic fields possess a high potential for side-effect-free therapeutic efficacy, and following initial theoretical-physical, then laboratory-based, and finally clinical evaluations, they should also be granted entry into conventional medicine as a meaningful complement.***

***The advantages compared to conventional treatment methods lie in the fact that magnetic field therapy does not place a burden on the digestive and detoxification systems as well as the circulatory system, and it can also be carried out independently at home by the patient.***

***In view of the proven successes with classical diseases of civilization such as postural damage, disorders of the musculoskeletal system, rheumatism, bone fractures of various origins (traffic, sports, and workplace accidents), this also opens up a cost-effective alternative method for health insurance providers in economically difficult times (e.g., postponement of surgeries, pain relief with reduced medication usage, high acceptance among holistically oriented patients, and much more).***

♦ ***A meaningful complement to conventional medicine***

*Ongoing investigations may also lead to successful magnetic field applications in symptoms that are demonstrably increasing sharply, such as allergies and skin diseases, triggered by immune system deficiencies resulting from growing environmental burdens (artificial fertilizers, air pollution, water contamination, food additives, etc.).*

*In closing, we kindly ask you to send us several complimentary copies of your book *Foundations of Quantum Therapy*, to which we wish wide dissemination.*

*With kind regards,  
Yours sincerely,  
Prof. Dr. Gerald Fischer*

♦ ***Quantron also successful in allergies,  
skin diseases, and immune system disorders***

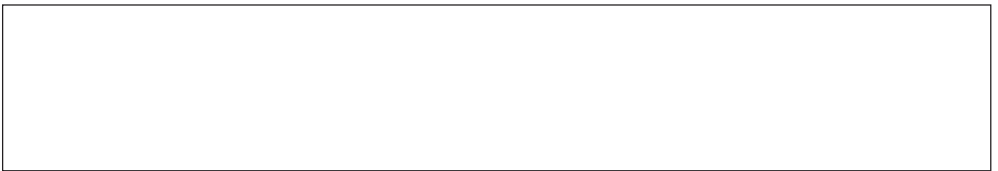


**Chapter 24**

**SCIENTIFIC  
BACKGROUND**

**THE QUANTRONIK  
PATENTS**

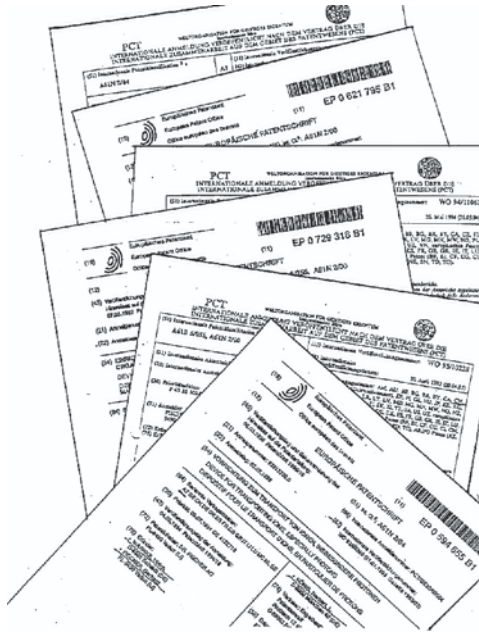




## Chapter 24

## The Quantronik Patents

Since January 14, 1993, we have disclosed all of our inventions and ideas for a new kind of medicine. Only in this way was it possible to move from the theoretical into the practical phase of testing and further development. Only in this way could we also proceed to clinical research on humans and animals. To give professionals and technically interested laypeople an idea of the technical and biological background of the Quantronik project, what follows is a complete documentation of our first and most important patent application. Of course, we have since filed additional patent applications, but I would like to document here — just as in the first edition of this book — the most important of approximately 500 protective rights: the “ion transport.”



- ♦ ***The patented ion transport –  
The most important of approximately 500 worldwide protective  
rights***



# Patent Documentation



19 BUNDESREPUBLIK

DEUTSCHLAND



DEUTSCHES  
PATENTAMT

12 Offenlegungsschrift

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51 Int. Cl.<sup>5</sup>:  
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A 61 B 10/00  
G 01 R 33/00  
H 01 Q 7/00  
H 01 Q 3/24

DE 42 21 739 A 1

## Device for the Transport of Ions, Especially Protons

The invention relates to devices for the transport of ions, especially protons, from intravascular fluids into and through the surrounding vessel walls and membranes. Using specially designed electromagnetic fields, potentials are generated in the vessel walls or membranes that enable ion or proton transport. The device can be used, for example, to transport ions from the blood flowing in a vessel into the surrounding tissue.

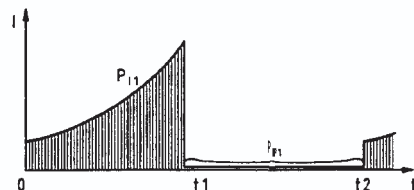


Figure: Patent – Published Application of the German Patent Office for the Granted Patent: Device for the Transport of Ions, Especially Protons.

## Description

The invention relates to a device featuring a generator that produces low-frequency pulsed electric currents, and a transmission coil connected to it, whose electromagnetic fields are used to act upon a body region to be treated.

♦ *Device for the transport of ions,  
in particular protons*

Devices of this type are generally known from the literature and also from patent documents. For example, US-A-1,442,836 describes an electromagnetic apparatus and a method for lowering glucose levels in blood serum using unipolar pulsed magnetic fields with a low pulse repetition frequency ranging from 5 Hz to 75 Hz, with individual pulse durations of, for example, 350 microseconds. Each pulse features a flat-topped waveform to ensure a constant magnetic field during the pulse duration. This is monitored by an indicator fed by a measuring coil placed within the exposure area.

US-PS 4,641,633 A1 discusses an electronic system for the activation, modulation, and/or alteration and development of cells, organs, and the organism of living individuals. According to this document, unipolar rectangular pulses with steep rise times and a pulse repetition frequency between 1 Hz and 120 Hz are used — which are transmitted via an antenna into the region to be treated. Each individual pulse is superimposed with a modulation using a high-frequency oscillation — whose frequency is intended to lie between 10 kHz and 100 MHz.

EP-0 152 963 A2 describes an electrotherapy device in which electrodes are applied to the body region to be treated, through which low-frequency pulsed electrical oscillations are delivered to the body tissue for the purpose of generating electromagnetic fields. The device essentially operates on the principle of tissue heating, in combination with an alternating electromagnetic field.

DE-PS 1 382 8043 A1 describes a medical treatment device for influencing magneto-energetic processes in the living human or animal organism, in which one or more induction coils are embedded in a flexible flat cushion and operated with pulsed direct current. The pulsed direct current generates a low-frequency pulsating magnetic field, with a frequency of, for example, 15 Hz-20 Hz.

♦ ***Existing patents from the USA,  
Europe, Germany, and Switzerland***

EP-0 266 907 A2 discusses an apparatus for irradiating a patient's body, in which a high-frequency oscillation — e.g., 27 MHz — is modulated with a low-frequency gating signal. The gating frequency is intended to lie between 1 Hz and 10 kHz, with individual pulse durations between approximately 10 and 100 microseconds.

CH-PS 675 970 A5 finally describes a device for treating living beings with an intermittent and pulsating magnetic direct field. Pulse packets consisting of several individual pulses are emitted, and the impulses within a given packet can remain constant in amplitude, increase, decrease, or rise and fall.

**All of these devices and methods share the characteristic that they are aimed at influencing biological processes through heating and/or electromagnetic radiation.**

It is furthermore known that so-called baroreceptors are located on the blood vessels in the coronary and neck regions, by means of which the body regulates blood pressure, and that it is possible to influence these baroreceptors using electromagnetic fields in such a way that blood circulation is activated. In this manner, a dilation of the capillaries has also been achieved, which led to improved blood flow in the respective areas of the body. However, since baroreceptors are only located in specific parts of the blood vessels, their influence is rather limited. Improved supply and removal within specific vessels and regions of the body therefore occurs only indirectly through generally enhanced circulation. An influence on the lymphatic system is not possible, as it does not contain baroreceptors.

In contrast, the invention is based on the task of specifying a device for the transport of ions, particularly protons, that enables targeted influence of ion concentration in any desired region of the body in both humans and animals. This task is solved, based on a device of the type described at the outset, by selecting the transmission energy at a level such that the energy induced in

♦ ***Blood vessels, baroreceptors,  
blood pressure regulation, lymphatic system***

the electrolyte fluid exceeds the thermal energy, lies within the limits of the so-called cell-specific amplitude window, and the pulsed currents generated by the generator in the preferably low-inductance transmission coil exhibit the following characteristics:

- The basic current pulse consists of a superposition of a rectangular current and a current that rises approximately according to an exponential (e-function) curve, followed by a pulse pause of at least equal length.
- The fundamental frequency of the basic current pulses with base pulse pauses lies between 100 Hz and 1,000 Hz, preferably 200 Hz.
- The amplitude of the basic pulse sequence is modulated in amplitude with a modulation frequency of 0.5 Hz to 25 Hz, preferably 20 Hz.
- The modulated basic pulse sequence is emitted as a pulse train for a duration of 0.3 seconds to 1.0 second, followed by a pulse train pause of 0.7 seconds to 5.0 seconds.

The most well-known representatives of intracorporeal electrolyte fluids in humans and animals are blood and lymph. Blood serves in the body as the universal transport medium for oxygen, carbon dioxide, water, salts and other electrolytes, nutrients, metabolic products, heat, catalytically active substances such as hormones and enzymes, antibodies, clotting agents, and so on. In terms of its flow behavior, it is a non-Newtonian fluid, more comparable to an emulsion than a suspension. The pH value is approximately 7.38. Due to its high water content, the relative dielectric constant is about 80, at least in the low-frequency range.”

- ♦ ***Device for the transport of ions,  
in particular protons***
- ♦ ***Targeted modulation of ion concentration***

Lymph is a colorless to yellowish body fluid that forms from blood plasma and is released into the tissue through the capillaries. It surrounds all cells. It accumulates in tissue spaces and cavities. Drainage initially occurs through small lymph capillaries, which merge into larger lymph vessels. Before these re-enter the bloodstream, they pass through the lymph nodes. Lymph delivers nutrients to the tissue and removes metabolic waste products. Lymph consists of approximately 95% water. Another important intracorporeal fluid is cerebrospinal fluid, which surrounds the brain and spinal cord.

Of particular importance for the proper functioning of the human and animal organism is the so-called acid-base balance, which must be maintained within narrow limits, as significant functional disturbances may otherwise occur — such as disruption of ion antagonism, the oxygen transport function of the blood, cell membrane permeability in tissue, enzyme properties, and so on.

The acid-base balance is described by the so-called Henderson-Hasselbalch equation. The acid-base balance is closely related to the body's overall electrolyte balance. **Thanks to the combined effect of pulse frequency, pulse shape, pulse energy, and coil configuration, it is possible to channel ions — particularly protons — directly and precisely from the intracorporeal electrolyte fluid, for example from the blood, lymph, or cerebrospinal fluid, into the surrounding vessel walls and membranes.** This is not possible under normal conditions, because the lipids in the membranes of blood vessels that are in contact with the blood carry a negative charge. The resulting field exceeds the thermal energy and extends approximately 1,000 Å into the plasma.

♦ *The acid-base balance is described by the so-called Henderson-Hasselbalch equation.*

The concentration of cations near the vessel surface is approximately one order of magnitude higher than in the plasma phase. As a result, the local pH value is one order of magnitude lower than in the electrolyte fluid. Normally, the surface potential constitutes an electrical barrier that prevents protons and other ions from penetrating the vessel walls. The energy required for an ion with a radius of  $10^{-10}$  m to transition from water into a lipid medium is approximately 22.6 eV. **The surface potential of vessel walls and membranes in the body varies significantly. This is accounted for by the amplitude modulation of the base pulse sequences. In this context, the so-called window effect must also be considered—i.e., that the induced voltages only enable the entry of ions and protons into the vessel wall when their strength lies within a cell-specific amplitude window.** Amplitudes that are too small or too large prevent ion transport through the vessel walls and membranes. The existence of cell-specific amplitude windows has long been known, for example through a publication by Adey in the journal *Proceedings of the IEEE*, 68, 1, pp. 119–125 from the year 1980, and a publication by Basset in the journal *Orthopädie*, 13, pp. 64–77 from the year 1984.

Under the influence of the pulsating electromagnetic fields defined by the invention, an electric voltage of a specific strength and direction is induced in the electrolyte fluid. Under this influence, ions begin to move, and due to their higher mobility, protons preferentially move toward the vessel walls. As a result of the resulting interaction, the induced field is concentrated on a small area. This creates what is known as concentration polarization. **The use of an exponential function (e-function) for the amplitude of the individual base pulses results in the surprising and medically and biologically highly significant consequence that voltage impulses are induced whose form remains essentially constant and, most importantly, exhibit no**

- ♦ *The amplitude window*
- ♦ *The local pH value is one order of magnitude lower than in the electrolyte fluid.*

phase shift relative to the current or field pulses. Only at the end of each base current pulse is a very brief voltage impulse of opposite polarity induced, which, however, only slightly interferes with the positive effect.

Thanks to the fact that the transmission current pulses or the magnetic field generated by them and the induced voltage pulses have the same form and the same phase, a maximum amount of energy is transferred. In addition, the surprising effect arises that both the positive and the negative ions in the electrolyte fluid move in the same direction. Normally, the movement directions of positive and negative ions are opposite to each other. **According to the method of the invention, positive and negative ions can thus be transported simultaneously from the body's electrolyte fluid into the same cells.** The voltage induced in the vessel wall is amplified by the polarization potential. Due to the fact that the vessel walls and, in particular, their membranes are very thin, very high field strengths arise even though the induced voltages themselves remain relatively small in absolute terms. For example, an induced voltage of only 30 mV in a membrane with a thickness of 200 nm results in a field strength of 150 kV/m.

It should be noted that field strengths of this magnitude can only be achieved inductively with electromagnetic fields and certainly not capacitively or galvanically using electrodes. Due to the high conductivity of the intracorporeal electrolyte fluids, the vessels form a kind of Faraday cage, the interior of which remains free of electric fields. In contrast, inductive excitation makes use precisely of the electrical conductivity of the intracorporeal electrolyte fluids to generate voltages and fields.

- ♦ ***Surprising effect:  
the positive and negative ions  
move in the same direction.***

The already mentioned negative charge of the vessel walls relative to the electrolyte fluids is also caused by the differences in the relative dielectric constants of the vessel walls on the one hand and the fluids on the other. Blood and lymph, due to their high water content, have relative dielectric constants in the range of approximately 80. **The vessel walls possess relative dielectric constants in the range of 3 to 5. The voltages and currents or fields induced in the electrolyte fluids according to the invention are capable of neutralizing this potential barrier known as the zeta potential. As a result, ions and especially the mobile protons can increasingly migrate into the cell and vessel walls.** The accumulation of protons in the cell and vessel walls then leads to the formation of an oppositely polarized potential barrier, which prevents the protons and ions from leaving the cell and vessel walls again. The altered proton concentration also leads to a favorable change in the pH value, especially in the area of the vessel walls.

All these effects are particularly effective the thinner the vessel walls are. They are thus especially strong in the region of the arterial capillaries, where, as is well known, the exchange of oxygen carried by the blood for carbon dioxide released by the cells takes place.

In addition to the previously described effects with long-term impact, the electromagnetic fields have other effects as well. Mention should be made here only of the electrostriction of membranes and vessel walls caused by body sound with stimulation of mechano- and piezo-receptors, the alignment of polyvalent ion chains, the tangential displacement of adsorbed counter-ions, the force effect on dielectric bodies in homogeneous and inhomogeneous fields, and electroosmosis.

♦ ***Quantroniks is capable of neutralizing the potential barrier known as the zeta potential. This enables ions to enter the cells.***



The base frequency of the basic current pulses is preferably tuned to the mechanical resonance of the blood and lymphatic vessels. As the optimal induced amplitude shape, isosceles triangles have proven effective, whereby, according to a further development, the polarity of the amplitude does not alternate. To be able to induce such impulses, special current curves and special transmission coils are required. Advantageously, the basic pulses are superimposed with high-frequency pulses at a frequency of about 10 to 100 kHz. This frequency is tuned to the capacitive transfer through the membranes. To allow the effects triggered by the induced voltages and fields to act optimally, the organism requires specific pauses. Therefore, it is advantageous for the basic pulses to be switched on and off in regular sequences, with the on and off times varying between 0.3 sec : 0.7 sec and 0.7 sec : 5.0 sec.

By adjusting the field parameters, the effect on the organism can be optimized. Advantageously, regulation is performed via biofeedback. For this purpose, according to a first variant, a blood pressure measuring device is connected to the device according to the invention. In this case, regulation is performed to achieve an optimal blood pressure value.

According to a second variant, a thermograph is connected. In this case, regulation is performed to achieve optimal warming of the desired body area through improved blood circulation.

According to a third variant, a pulse measuring device is connected. This utilizes the finding that, at optimal effect of the pulsed electromagnetic fields, the pulse rate slows down.

According to a fourth variant, a respiratory volume measuring device is connected.

- ♦ ***The base frequency is tuned to the mechanical resonances of the blood and lymphatic vessels:  
Frequency 10–100 kHz***

This approach makes use of the finding that when the pH value in the cerebrospinal fluid decreases, the respiratory volume increases, meaning that breathing deepens. External auxiliary devices, however, can be dispensed with if, according to the invention, the low-inductance, flexible flat coil used as the transmission coil is combined with at least one inductive measuring coil. This measuring coil must also be extremely low in inductance in order to capture the extremely weak fields induced in the organism as undistorted as possible. This measuring winding captures the more or less strongly reflected and phase-shifted magnetic field from the organism. The measuring signal is processed by a suitable highly sensitive electronic evaluation circuit, and then, with the help of a built-in controller if necessary, the parameters of the transmission current pulses are optimized.

Not only the shape of the transmission coil but also the shape of the measuring coil is important for the optimal function and effect of the electromagnetic fields in the organism. It has surprisingly been found that the effects within the organism are optimal when the transmission current pulses are strong enough that a measuring voltage of 20 to 30 mV is induced in a circular measuring coil with only one winding and a diameter of 20 cm. It must be assumed, however, that the area of the organism affected by the electromagnetic fields also has an extension of about 20 cm or more. If smaller body regions are to be measured, such as arms or legs, a correspondingly smaller measuring coil must be used. The resulting, system-related lower measuring voltage must be calibrated into the control circuit.

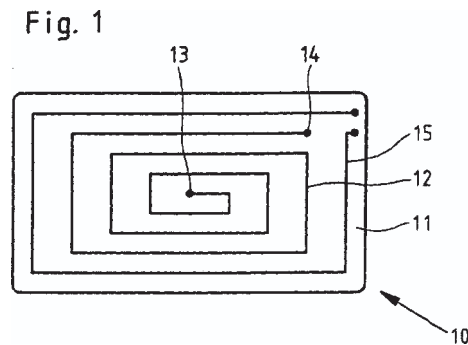
Regarding the shape and construction of the transmission coil, it has surprisingly been found that the best results are achieved when the windings of the transmission coil form an oval spiral and are distributed on both sides of the carrier plate.

♦ ***Biofeedback via blood pressure measurement, thermography, pulse measurement, and respiratory volume measurement***

Thanks to an extremely low-inductance design, the transmission coil is capable of emitting the optimal pulse shapes, frequencies, and energies without distortion.

In all cases, the shape of the transmission coil should be such that the required voltages and fields can build up at the active sites within the irradiated organism without causing dangerous field peaks. In this sense, designing the transmission coil as a so-called quadrupole is optimal.

The same purpose is served by adapting the carrier plate, which holds the windings of the transmission coil, to the body part to be treated. The invention is explained in greater detail using exemplary embodiments based on the drawing.



**Fig. 1** shows a top view of a first embodiment of a transmission coil (10). On a carrier plate (11) made of highly flexible insulating material, the actual transmission winding (12) is arranged in the form of an oval spiral, shown here with a rectangular cross-section for simplicity. The inner winding end (13) is contacted through to an additional winding with the same winding direction applied to the back of the carrier plate (11). The power supply is connected at the outer winding end (14).

♦ ***The design of the transmission coil as a so-called quadrupole is optimal.***

Wrapped around the transmission coil (12) is an inductive measuring winding (15). This captures the field reflected from the organism to be treated, which is partly weakened in intensity and phase-shifted, and feeds it to a suitable electronic circuit. Suitable highly sensitive circuits are known, for example, in the form of phase-synchronization systems.

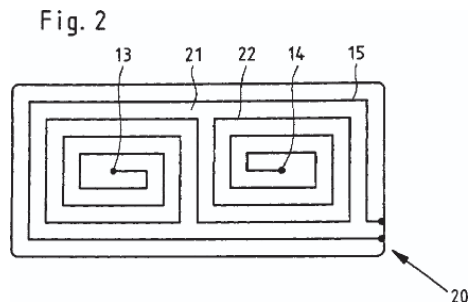
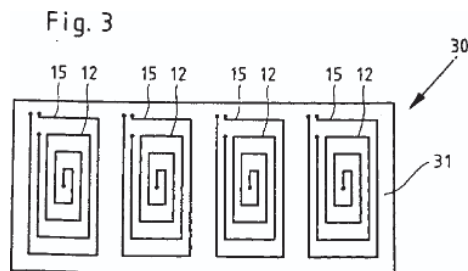
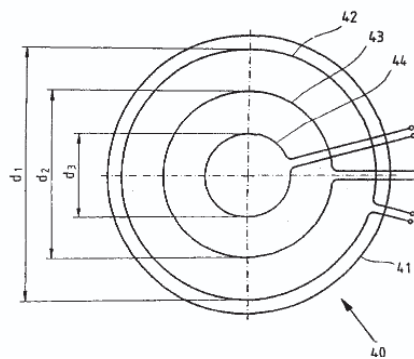


Fig. 2 shows a second embodiment of a transmission coil (20). On the carrier plate (21), there are two oval spirals (22) with opposite winding directions. Corresponding windings are located on the reverse side of the carrier plate (21). Thanks to this special winding arrangement, a so-called quadrupole is formed, whose field lines are even better suited to achieving the desired effects within the organism. Here too, a measuring winding (15) is provided.



♦ ***Transmission and measuring coil integrally connected in the form of phase-synchronization systems (quadrupole)***

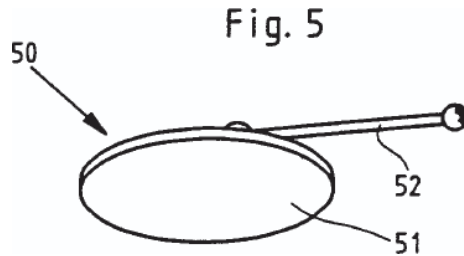
**Fig. 3** shows a third embodiment of a transmission coil (30), which is specifically intended for use in clinical practice. On a again highly flexible carrier (31), whose size can correspond approximately to that of a blanket, four transmission coils (12) with associated measuring windings (15) are arranged in the present example. By assigning individual transmission coils, larger or smaller body areas can be treated simultaneously. A cover prevents damage and contamination.



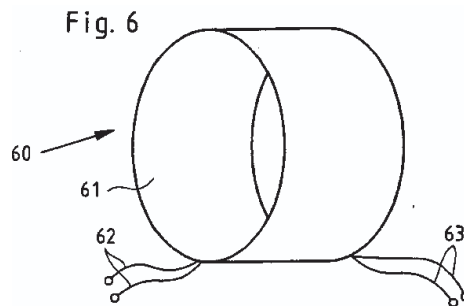
An interesting and fundamental aspect of the present invention is addressed in **Fig. 4**. Depicted is a transmission coil (40) with a flexible carrier (41), although the spiral windings of the transmission coil (40) are not shown. Three measuring windings (42, 43, 44) with different diameters  $d_1$ ,  $d_2$ , and  $d_3$  are illustrated. Experimental trials have shown that the effect of the pulsed electromagnetic fields on the organism is optimal when a voltage of 20 to 30 mV is induced in a circular measuring winding with only one turn and a diameter of 20 cm, provided that the irradiated body area is correspondingly large. If larger body areas are to be treated, a measuring coil that is too small would

♦ ***By assigning individual transmission coils, larger or smaller body areas can be treated simultaneously.***

capture only part of the reflected energy, thereby giving the false impression of insufficient transmission energy. For this reason, in practice, measuring coils with different diameters are used, and the system-related differences in induced voltage are calibrated into the connected measuring equipment.

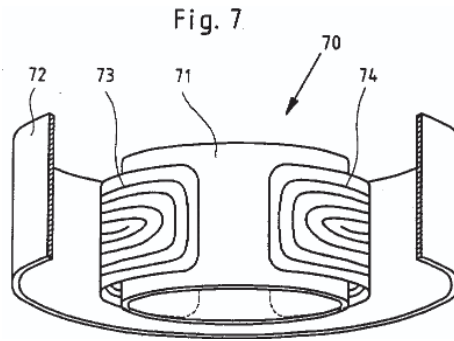


**Fig. 5** shows a first version of a transmission coil for clinical practice. A body-contoured plate (51) is attached to an articulated arm (52), inside which the transmission coils and measuring windings are located. In a (not depicted) base unit, the power supply, generator, measuring device, control device, and operating unit are housed.

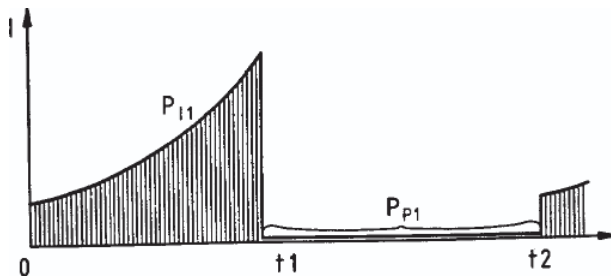


**Fig. 6** shows another embodiment of a transmission coil (60), specifically designed for the treatment of arms and legs, for example after bone fractures. The transmission coil (60) is configured as a cylinder (61) to which the power supply lines (62) and measuring lines (63) are connected.

♦ ***Transmission coils for clinical practice and orthopedics***



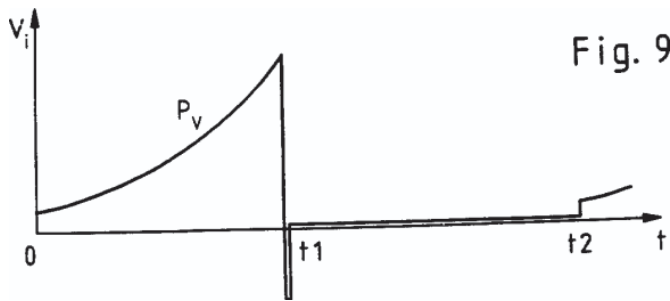
**Fig. 7** shows a cylindrical transmission coil (70) in an exploded view. Between an inner ring (71) and an outer ring (72), both made of insulating material, the actual transmission windings (73, 74) are located. Each of these windings forms an oval spiral.



**Fig. 8** shows, as an amplitude-time diagram (current  $I$ , time  $t$ ), the optimal shape of a basic current pulse  $PI_1$ , followed by a basic pulse pause  $PP_1$ . The duration of a basic current pulse  $PI_1$  corresponds to the time span from 0 to  $t_1$ , the duration of a basic pulse pause corresponds to the time span from  $t_1$  to  $t_2$ . The pulse-pause ratio is approximately 2:3. The frequency of the basic pulses lies between 100 and 1000 Hz, preferably at 200 Hz.

♦ *The „Quantron“  
Amplitude-Time Diagram*

The basic current pulses  $PI_1$  are superimposed with high-frequency pulses having a frequency between 10 and 100 kHz. The frequency of these high-frequency impulses is tuned to the capacitive transmission across the vessels of the organism. The essential feature of the basic current pulses  $PI_1$ , however, is their amplitude, which rises according to an exponential function (e-function). This waveform has two significant and surprising consequences. First, the voltage impulses  $PV$  induced in the organism have the same form; second, they are in phase with the current pulses.

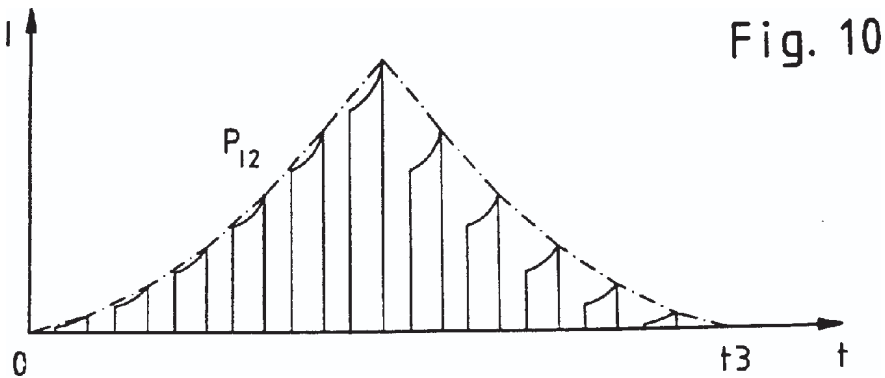


This is illustrated in the amplitude-time diagram in **Fig. 9**. The congruence in form between the basic current pulse  $PI_1$  and the induced voltage impulse  $PV$  is only disrupted by a very brief interference impulse at the end of the basic current pulse at time  $t_1$ . On the ordinate, the induced voltage  $VI$  is plotted as a quantity.

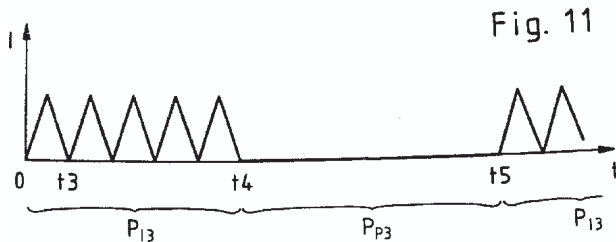
Thanks to the phase congruence between current and voltage, a maximum amount of electrical energy is transferred into the organism. Due to the physiological conditions within the organism itself, especially because blood flows through elongated blood vessels, another effect arises: both the positive and negative ions are transported in the same direction. This makes it possible for the first time to supply the cells of the organism with both components of a dissociated chemical substance.

- ♦ „**Quantroniks**“
- ♦ **High-frequency pulses 10–100 kHz**
- ♦ **Amplitude-time diagram**





**Fig. 10** shows, at a reduced time scale, a complete basic pulse sequence  $PI_2$ , whose amplitude is modulated with a modulation frequency between 0.5 and 35 Hz, preferably 20 Hz, where the modulation itself approximately forms an isosceles triangle without a change in polarity.



**Fig. 11** shows, at an even smaller time scale, a complete pulse train  $PI_3$ , whose time duration corresponds to the time from 0 to  $t_4$ , followed by a pulse train pause  $PP_3$  of duration from  $t_4$  to  $t_5$ . The on-off ratio can be varied between 0.3 : 0.7 seconds and 0.7 : 5.0 seconds. The pulse train pause  $PP_3$  accounts for the fact that the organism requires a certain amount of time to allow the chemical-physical processes initiated by the pulse train  $PI_3$  to take effect.

♦ ***A complete basic pulse sequence,  
tuned to the amplitude window***

The frequency of the basic current pulses  $PI_1$  is tuned to the mechanical resonance of the blood and lymphatic vessels. The high frequency is tuned to the capacitive transmission across the vessel walls and membranes. It is of essential importance that the pulse amplitude is selected to be strong enough to induce the necessary voltages and field strengths in the organism, while still adhering to the correct window. This is monitored by the measuring winding. The electrical conductivity of the irradiated body region, which manifests itself in an increased reflection factor, serves as a measure for the improved blood circulation, while the phase shift between current and voltage of the measuring signal serves as a measure for the altered polarization of the vessel walls and membranes.

**It goes without saying that the physiological effects of the electromechanical fields according to the invention can also be monitored using known medical measuring devices, for example by means of a blood pressure monitor, a pulse measuring device, a thermograph, or a respirometer.**

As the experiments have shown, the shape and construction of the transmission coils are of particular importance for the optimal effect of the device according to the invention. Although the base frequency is very low at preferably 200 Hz, the switching on and off generates high-frequency harmonics.

If the coil shape is not optimized, these form-defining harmonics are not sufficiently transmitted, meaning the pulse shape is altered and the effect deteriorates. Therefore, a low-inductance design of the transmission coils is important. The shape of the transmission coils must also prevent any concentrations of field lines that could potentially cause damage to the organism. Since the effect of the magnetic fields is direction-dependent, the transmission coils must be properly applied. **As experiments have shown, in principle all biological**



**organisms can be treated. Organisms with a developed blood or lymphatic circulatory system, i.e., humans and mammals, are preferred. With the help of the device according to the invention, for example, muscle development and joint regeneration in show jumping and riding horses can be stimulated, milk production in cows can be increased, and muscle growth in pigs can be promoted. In the treatment of humans, the use of the device is indicated in medicine and sports, particularly after bone fractures.**

The following effects of the pulsed electromagnetic fields according to the invention on the organism, resulting from the transport of ions — particularly protons — from the blood into the adjacent tissues and electrolyte spaces, especially in connection with the described effect that both positive and negative ions migrate in the same direction, have already been verified:

The pH value reduction, triggered by the accumulation of protons, sensitizes the baroreceptors, with this effect adding to the already known mechanical stimulation of the baroreceptors by means of electrostriction. As a result, excitation of the sympathetic nervous system is reduced, vessel dilation is enhanced, heat radiation from the surface of the organism is measurably increased, and the oxygen partial pressure in the treated body region is elevated.

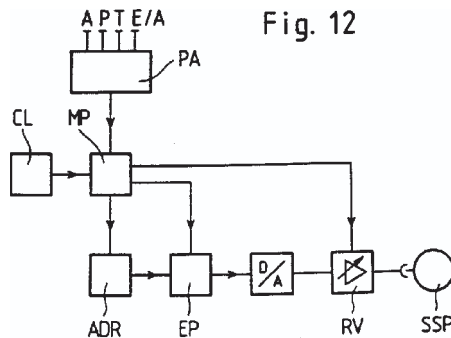
At the same time, the pH value reduction sensitizes the vagus center, leading to a measurable decrease in pulse rate.

**A pH value reduction also activates the macrophages.**

- ♦ ***Quantroniks – Application in veterinary medicine:  
Muscle development in horses,  
milk production in cows,  
meat formation in pigs***

If the pH value of the cerebrospinal fluid is also lowered, the respiratory center becomes sensitized, resulting in a measurable deepening of respiration.

**The effect of the pulsed electromagnetic fields is optimal when the blood has a high proton concentration. This occurs during sleep, as the blood then contains a high concentration of CO<sub>2</sub>, after physical exertion or after alcohol consumption, when the blood contains a high concentration of lactate, and during fasting, when the blood contains a high concentration of ketone bodies.**



**Fig. 12** shows a block diagram of a tested basic unit. A microprocessor (MP) is provided as the sequence controller for the basic unit, which receives its setting parameters from a control panel (PA). The microprocessor (MP) is supplied with its operating clock by a clock signal generator labeled C1. The desired shape of the transmission signal to be generated is permanently stored in digital form as a sequence of individual amplitude values in a memory module designated EP, for example, an EPROM.

The microprocessor (MP) sends a readout signal to the memory (EP), which triggers the reading of those memory cells whose memory addresses are specified by the microprocessor (MP) via an address memory and generator (ADR). At the output of the memory (EP), therefore, during operation, a se-

♦ ***The respiratory center becomes sensitized, resulting in a measurable deepening of respiration.***

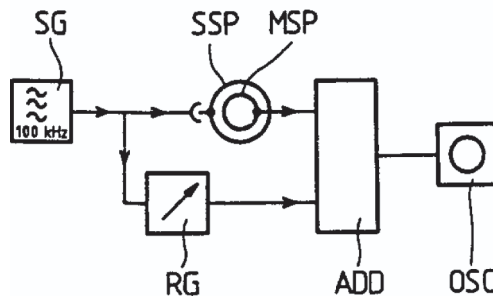
quence of digital values or words is emitted that describes the desired shape of the transmission signal. This digital signal is converted by a digital-to-analog converter (D/A) into a sequence of corresponding amplitude samples, which are fed via an amplifier (RV) exhibiting low-pass characteristics, and whose gain is additionally adjustable, as a continuous signal to a transmission coil (SSP).

From the control panel (PA), the gain of the low-pass amplifier (RV) — and thus the amplitude of the current supplied to the transmission coil (SSP) — can be adjusted via a control knob (A). Using the control knob (P), the sequence of memory cells to be read successively from the memory (EP) can be set via the microprocessor (MP) to best describe the desired signal shape. Using the control knob (Z), the required time values for the pulses, which are to be set via the microprocessor (MP), can be selected. The operating switch is labeled (E/A), with which the basic device can be turned on or off. The generation of signals of special form in this manner is known per se, for example from DE-A 1 36 28 219, so that a further detailed description is unnecessary.

In **Fig. 13**, the previously mentioned measuring device for determining the impedance of a body region to be treated is shown as a block diagram. A signal generator (SG) with a frequency of, for example, 100 kHz feeds a transmission coil (SSP), to which a measuring coil (MSP) is assigned. The signal supplied to the transmission coil (SSP) and the signal taken from the measuring coil (MSP) are fed either in phase to a subtraction stage or out of phase to an addition stage (ADD). Due to the amplitude difference between the two signals, a control unit (RG) is inserted into the line from the signal source to the subtraction or addition stage (ADD). The control unit (RG) contains an attenuation regulator to compensate for the amplitude difference and a phase regulator to compensate for the phase shift exhibited by the signal supplied by the measuring coil (MSP).

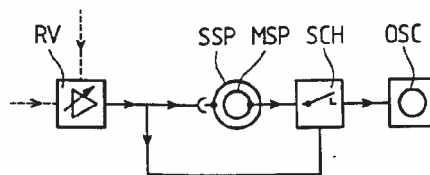
♦ ***The necessary, highly developed, complex microprocessors***

Fig. 13



At the output of the subtraction or addition stage (ADD), a residual signal appears during the measurement process after amplitude and phase adjustment, which, in connection with the set value of the phase shift adjusted via the control unit (RG), allows a determination of the impedance of the body region subjected to the signal. The phase regulator in the control unit (RG) can be omitted if, as explained in connection with **Fig. 12**, the subtraction or addition stage (ADD) is also equipped with a phase comparator, which directly measures the mentioned phase shift and either displays it on a display device (OSC) or supplies it as a control variable to the control panel (PA) or the microprocessor (MP).

Fig. 14



- ♦ **Measurement process: a residual signal enables a determination of the impedance of the body region subjected to the signal.**

In **Fig. 14**, a measuring device is shown, which follows the control amplifier in Fig. 12. Assigned to the transmission coil (SSP) is a measuring coil (MSP), which in turn feeds a measuring device or a display device such as an oscilloscope (OSC). Between the measuring coil (MSP) and the oscilloscope (OSC), a switch (SCH) is inserted, which is controlled by the output signal of the control amplifier (RV). The control of the switch (SCH) is such that the transmission path from the measuring coil (MSP) to the display device (OSC) is interrupted as long as a current from the control amplifier (RV) is supplied to the transmission coil (SSP), meaning as long as pulses are being emitted. During the pulse pauses, that is, when the RV is not supplying current to the SSP, the transmission path is closed. The signal captured by the measuring coil (MSP) during the pulse pauses is thus fed to the display device, which in this example is designed as an oscilloscope (OSC).

The circuit shown in Fig. 13 can also be used for a similar purpose if the 100 kHz generator (SG) is replaced or connected with the control amplifier (RV) according to Figs. 12 or 14. The measuring signals obtained with the circuits according to Figs. 13 and 14 can be used for the regulation of the transmission currents in two ways. The measuring signals can be displayed, and the operator can then manually adjust the controls of the control panel accordingly. The other possibility is that the measuring signals are used directly as control signals for the control amplifier (RV) or the microprocessor (MP), prompting a corresponding change in amplification and/or a change in pulse shape and/or an adjustment of the timing control.

- ♦ ***Control amplifier and differentiation***
- ♦ ***Pulse generators, measuring signal receivers***

## PATENT CLAIMS

1. Device comprising a generator that generates low-frequency pulsed electric currents and a transmission coil connected to it, whose electromagnetic fields act on a body region to be treated, characterized in that the pulsed currents generated by the generator in the transmission coil exhibit the following properties:
  - the basic current pulse consists of a superposition of a rectangular current and a current that rises approximately according to an exponential function (e-function) and is followed by a pulse pause of at least equal duration;
  - the fundamental frequency of the basic current pulses with base pulse pauses lies between 100 Hz and 1,000 Hz, preferably at 200 Hz;
  - the amplitude of the basic pulse sequence is modulated in amplitude with a modulation frequency of 0.5 Hz to 25 Hz, preferably 20 Hz;
  - the modulated basic pulse sequence is emitted as a pulse train for a duration of 0.3 seconds to 1.0 second, followed by a pulse train pause of 0.7 seconds to 5.0 seconds.
2. Device according to Claim 1, characterized in that the transmission coil is designed to have low inductance.
3. Device according to Claim 1 or 2, characterized in that the transmission coil is formed from a flexible support with one or more electrical conductors arranged in a spiral.



4. Device according to any of the preceding claims, characterized in that the signal generator and the transmission coil are accommodated together in a flat cushion.
5. Device according to any of the preceding claims, characterized in that a signal generator for generating control signals is assigned to the pulse generator, which automatically or manually controls the pulse generator according to a predetermined program.
6. Device according to any of the preceding claims, characterized in that a measuring device for measuring the biological response of the organism is assigned to the transmission coil, and the measuring signals are used as control signals for the pulse generator.
7. Device according to any of the preceding claims, characterized in that a measuring device is provided which measures the reflection behavior of the emitted electromagnetic field, and the measured values are used as control signals for the pulse generator.
8. Device according to any of the preceding claims, characterized in that a digital memory for the storage of pulse sequences and/or control programs is assigned to the pulse generator.
9. Device according to any of the preceding claims, characterized in that a computer for controlling the device and for recording and evaluating the biological response signals is assigned to the pulse generator.
10. Device according to any of the preceding claims, characterized in that the transmission coil has a measuring coil arranged concentrically inside or outside, which inductively detects the electromagnetic fields of the transmission coil.

11. Device according to any of the preceding claims, characterized in that the pulse sequences are composed of multiple superimposed frequencies.
12. Device according to any of the preceding claims, characterized in that the pulse train is automatically adjusted based on measured biological parameters.
13. Device according to any of the preceding claims, characterized in that a measuring device for blood pressure, respiratory rate, heart rate, or skin temperature is connected, and the pulse sequences and/or pulse amplitudes are adjusted based on the measured values.
14. Device according to any of the preceding claims, characterized in that a measuring device for capturing the electrical reflection behavior of the organism is provided, and regulation is carried out based on these measured values.
15. Device according to any of the preceding claims, characterized in that the transmission coil is designed as a quadrupole.
16. Device according to any of the preceding claims, characterized in that the transmission coil is arranged on a flexible carrier material and that both sides of the carrier material are equipped with windings.
17. Device according to any of the preceding claims, characterized in that a memory stores various pulse programs adapted to different therapeutic purposes.

♦ ***17 Patent Claims,  
Summary***

## **Device for Determining the Effect of Pulsed Magnetic Fields on an Organism European**

Patent Office PCT/EP94/03325 – WO 95/10228

The invention relates to a device for determining the effect of pulsed primary magnetic fields on an organism.

Pulsed magnetic fields acting on an organism are of particular interest, for example, for ion transport from intracorporeal fluids into and through the surrounding vessel walls and membranes of organisms. Devices for this purpose are described, for example, in DOS 42 21 739 A1. This publication also describes devices for determining the effect of such magnetic fields. For this, the organism is either exposed to an approximately sinusoidal signal in the frequency range around 100 kHz during the pulse pauses, and the corresponding received signal is picked up by a measuring coil, or the secondary field signal is detected with the measuring coil via a blanking circuit, which is induced in the measuring coil after each pulse of the primary magnetic field by the secondary and decaying magnetic field generated in the organism.

The invention concerns a further development of such a device with the aim of increasing the informational value of the measurement results.

This is achieved, in the case of a device for determining the effect of pulsed primary magnetic fields on an organism — where an evaluation circuit is provided for signals derived from the organism via a measuring transducer, preferably designed as a measuring coil for secondary field signals — according to the invention, in that the evaluation circuit is equipped with a memory unit, that the memory unit comprises a memory to which a control unit is assigned that is designed such that the writing of multiple temporally successive individual signals into the memory occurs in such a way that these are

♦ ***Determining the Effect of the ,Quantronik System‘  
on an Organism: Biofeedback***

combined in the memory into a summed signal, and that this summed signal, composed of multiple individual signals, is provided as the output signal of the evaluation circuit.

For detecting the effects, several advantageous evaluation options exist. For example, the amplitude value and/or the energy content of secondary field signals can be determined in the evaluation circuit. An advantageous embodiment provides that the evaluation circuit is assigned a circuit for calculating the mean value from several individual values. This is preferably designed as a correlator that performs an algebraic addition for the individual values and a geometric addition for interfering signals. In this way, the signal-to-noise ratio can be significantly increased, thereby improving the accuracy of the measurement result.

The inventive design also makes it possible to configure the evaluation circuit in such a way that it stores the value occurring at the beginning and/or at the end of the exposure of the organism. According to a further advantageous embodiment, the evaluation circuit is configured such that differential signals are formed from secondary field signals and stored.

As memory, a memory that can be separated from the device is preferably used, which may also be an additional memory — particularly a memory chip card. It is also possible to divide the memory into several areas, one of which is intended for storing the measured values, another for storing treatment data, and a third as an access-protected area for organism-related personal data.”

♦ ***The ,Quantronik‘ memory and its utilization by the evaluation circuit***

Since the secondary magnetic fields are very weak, it is advisable to implement measures to ensure that the individual signals recorded in memory can be evaluated in a comparable manner. This is all the more effective the better the signal-to-noise ratio is. An advantageous solution for this consists, for example, in assigning to the measuring coil, which serves to capture the secondary field signal from the organism — as is known per se — another coil placed at a distance from the measuring coil, such that it is primarily penetrated only by the magnetic interference fields that also penetrate the measuring coil, and that both coils, with regard to their output signals resulting from the interference fields, are electrically connected in a differential configuration to the input of the evaluation circuit. For example, the additional coil can be positioned at a certain distance above the measuring coil so that it primarily captures only ambient interference signals, but practically no secondary field signal, while the measuring coil captures not only the ambient interference signal but also the secondary field signal. If both coils are dimensioned and wound in such a way that they produce approximately identical output signals with respect to magnetic ambient interference, they can be electrically connected in opposite polarity and linked to the input of the evaluation circuit. This makes a significantly improved signal available in memory for further processing. The signals obtained from the two coils can also be matched to each other with regard to ambient interference by means of preferably adjustable attenuators or control amplifiers. To increase the signal-to-noise ratio in the evaluation circuit, it is also possible to provide magnetic shielding of the measuring coil against external magnetic interference fields (magnetic ambient interference).

In this context, it is also advantageous to use means to compensate for the influence of distance changes between the sensor and the organism during the measurement process, especially due to respiratory movements. One possibility is to firmly anchor the sensor to the organism. Another, optionally additional, possibility consists in providing a circuit that derives a trigger

- ♦ ***Biofeedback: Transmitting and measuring coil coupled with spatial sensing coil for electrosmog detection and eliminatio***

signal from movements of the organism, and equipping the evaluation circuit with a trigger component that receives the trigger signal, thereby activating the evaluation circuit only at times defined by the trigger signal — specifically those times at which the same distance exists between the sensor, such as the measuring coil, and the relevant region of the organism. The derivation circuit may, for example, be a photoelectric barrier.

According to a further development of the invention, an electrochemical sensor for gases emitted by the organism or for organism-specific fluids is provided, particularly as an additional measuring transducer. In the case of a gas sensor, it is expediently integrated into or with a breathing mask. This sensor is advantageously a detector for hydrogen chloride and/or nitric oxide.

According to another further development of the invention, a radiation thermometer is provided, again preferably as an additional measuring transducer, for determining the temperature of the organism, which outputs the temperature value as an electrical signal at its output. It has proven advantageous to design the radiation thermometer as a measuring device for detecting the organism's temperature in a body cavity, particularly in the ear.

The device is expediently designed structurally in such a way that it forms a single unit with a device for exposing an organism to pulsed magnetic fields.

It is also advantageous if, in a device whose evaluation circuit is assigned an additional, especially removable, memory unit, a lockout mechanism is provided which only allows activation of the device when the additional memory is connected. It has also proven beneficial to provide the device with a lockout mechanism that allows activation of the device only in the late morning and/or late afternoon.

- ♦ ***Measuring transducer (sensor) for gas measurements such as hydrogen chloride or nitric oxide***
- ♦ ***Temperature measurement and feedback***

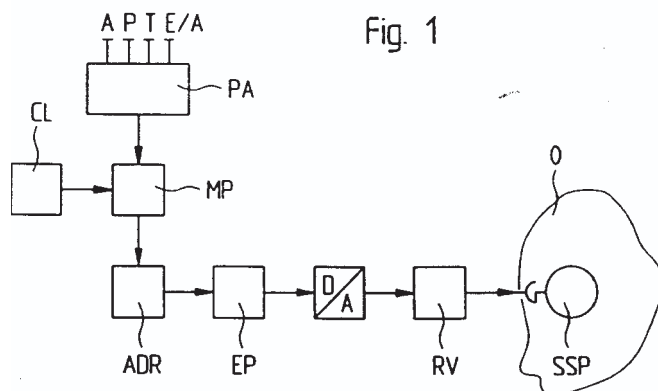
U.S. Patent 5,152,288 describes a device and method for measuring weak spatially and temporally variable magnetic fields, in which weak magnetic fields emanating from the organism to be examined are detected using a multitude of measuring sensors referred to there as superconducting quantum interference devices (SQUIDs). SQUIDs, including their structure, mode of action, and application, are described in the book *Mikroelektronische Sensoren* by Waldmann and Ahlers, VEB Verlag Technik/Berlin, 1st edition, 1989, pages 148/149 with references. As shown in Figure 7 of the aforementioned patent specification, the signals recorded with the SQUIDs are supplied, among other things, to a memory, from which the stored values are used to derive an anatomical image of the examination object or a model of the object. According to further details in the patent, this is a device for tomography and not a device for determining the effect of pulsed primary magnetic fields on an organism, and it does not include the essential memory unit with its special control system that defines the invention described here.

The invention is explained in more detail below. The accompanying drawings show:

- Figure 1**      A block diagram of a device for generating pulsed magnetic fields on an organism,
- Figure 2**      A pulse schedule,
- Figure 3**      A device according to the invention,
- Figure 4**      The temporal amplitude progression of a measured secondary field signal,
- Figure 5**      An analog embodiment of the invention with a magnetic tape storage unit,
- Figure 6**      A digital embodiment of the invention with a matrix-type memory,
- Figure 7**      A device according to the invention with an external memory card,
- Figure 8**      A preferred design of an external memory card for recording changes that occur during the treatment of an organism

- ♦ ***Preprogrammed activation of the device***
- ♦ ***Measurement and compensation of interference fields***

- Figure 9** A block diagram of a device according to the invention with a timing lock,
- Figure 10** A cross-section through a known gas sensor used as a measuring transducer in a device according to the invention,
- Figure 11** A breathing mask with a gas sensor.

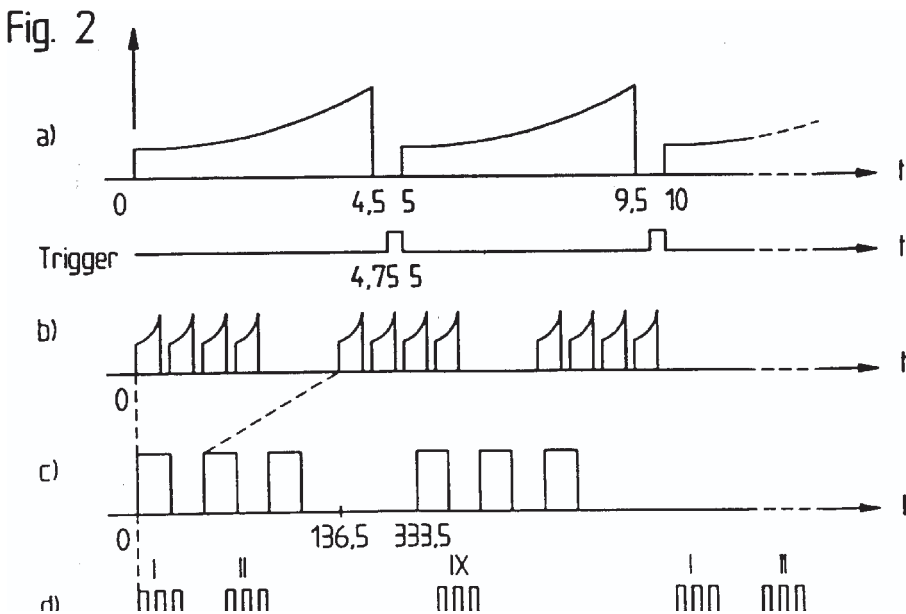


The block diagram according to **Figure 1** corresponds to that shown and described in the previously mentioned DOS 42 21 739 A1. According to it, a transmission coil (SSP) is supplied with the corresponding currents. The transmission coil generates a corresponding (primary) magnetic field in the organism (O), which is phase-shifted relative to the current in the transmission coil. This primary magnetic field induces (secondary) voltage in the organism (O), which in turn triggers a corresponding (secondary) current flow within the organism, the time course of which represents the first derivative of the primary magnetic field profile. This (secondary) current then builds up a (secondary) magnetic field, whose time course corresponds to the secondary current profile. The secondary magnetic field induces a signal in a measuring coil.

♦ **Pulse schedule and block diagram  
for powering the transmission coil**



(MSP) **Figure 3** generates a current that is the first derivative of the temporal course of the secondary current and thus the second derivative of the primary current that has flowed through the transmission coil.



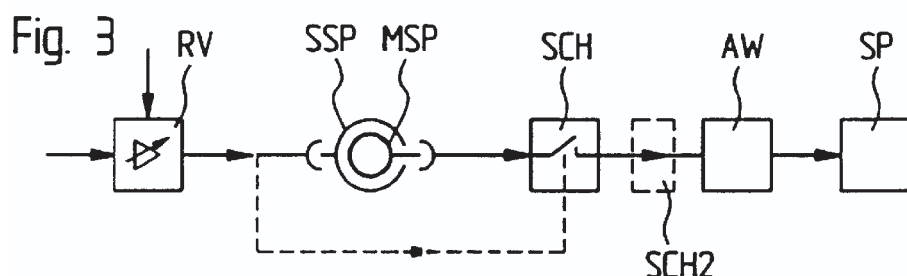
**Figure 2** shows a pulse schedule representing the time course of the current in the transmission coil (SSP) that generates the primary magnetic field. To aid understanding, tested values for the duration of individual pulses and pulse pauses in milliseconds are noted in the pulse schedule.

In the pulse schedule, section a) shows the shape of the so-called basic pulse, which has a repetition frequency of, for example, 200 Hz and follows an exponential peak curve. However, the basic pulse is not emitted continuously. Rather, as shown in section b), each group of four basic pulses is followed by a pulse pause. Three such pulse packets, each consisting of four basic pulses-

- ♦ **5-fold pulse schedule**  
**with frequencies from 0 – 12,000 Hz**
- ♦ **Pulse packets**

es and the corresponding pulse pauses, are emitted in succession, as shown in section c), followed by another pulse pause. As depicted in section d), nine such triple packets are emitted in succession, followed by a further pulse pause. This cycle then repeats over a duration of several minutes — for example, two minutes.

The secondary fields triggered in the organism (O) by the primary signal and its magnetic field are detected using a device according to the invention, for which a block diagram is shown in **Figure 3**.



The basic setup in this example corresponds to that of **Figure 14** from the previously mentioned DOS 42 21 739 A1. However, connected to the output of the blanking circuit (SCH) is a memory circuit (SP), which serves to store secondary field signals that are received via the measuring coil (MSP) after each basic pulse. These are the signals that occur during the pulse pause of approximately 0.5 milliseconds following each individual basic pulse (see Figure 2a). Since a current spike occurs in the measuring coil when the basic pulse returns to zero — a spike that does not correspond to the desired secondary field signal — the connection to the memory (SP) is only established after this spike has decayed. This can be achieved, for example, by deriving a correspondingly delayed trigger pulse from the basic pulse, as illustrated in **Figure 2**. This trigger pulse controls the switching from the measuring coil to the evaluation circuit (AW) with the memory (SP), valid for the period up to

♦ **Block diagram for  
storing secondary field signals**

the beginning of the next basic pulse.

In this way, a sequence of secondary field signals is generated, which are stored in the memory (SP) for further evaluation.

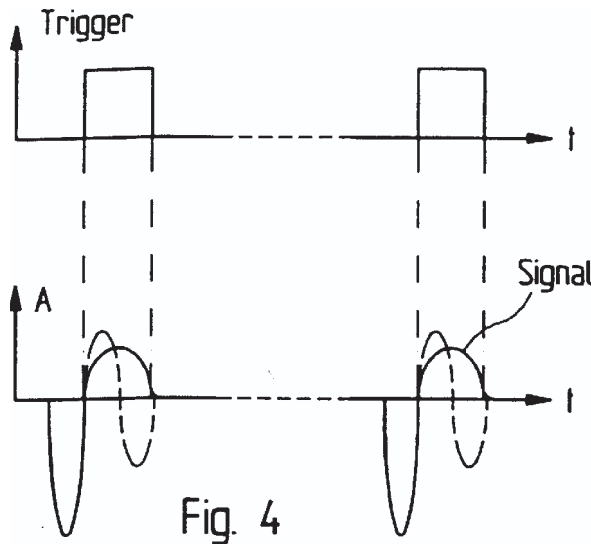


Fig. 4

The course of such a secondary field signal is shown in **Figure 4**, in which time values are plotted on the abscissa and amplitude values on the ordinate. From this it can be seen that the secondary field signal is relatively weak and, consequently, that interfering signals such as noise and external interference fields can lead to significant measurement errors. This corresponds to an insufficient signal-to-noise ratio. The shape shown in Figure 4 represents a measured secondary field signal. In principle, secondary field signals can be derived from any pulses of the primary pulse sequence. However, it has proven advantageous to use the sequence of basic pulses for this purpose, which, in the conditions shown in Figure 2, results in a repetition frequency of e.g., 200 Hz.

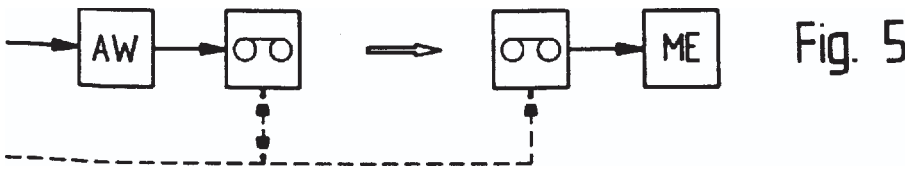
♦ *Trigger pulses for secondary field signals*

The trigger pulse causes the blanking switch (SCH) to close only during the time of the secondary field signal of interest. As a result, not only are the voltage spikes — indicated by dashed lines at the end of each individual pulse (see Figure 4) — suppressed, but also any other unwanted signals occurring during the blanking period.

When measuring over a certain period of time, secondary field signals occur sequentially in time, typically in analog form. If, as shown in **Figure 5**, a magnetic tape recorder is used as the memory device, the individual signals are recorded geometrically one after another on the magnetic tape.

They can thus be further processed in a simple manner. Above all, a sequence of individual recordings can be combined into a summed signal by means of a correlation method, which exhibits a significantly improved signal-to-noise ratio compared to the individual recorded signal. The correlation technique is generally known from communications engineering and is described in detail, with source references, for example in the book *Correlationstechnik* by Lange, 1960, VEB-Verlag, Berlin — especially on pages 348 and 353. Essential in the present application is the fact that successive secondary field signals, over a certain number of consecutive basic pulses, have an almost identical amplitude pattern and can therefore be subjected to algebraic addition. This can be done, for example, by reading out the successive secondary field signals in sequence and writing the readout results into a shared memory in the sense of pure, phase-synchronous addition. Interference signals such as noise and short-term disturbances are, by nature, not phase-synchronous and are thus largely added geometrically. Phase-synchronous interference signals, on the other hand, can also be selectively removed from the summed signal using a time-window technique — essentially ‘cutting them out’ of the signal. This yields a signal well-suited for further analysis. **Figure 5** schematically illustrates such a summation into a shared memory.

♦ ***Elimination of unwanted secondary signals and voltage spikes at the end of a pulse***



From the output of the magnetic tape recorder (MAZ 1), a second magnetic tape recorder (MAZ 2) is fed. The magnetic tape of MAZ 2, designed as a closed loop, has such a loop length and is matched in its tape speed relative to MAZ 1 in such a way that successive secondary field signals from MAZ 1 are always written onto the same section of tape in MAZ 2. It is essential to ensure that the tape in MAZ 2 is not erased between the individual recordings. To ensure exact time or phase synchronization, it is recommended — as indicated by a dashed line — that synchronization is established, for example, with the trigger signal that operates the blanking switch (SCH, see **Figure 3**).

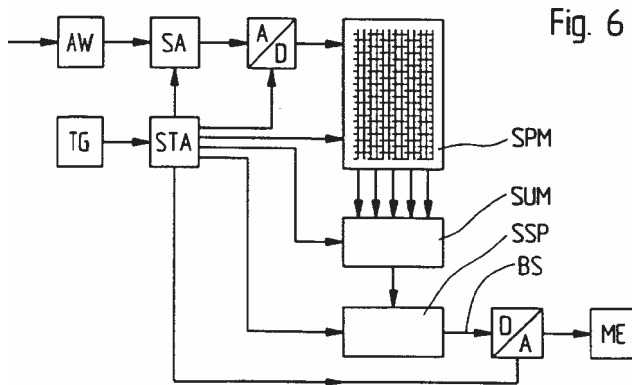
The summed signal can be read out via a playback head from MAZ 2 and forwarded to the actual measuring device (ME). The measuring device (ME) can be an oscilloscope, a measuring instrument for determining the maximum amplitude of the signal, or an integrator for determining the area under the curve of the secondary field signal — and thus its energy content (see **Figure 4**).

Phase and time synchronization between MAZ 1 and MAZ 2 can also be ensured by deriving synchronization for MAZ 2 from the signal output of MAZ 1. For this purpose, the secondary field signal in MAZ 1 can be recorded together with the trigger signal or a synchronization signal, which is then used in MAZ 2 for synchronization. This method also allows for temporal separation of the actual signal acquisition via the measuring coil (MSP) from

♦ ***Phase-synchronous interference signals  
are selectively removed from the summed signal***

the evaluation process carried out via MAZ 2.

Instead of analog storage, digital storage can also be advantageously used. In this case, as shown in **Figure 6**, the secondary field signals are sampled in a sampler (SA) at a correspondingly high sampling frequency.



The individual samples are converted into digital signals in an analog-to-digital converter (A/D). In a manner known per se, this produces a sequence of digital signals, each representing the amplitude value of one sample, which can be stored for further processing. It is advisable to write the digital signals of successive secondary field signals into successive rows of a memory organized like a matrix (SPM), so that the individual digitally recorded secondary field signals are stacked vertically in the matrix. For evaluation, it is then only necessary to digitally sum the values in each column of the matrix using an adder (SUM) and store the results column-wise in a sum memory (SSP). The cleaned-up signal (BS) can then be retrieved from the sum memory (SSP). This signal can be converted into an analog signal using a digital-to-analog converter in a manner known per se and used as described in **Figure 5**. Alternatively, it can be evaluated digitally within the digital signal domain using known methods.

- ♦ *In addition to analog storage, digital storage*
- ♦ *Circuit diagram shows how secondary field signals are sampled at high frequency in a sampler.*

Reading from the memory matrix can be performed serially, as can the writing of results from the adder (SUM) into the sum memory (SSP). This reduces the number of required connections between SPM, SUM, and SSP in a manner known per se.

The clock signals required for the process, likewise known per se, for the individual circuit components (SA, A/D, SPM, SSP, SUM, D/A) are provided by a common clock generator (TG) via a control signal derivation circuit (STA), also in a known manner.

The inclusion of a memory in the evaluation circuit opens up, in a simple way, a range of evaluation options of varying qualitative and quantitative significance. The amplitude of the current induced in the measuring coil after each pulse — as well as the energy transferred from the organism into the measuring coil after each pulse — is a key variable for determining the effect that each individual pulse exerts on the treated organism with regard to ion transport. This applies especially to the basic current pulses with a repetition frequency between 100 Hz and 1,000 Hz, preferably 200 Hz. The secondary field signals or feedback signals are the second derivative of the primary signal, and their amplitude progression is determined by the treated organism. From the second derivative, among other things, the following statements can be derived:

### 1.

**It is a measure of an increased volume of electrolytes (blood, lymph, extracellular fluid) due to higher ion flow recruitment (i.e., higher displacement current) in the induced electromotive field. The key measure here is primarily the height of the first amplitude within a cycle of four pulses in the 200 impulses/second series (see Figure 2). Physiologically, this corresponds to increased central and peripheral blood flow in an organism (increased blood vessel dilation and increased blood perfusion).**

- ♦ *The individual samples are converted into a digital signal in a so-called analog/digital converter to obtain the optimal frequency pattern*

2.

It is a measure of the polarization amplitude of the affected interfaces caused by:

- a) the neutralization and possible recharging of the contact potential between the 'liquid' and 'solid' phases, i.e., between the electrolyte and the vessel wall or membrane.
- b) the degree of capacitive charging, whereby the quantity of ions brought to the interface for polarization is proportional both to the amount of electrolyte (see point 1) and to the induced electromotive force, and thus also to the size of the induced area. The relevant indicator here is the shape change of the feedback impulse peaks and the decreasing height of the 2nd, 3rd, and 4th impulse amplitudes within the 4-pulse cycle of the 200 impulses/second series. Physiologically, this corresponds to the pH shift caused by rapid proton migration in the electromotive field and to the release of  $\text{Ca}^{2+}$  from proteins during pH lowering and  $\text{Ca}^{2+}$  binding during pH increase.

The effects described in points 1 and 2 are in turn correlated with:

- \*increased partial pressure of oxygen ( $\text{pO}_2$ ) in tissue cells,
- \*increased substrate supply to tissue cells,
- \*increased removal of metabolic by-products from tissue cells,
- \*stimulation of immune system activity, particularly macrophage activity,
- \*increased activity of specific enzymes,
- \*enhanced cell regeneration,
- \*increased flow of information.

The evaluation of these correlated parameters takes place by measuring the area under the secondary field curve, i.e., the voltage-time curve of the feedback impulse — more precisely, the integrated area of the feedback impulses across several pulse cascades, each consisting of 4-pulse cycles. This area value can be continuously displayed as a general indicator of current tissue perfusion.

♦ *Measurement of the effect within the organism, feedback, evaluation, automatic adjustment until optimal response occurs*



The change — particularly the increase — of the summed area value per pulse cascade compared to the area value of the previous pulse cascade is a crucial indicator of the effectiveness of the physical therapy system or of a system triggered by pharmaceuticals (e.g., circulation-promoting agents), physical activity, or similar. It is therefore recommended to make this visible on a separate display device. The area value increases more significantly per unit of time especially when, compared to the initial state, there is improved blood circulation and/or increased lymphatic flow without excessive polarization of the interfaces. This means that the applied amplitude and duration of the magnetic field, the medication, movement, etc. — in short, the dose — can be evaluated precisely based on the actual physiological response of the organism. In breathing organisms, however, the measurement can be significantly modulated by respiratory motion, since the distance between the measuring coil and the organism changes unless specific countermeasures are taken. This can become particularly disruptive during longer measurement cycles. One solution to this problem is to equip the measuring coil with a mechanism for firm attachment to the organism. Another option is based on the fact that the breathing rate differs significantly from the repetition frequency of the secondary field signals. For example, one can define specific respiratory time phases using infrared light barriers, in which the distance between the measuring coil (MSP) and the breathing organism (O) remains within certain limits — and allow the secondary field signals recorded by the MSP to be evaluated only during those phases. This can be achieved, for example, by assigning an additional blanking switch (SCH 2) to SCH — as shown with dashed lines in **Figure 3** — which only switches through during these specific time phases.

- ♦ *Shape change of the feedback impulse peaks,  
until pH values shift*

The design according to the invention also enables the possibility of detecting and documenting the long-term effects of magnetic field treatment. For this purpose, an external memory relative to the device — such as a patient card — is used. This patient card can be a card with a memory chip, as is generally known, for example from the book *Chipkarten – Technik, Sicherheit, Anwendungen* (Chip Cards – Technology, Security, Applications) by Fietta, Verlag Dr. Alfred Hüthig, 1989, Heidelberg (in particular the reference on page 132 for such applications). It is expedient for the device to be equipped with a locking mechanism for writing data to the external memory, such as a patient card, that allows the device to be operated only when the external memory is inserted in its designated slot on the device and is write-enabled.

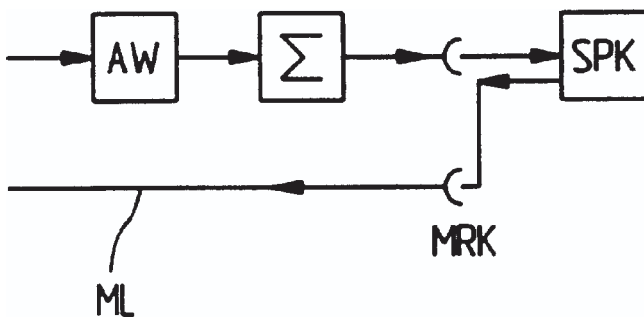


Fig. 7

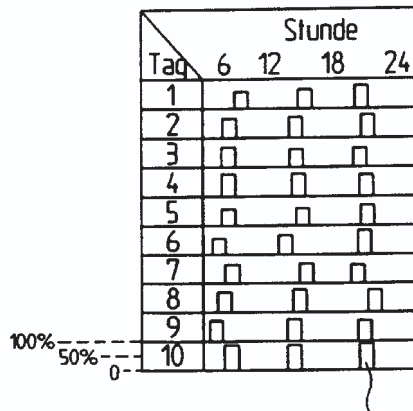
This is indicated in **Figure 7** by a feedback contact (MRK) or switch, which enables the operation of the device via a signaling line (ML). Such locking mechanisms are known, for example, from floppy disk drives of personal computers, so that a more detailed explanation is unnecessary.

- ♦ *This control leads to increased oxygen partial pressure in the tissue, improved substrate supply to tissue cells, stimulation of immune activity, enzyme activity, cell regeneration, and information flow.*

On such a patient card — as illustrated by way of example in Figure 8 — the sum of all differences between the pulse cycles, that is, all gains over a therapy or measurement period of, for example, 7 minutes per treatment, is recorded. This can be represented, for instance, by a number between 1 and 100, which indicates the percentage growth compared to the initial cycle (= initial measurement, either absolute or relative per day). 100% growth thus means a feedback amplitude twice as large, corresponding to approximately twice the blood or lymph volume at the end of the treatment compared to the initial measurement. This can also be interpreted as a switchable display format for daily treatment success.

If the card — assumed in Figure 8 — is designed as a visually readable card, it is advisable to structure the card data so that the data from a single treatment day is recorded in one row, with the daily rows arranged underneath one another. For three measurements per day (i.e., per 24 hours) and ten consecutive treatment days, the result is the format shown. The differences between the respective starting value and the corresponding final value are entered, for example, as measurement bars (MB).

Fig. 8



- ♦ *Patient chip card:*  
*targeted and more precise diagnosis for the physician*

For the measurement, it has proven advantageous to combine approximately 100 consecutive secondary field signals into a single measurement value. This corresponds to a measurement duration of about 500 milliseconds. If this measurement is taken at both the beginning and the end of a treatment lasting, for example, seven minutes, the difference between the two measurement values can be used to determine the change that has occurred in the organism due to the treatment. The correlation-based evaluation of one hundred individual secondary field signals results in a significant improvement of the signal-to-noise ratio. The use of a memory device also provides an additional evaluation option for the secondary field signal. If a differentiating element is connected downstream of the memory (SP) (see **Figure 3**), the output provides a signal that allows statements to be made about the fine structure of the secondary field signal — similar to what has been known for years in the analysis of electrocardiograms. This not only makes the mechanisms of action more clearly detectable but also the effects of ions being transported through the organism by means of magnetic fields.

The differentiating element is preferably arranged downstream of the memory (SP) and upstream of the actual measuring unit. Its output signal can also be stored in a memory for further processing. In **Figure 4**, the course of a signal obtainable by differentiation is shown as a dashed line. It is also possible to carry out the differentiation upstream of the memory and store the result in memory for further use.

**As the studies underlying the invention have shown, the timing of exposure of an organism is of considerable importance. Since magnetic fields can suppress the sleep hormone melatonin, exposure should be avoided when sleep is needed, or conversely, applied when staying awake is desired. Furthermore, since the adrenaline level influences the effectiveness, it is advisable to schedule the application for late morning (11:00 a.m.  $\pm$  2 hours) and/or late afternoon (4:00 p.m.  $\pm$  2 hours), as during**



these periods the adrenaline level in the human circadian rhythm is at its highest.

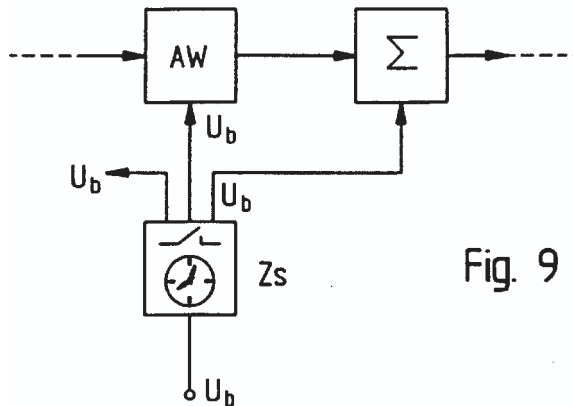


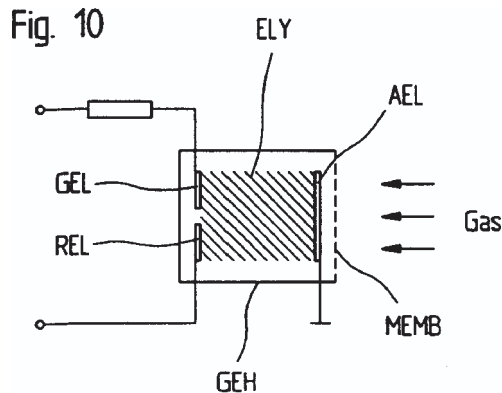
Fig. 9

This can be implemented, as shown schematically in **Figure 9**, by providing a timer (ZS) that, for example, interrupts the operating voltage ( $U_b$ ) for the evaluation circuit (AW) and/or other circuit components of the device — such as the sum memory, and in particular the generator for supplying the magnetic field coil — outside the specified time windows, thereby keeping the device out of operation.

As further shown by the investigations underlying the invention, exposure of an organism to a magnetic field leads to increased oxygen diffusion due to an elevated oxygen partial pressure in the tissue. This is caused by the dilation of blood vessels. An increase in temperature is also observed. Therefore, the individual signals can be captured not only with a measuring transducer responsive to the secondary magnetic field, but also with chemosensors — particularly gas sensors — and/or with sensors responsive to thermal radiation. These different sensors can be used individually or in combination.

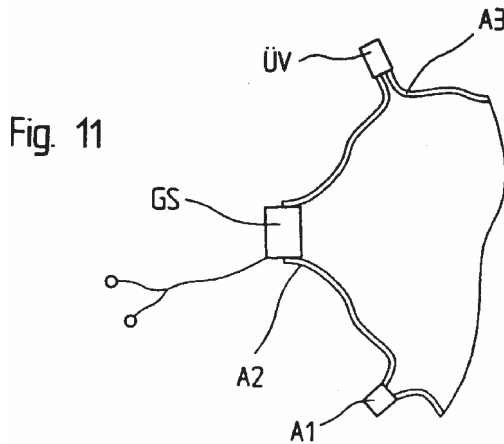
- ♦ *The 'Quantronik' memory:  
The computer memory for the evaluation  
of all organ-specific differential results*

Especially effective has proven to be the acquisition of individual signals from exhaled air using gas sensors for the gases nitric oxide, hydrogen chloride, and carbon monoxide. Such sensors, including their circuit design, are generally known — for example, from the aforementioned book *Mikroelektronische Sensoren*, pages 111 to 137.



**Figure 10** shows a schematic cross-section of a gas sensor such as the one used, for example, in the device G 818 by the ‘Gesellschaft für Gerätebau’ in Dortmund (Company for Equipment Construction Dortmund). In a housing (GEH) equipped with a gas-permeable membrane (MEMB), a working electrode (AEL), a reference electrode (REL), and a counter electrode (GEL) are arranged. The space between the electrodes is filled with a suitable electrolyte (ELY), whose reaction with the gas introduced into the sensor through the membrane causes a change in the electrical values between the electrodes. The G 818 device is known, among other things, for measuring nitric oxide in motor vehicle engines. This sensor is a semiconductor sensor in which the current flowing through it serves as the measuring variable. It generates a voltage across a resistor through which the current flows, corresponding to the gas concentration, and this voltage serves as the measurement signal.

♦ *Determination of the optimal application time and automatic control*



The gas sensor is expediently integrated into a breathing mask, which, in a tested design intended to enclose the nose and chin area of a person — as shown in **Figure 11** — features three connectors. A first connector (A1) serves to connect to a pressure pump (not shown), which pushes ambient air into the breathing mask. A second connector (A2) contains the gas sensor (GS), from which an electrical lead transmits the electrical signal of the gas sensor to the device (not shown). A third connector (A3) contains a pressure relief valve (ÜV), which ensures constant pressure inside the breathing mask and thus clearly reproducible measurement conditions for the gas sensor. The pressure generated by the pressure pump connected to the breathing mask — shown only schematically — should be low and just sufficient to ensure a reliable outflow of exhaled air in the area of the gas sensor (GS). An over-pressure between approximately 20 and 80 millibars relative to ambient air has proven to be advantageous.

Instead of the illustrated breathing mask with a pressure pump connection, a breathing mask without a pump can also be used. This type is similar to a gas mask and features an inhalation valve and an exhalation valve. The gas sensor should be positioned in the airflow path of the exhaled air, similarly to the setup in **Figure 1**.

- ♦ ***Cross-section of a gas sensor for measuring nitric oxide content and residual oxygen in exhaled air***

This type of breathing mask does, however, require a certain additional energy expenditure by the organism during respiration. The change in exhaled air triggered by magnetic field exposure occurs with a slight delay relative to the period of application (several minutes), because not only the organism but also the gas sensor requires a certain amount of time to respond. Nevertheless, the reaction is clearly detectable — especially when, as explained using **Figure 3**, only useful signals are extracted using the time window technique and fed to the memory as individual signals for summation. When the signal is visualized at the output using oscillographic display, one can clearly recognize a signal reflecting the change in gas concentration, whose duration corresponds relatively well to the preceding duration of magnetic pulse application. Instead of evaluating changes in gases exhaled by the organism, it is also possible to evaluate changes in body fluids — particularly changes in the enzymes contained within them. The aforementioned book *Mikroelektronische Sensoren* also describes and explains such sensors, so a detailed explanation can be omitted due to their familiarity.

The device according to the invention is of particular importance also because it allows for the monitoring and control of magnetic field exposure. Excessive exposure can exceed the regulatory capacity of an organism (e.g.,  $\text{Ca}^{2+}$  surplus in cells). In such cases, pathological effects are to be expected. However, the diffusion of nitric oxide in the lungs of an organism can serve as an indicator for unphysiological conditions.

♦ ***Breathing mask device (similar to a gas mask)  
for determining respiratory gas composition and diagnosis***



## PATENT CLAIMS

1. Device for determining the effect of pulsed primary magnetic fields on an organism, in which an evaluation circuit is provided for signals derived from the organism via a measuring transducer, preferably designed as a measuring coil for secondary field signals, characterized in that the evaluation circuit is equipped with a memory unit, that the memory unit comprises a memory to which a control unit is assigned that is designed such that the writing of multiple temporally successive individual signals into the memory occurs in such a way that these are combined in the memory into a summed signal, and that this summed signal, composed of several individual signals, is provided as the output signal of the evaluation circuit.
2. Device according to Claim 1, characterized in that a blanking circuit is provided in the evaluation circuit between the measuring transducer for the individual signals and the memory, and that a control unit is provided for the blanking circuit, which allows writing of individual signals only during rest periods following a primary magnetic field pulse.
3. Device according to Claim 1 or 2, characterized in that the control unit of the memory is designed such that the summed signal represents the mean value of several individual values.
4. Device according to Claim 3, characterized in that the circuit for calculating the mean value is designed as a correlator that performs an algebraic addition for the individual values and a geometric addition for interfering signals.

♦ ***Visualization and evaluation of changes  
in gas concentration in exhaled air  
using an oscilloscope***

5. Device according to one of Claims 1 to 4, characterized in that the evaluation circuit, the memory, and the control unit are designed in such a way that the amplitude value of individual signals is determined.
6. Device according to one of Claims 1 to 4, characterized in that the evaluation circuit, the memory, and the control unit are designed in such a way that the energy content of individual signals is determined.
7. Device according to one of Claims 1 to 6, characterized in that the evaluation circuit, the memory, and the control unit are designed in such a way that difference signals are formed from individual signals and stored.
8. Device according to one of Claims 1 to 7, characterized in that the evaluation circuit and the control unit of the memory are designed in such a way that the summed signals occurring at the beginning and/or end of an exposure of the organism to pulsed magnetic fields — particularly in the form of difference signals — are transferred to a further memory.
9. Device according to one of Claims 1 to 8, characterized in that the further memory is a memory detachable from the device, in particular in the form of a memory chip card.
10. Device according to one of Claims 1 to 9, characterized in that the memory is divided — according to known principles — into multiple areas, one of which is provided for storing determined values, another for storing treatment data, and another as an access-protected area for organism-specific personal data.

11. Device according to one of Claims 1 to 10, characterized in that a circuit for deriving a trigger signal from the movements of the organism is provided to ensure comparable individual signals, and that the evaluation circuit is equipped with a trigger unit which receives the trigger signal and activates the evaluation circuit only at times determined by the trigger signal.
12. Device according to one of Claims 1 to 11, characterized in that for a measuring transducer designed as a measuring coil and for measuring signals of the magnetic secondary field, a fixed anchoring of the measuring coil to the organism is provided to ensure comparable individual signals in memory.
13. Device according to one of Claims 1 to 12, characterized in that for a measuring transducer designed as a measuring coil and for measuring signals of the magnetic secondary field, to increase the signal-to-noise ratio in the evaluation circuit, a second coil is assigned to the measuring coil — which serves to receive the secondary field signal from the organism — in such a way that it is essentially only penetrated by the magnetic interference fields that also affect the measuring coil, and that both coils are electrically connected in differential mode with respect to their output signals resulting from the interference fields to the input of the evaluation circuit.
14. Device according to one of Claims 1 to 13, characterized in that for a measuring transducer designed as a measuring coil and for measuring signals of the magnetic secondary field, the measuring coil is shielded from external magnetic interference fields to increase the signal-to-noise ratio in the evaluation circuit.

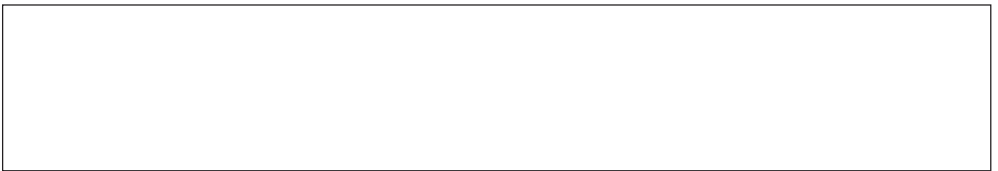
15. Device according to one of Claims 1 to 14, characterized in that an electrochemical sensor is additionally provided as a measuring transducer, specifically for gases emitted by the organism or for organism-specific fluids.
16. Device according to Claim 15, characterized in that in the case of a gas sensor, it is integrated into a breathing mask.
17. Device according to Claim 16, characterized in that the breathing mask is equipped with three connectors, one for pressurized air supply, one for mounting the gas sensor, and one for a pressure relief valve, which ensures a largely constant overpressure for the passage of gas from the gas inlet through the gas sensor to the space outside the breathing mask.
18. Device according to one of Claims 15, 16, or 17, characterized in that the measuring transducer is a sensor for hydrogen chloride and/or nitric oxide.
19. Device according to one of Claims 1 to 14, characterized in that a radiation thermometer for the temperature of the organism is additionally provided as a measuring transducer, which outputs the temperature value as an electrical signal at its output.
20. Device according to Claim 19, characterized in that the radiation thermometer is designed as a measuring unit for determining the temperature of the organism in a body cavity, particularly in the ear of the organism.

21. Device according to one of the preceding claims, characterized in that it forms a device unit together with a device for exposing an organism to pulsed magnetic fields.
22. Device according to Claim 21, characterized in that in the case of an evaluation circuit with an additional memory, a lockout mechanism is provided that allows activation of the device only when the additional memory is connected.
23. Device according to Claim 20, 21, or 22, characterized in that a lockout mechanism is provided which permits activation of the device only in the late morning and/or late afternoon.

**Chapter 25**

**ANOTHER  
FUNDAMENTAL  
STUDY  
FROM THE  
UNIVERSITY OF GRAZ**





## Chapter 25

**Further Fundamental Research**

The following study was first published in the first edition of this book. With the kind permission of the authors, this contribution — important for a deeper understanding of the fundamentals — is republished here.

Gerald Fischer and Wolfgang Kobinger

Overview of Biometeorology  
**based on our own investigations**

All conventional biotropic atmospheric parameters — that is, those influencing human beings — can be derived from the four main meteorological elements: air temperature, air pressure, humidity, and air movement. Changes in the thermal-hygic environment (temperature and humidity) in particular can affect human well-being. For a healthy organism, such changes represent a natural challenge, meaning they act in the sense of eutonization (positive stress adaptation). For individuals with latent or already manifest illness, however, they represent distress: in such cases, the organism is no longer able to cope with naturally occurring variations in its meteorological environment. Latent conditions may suddenly become symptomatic, or existing illnesses may worsen — sometimes significantly.

This is referred to as the syndrome of weather sensitivity. At this point, a brief list of some of the associated complaints will be given (26):

♦ ***Further fundamental research by  
Prof. Dr. Gerald Fischer and  
Ing. Wolfgang Kobinger, University of Graz***



**Fatigue, dysphoric mood, lack of motivation to work, head pressure, restless sleep, difficulties falling asleep and concentrating, headaches, increased tendency to make mistakes, heightened forgetfulness, flickering vision, dizzy spells, heart sensations, pain from degenerative changes in the spine or at surgical scar sites, depressive moods, anxiety states, sweating, chills, loss of appetite, frequent urination (pollakisuria), disturbances of the sensory organs, and much more.**

However, weather affects everyone equally: even those not considered weather-sensitive are not exempt from the aforementioned symptom patterns — they are simply affected less frequently and less severely. There are striking differences between the sexes and age groups in this regard; even children can already be weather-sensitive. Already in elementary school, girls were found to be more meteorosensitive than boys (25). Only in later decades, around the age of 60, do men and women become more similar in their reactions (26). Weather sensitivity can manifest as early as toddler age. Typical symptoms at this stage include restless sleep, aimless activity paired with inexplicable tearfulness, increased urination, up to nocturnal panic (pavor nocturnus). Parents often do not take this seriously and typically respond with phrases like “Don’t be so silly,” “Do whatever you want,” or “Leave us alone.”

These observations are supported by the results of our own study (25). In a sample of 10 boys and 8 girls of elementary school age (9–10 years), a significantly higher weather sensitivity was documented among the girls. A comprehensive overview of the conventional meteorological elements and meteoropathies can be found in V. Faust (26).

The previously mentioned ‘classical’ meteorological elements as triggers of weather-induced symptom patterns are compounded by factors from the so-

♦ ***Summary of biometeorology based on studies  
by Prof. Dr. Gerald Fischer and Ing. W. Kobinger***

called ‘invisible environment.’ This refers to the much-discussed complex of electromagnetic effects. A simplified classification can be made as follows:

- 1. Electrostatic field of the air**
- 2. Electric, magnetic, and electromagnetic alternating fields of natural origin (atmospherics, Earth’s magnetic field)**
- 3. Ionization of the air (especially the content of negative small ions)**
- 4. Magnetic fields from artificial sources in magnetic field therapy: application by medical or naturopathic prescription/recommendation**

### **Ad 1. The electrostatic field of the air**

In the Earth’s atmosphere, there exists an electrostatic field that is generally oriented perpendicular to the Earth’s surface. In fair weather, the Earth’s surface is negatively charged, and the compensating layer in the upper atmosphere is positively charged. An average field strength near the ground can be assumed to be around 130 V/m (“fair-weather field strength”). This field is generated by global thunderstorm activity. Lightning transports negative charges to the Earth, while the positive charges of the clouds (cumulonimbus) move upward and can spread horizontally in the thin air of the ionosphere, forming the positive compensating layer.

Several of our own investigations from previous years demonstrated bioclimatic effectiveness of the electrostatic field at very high field strengths: Animal experiments showed a general increase in activity and stimulation

- ♦ *The electrostatic field of the air*
- ♦ *Fundamentals of biometeorology*

of metabolic parameters, and even changes in neurohormones in a favorable direction. However, all of these studies, carried out at high cost, did not yield definitive results due to the technological limitations of the time, since the generator exhibited superimposed residual ripple (a 50 Hz hum); this roughly corresponds to an atmospheric frequency in the extremely low-frequency range. As a result, the experimental outcomes could not be clearly attributed either to the static electric field or to the superimposed alternating electric field (43, 44, 45).

For physical reasons, static electric fields do not penetrate living organisms (almost) at all, due to the large differences in the specific conductivity between air and organic material. The same applies to building materials of any kind (concrete, brick, timber construction). Such questions sparked lively discussions within the construction industry at the time, which often escalated into partly unqualified disputes.

## **Ad 2. Static and alternating fields of natural origin**

**Atmospherics**, or **sferics** for short, are primarily natural electromagnetic waves which, depending on their frequency and nature, can include magnetic and/or electric components in the near-field range (46, 47), partly in the long-wave range with durations of approximately 1 ms to 10 ms. Their source is local and global thunderstorm activity. Atmospherics, or sferics for short, are primarily natural electromagnetic waves, which, depending on their frequency and nature, may contain magnetic and/or electric components, particularly in the near field (46, 47), partly in the long-wave range with durations of approximately 1 ms to 10 ms. Their source is local and global thunderstorm activity. While the resonance frequency of the spherical cavity resonator formed by the Earth's surface and the ionosphere is around 8 Hz (ELF sferics) and is considered a largely confirmed exogenous timekeeper — which chronobiologically can be of significant importance for the control, synchronization, or,

♦ ***Static and Alternating Fields of Natural Origin***

under certain conditions, stimulation of endogenous body rhythms — **sferics with frequencies of 10 kHz and 27 kHz** (VLF sferics) are discussed as highly correlating indicators in connection with the triggering or worsening of meteorotropic symptom patterns or illnesses. A large-scale study conducted in Graz (southeastern Austria) (42), based on 2,800 emergency doctor callouts and 1,250 ambulance deployments, revealed **significant — partly even highly significant — correlations between the occurrence of 10 kHz impulses and the increase of specific types of emergencies, particularly general accident events (traffic accidents, workplace and sports accidents) and suicide attempts. Also included were general complaints such as sleep disturbances, high blood pressure, thromboses, and cramps.**

The occurrence of atmospherics in the 10 kHz range is significantly correlated with horizontal movements of warm air masses (overrunning processes) under stable or indifferent conditions in the troposphere (higher layers of the atmosphere) (27). In contrast, atmospherics with a frequency of 27 kHz are predominantly measured during vertically directed, that is, turbulent, movements of cold air. According to international literature (28), the incidence of these spheric concentrations is statistically associated with an increased occurrence of cerebral strokes. It should also be noted that atmospherics are capable of influencing species-specific behaviors in animals (29, 30, 31, 32).

Taken together, these findings show at least temporal coincidences, although they do not yet imply causal relationships with regard to changes in biological parameters. Atmospherics at the frequencies mentioned may possibly influence the course of the ‘internal clock’ in organisms and thereby affect the dynamics of metabolic processes.

The **Earth’s magnetic field** is influenced by solar events such as the solar wind and solar prominences, which cause geomagnetic storms; these are globally highly significantly correlated with an increased incidence of cerebral strokes. Additionally, attempts have been made — using the Kp index — to correlate

♦ ***Occurrence of 10 kHz impulses in nature  
and their impact on humans:  
Traffic accidents, workplace and sports accidents***

historical outbreaks of epidemics and wars with geomagnetic disturbances; however, the results are uncertain and remain largely of academic interest. The 11-year periodicity of **sunspot** maxima is associated with global climate changes, which can be demonstrated, for example, in the annual ring chronology of trees. Often, every 11th growth ring, i.e., the vessel part (xylem), is somewhat smaller compared to the other expansions. However, as shown in international literature, these observations are statistically not significant but can be identified as indicative correlations.

The Earth itself is a large magnet with a North and South Pole that do not coincide with the geographic poles. As a result, there is a magnetic field in the atmosphere, with maximum intensities at the poles and minimum intensities at the equator. The intensity at mid-latitudes is approximately 0.5 Gauss = 50  $\mu\text{T}$ . The origin of this field lies in the Earth's liquid iron-nickel core. Apart from local variations due to geological influences, the magnetic field undergoes daily and seasonal fluctuations. However, sudden, cosmic-induced strong disturbances can also occur, spreading over the entire Earth within minutes. These are effects of electromagnetic activities on the Sun, such as sunspots and solar prominences. Magnetic storms lead to the induction of currents, causing disruptions in radio communications, disturbances in power transmission (high-voltage lines and switching stations), and in undersea cables (e.g., transatlantic cables).

From a geomedical perspective, the previously mentioned disturbances of the Earth's magnetic field lead to the following events: a global, partly significant, and largely highly significant increase in angina pectoris (chest pain), heart and lung infarctions, strokes, and hypertensive crises. These correlations could be confirmed by correlation analyses thanks to the altruistic publication of a parameter characterizing solar-terrestrial relation-

♦ *The Earth's Magnetic Field and Its Advantage*

ships by the University of Göttingen (the Kp index as a measure of extraterrestrial disturbances of the Earth's magnetic field); however, causality has not (yet) been proven.

### **Ad 3. Air Ionization**

In the atmosphere, there not only exists an electric field, but the resulting electric current of a few  $10^{-15}$  A/cm<sup>2</sup> (depending on altitude) — the so-called vertical current — can also be measured. The charge carriers of this current are air ions and free electrons (dynamic equilibrium). These must be continuously regenerated; otherwise, recombination would quickly lead to the collapse of the entire atmospheric-electric circuit.

Fundamentally, ions are electrically positively or negatively charged atoms or molecules of the air components. Of practical significance are the negative oxygen ions. Their formation (33) is due to high-energy ionizing radiation from various sources, such as natural radioactivity, UV and X-ray radiation from the sun, cosmic radiation at high altitudes, and also from energy technology facilities (such as high-voltage power lines); furthermore, from thunderstorm activity, sandstorms, volcanic ash, and other weather phenomena. The radiation, due to its energy, knocks an electron off a neutral atom or molecule, leaving behind a positively charged gas molecule (ion) and a free electron. This electron attaches itself to a neutral molecule, forming a negative ion. Through electrostatic attraction, aggregates of similarly charged ions, known as clusters, are formed. Single ions and small clusters are referred to as small ions. Their density at ground level is several hundred up to about 1,000 per cubic meter in areas with clean air. **Small ions** can attach electrostatically to particles of various sizes and origins (including water droplets, aerosols, soot, dust, viruses, and microorganisms). This leads to the formation of less mobile and longer-lived medium and large ions.

#### **♦ *Air Ionization and Its Effect on Humans***

In particular, the **concentration of the latter serves as an indicator of air pollution**. In urbanized zones with increased emissions (and immissions), values of several hundred thousand up to millions per cubic centimeter of air can be measured (50).

In international literature, there are references to biotropic influences caused by **shifts in the density ratios between positive and negative atmospheric small ions** under specific weather conditions (34). This primarily concerns the **Alpine föhn, desert winds in Israel (chamsin) (34), as well as the mistral (southern France), tramontana (Umbria), sirocco (Mediterranean region)**, and others. Here, a predominance of positive small ions may possibly lead to a stress effect through increased secretion of catecholamines and cortisol, as well as increased synthesis of serotonin and other stress mediators.

When these changes are measured in a typical Central European climate region under characteristic weather conditions, only slight changes in the density ratios between positive and negative small ions are observed (about 10–15%), which are hardly sufficient to explain weather sensitivity.

If in enclosed spaces without air conditioning — where there is a constant deficit of negative small ions — an excess of negative ions is artificially generated using ion generators, approximately (100– $10^2$ ) times the outdoor value, this measure has exclusively positive health effects.

♦ ***Air Pollution:  
Too Few Negative Ions***

We were able to demonstrate this through the following investigations (35, 36, 37): the influence of artificially generated negative air ionization on the psychophysical activities of office workers, the influence of artificially generated negative ions on the performance and well-being of car drivers, as well as the use of ion generators for improving indoor air quality and as supportive therapy for respiratory diseases.

These studies were conducted using single-blind and double-blind procedures. They yielded both subjective and objective improvements in well-being, increased attention performance, and enhanced ability to concentrate. As an explanation, it can be suggested: In residential and workplace environments, as well as in means of transportation without natural ventilation, almost no negative small ions exist, whereas positive small ions (and large ions) are present in much higher densities compared to natural environmental conditions (38, 39). Artificially generated negative small ions produced by ion generators compensate for this deficit or even shift it toward an unnaturally high predominance of negative small ions. The surplus negative charge carriers produced compared to outdoor levels attract various anthropogenic pollutants such as dust, soot and tar particles, pollen, etc., due to their static charge. Large ions (clusters) are formed, which settle on statically charged or grounded surfaces (forming a layer of dirt). **Thus, the only scientifically undisputed effect of ions is an air-purifying effect indoors.**

Regarding the physiological effects of ions, particularly concerning the adjuvant therapy of respiratory diseases in the case of an excess of negative small ions, there are many theories in international literature. Therapeutically, the most favorable method proved to be electroaerosol therapy, where increased negative small ions are combined with aerosols (51, 48, 49).

♦ ***The only scientifically undisputed effect of ions is an air-purifying effect indoors.***



In summary (34, 40), it can be stated that a surplus of positive small ions is equivalent to distress.

Negative small ions, when applied in concentrations exceeding outdoor levels, produce a general calming effect.

According to publications that remain undisputed to this day, the following physiological explanations are proposed: Small ions, regardless of their polarity, enter the respiratory tract in a significantly reduced quantity. According to theoretical physical considerations (40), the remaining ions are neutralized there, meaning they acquire an opposite charge. This current could excite pulmonary receptors.

Studies by other authors suggest that, depending on the polarity and number of charge carriers, afferent neural pathways or direct humoral mechanisms stimulate or inhibit central nervous structures in their activity.

Another theory — also based on theoretical considerations and foundational practical studies (41) — is based on the idea that the charge carriers are integrated wherever there is a deficiency in the respiratory tract, or that they cause repolarization phenomena. The charges attach to the boundary membranes, whereby biological regulatory processes may be exogenously influenced in their programmed course.

- ♦ ***Negative small ions, when applied in concentrations exceeding natural outdoor levels, produce a general calming effect***

## Ad 4. Magnetic Fields from Artificial Sources

### Magnetic Field Therapy

#### “Magnetosmog”

#### 4.1. Human Studies

Magnetic fields have been used to treat various illnesses since ancient times. Even Egyptian priests made use of this method; Hippocrates, Pedanius Dioscorides, and Claudius Galenus — renowned medical practitioners of antiquity — used magnetic fields for the benefit of their patients and reported medical indications that, in essence, remain unchanged to this day. The often-cited 16th-century physician Paracelsus applied magnetic fields in his therapies more frequently than had been done previously. In the 19th and 20th centuries, intensive efforts began to objectively evaluate the effects of magnetic fields on biological systems and to investigate their mechanisms of action.

### Therapy with Static Magnetic Fields

In practice, a distinction must be made between static magnetic fields and pulsed magnetic fields. Static fields were formerly used therapeutically in the form of lodestones and horseshoe magnets. Recent research into the application of static magnetic fields with alternating polarity has enabled the development of magnetic foils that can generate magnetic flux densities in a form that is comfortable for patients (4). The self-adhesive **magnetic foil** with alternating polarity consists of a plastic sheet with a high content of ferromagnetic substances. The foil is magnetized in strips, with the polarity alternating in each narrow strip. This results in the magnetic field having a strong gradient. It decreases from approximately 50 mT at the surface of

♦ *Magnetic Field Basics in Humans  
with Static Magnetic Fields“*

the foil to about 50  $\mu\text{T}$  at a distance of 7 mm. Foils measuring  $60 \times 100$  mm or strips 20 mm wide are used. Magnetic foils are highly versatile in their applications. They are used with a high success rate to treat muscle tension, circulatory disorders, hematomas, swellings, lumbago and sciatica, rheumatic complaints, problematic scars and keloid scars, as well as pain conditions of various origins (3).

### **Therapy with Magnetic Pulse Fields Greater Than 0.5 mT**

Magnetic pulse fields with magnetic flux densities between 0.5 and 10 mT are also successfully used in treating diseases of the musculoskeletal system (4).

Specifically, this includes the following indications (5):

**1. Spinal disorders**, such as chronic, inflammatory, degenerative, and age-related processes of the vertebrae involving the intervertebral discs. Therapy: 3–8 mT increasing, 2–50 Hz, 15–30 minutes. Initially 1–2 times daily (for 10 days), then 1–2 times per week. Total treatment duration: several weeks to months. Application is carried out using a coil.

### **2. Knee and hip joint disorders**

Acutely inflammatory joint diseases

- a) Therapy: 2–3 mT, 5 Hz, 10–15 minutes. Initially daily treatment (7 days), then 2–3 times per week for a total duration of 3–4 weeks. Application is carried out using a coil.
- b) Osteoarthritis of the knee and hip joints Therapy initially: 4 mT, 10–15 Hz, 15 minutes, increasing to 10 mT, 50 Hz, up to 30 minutes. Treatment begins with daily sessions (for 2 weeks), followed by 2–3 times per week over a total period of 4–16 weeks. Application is carried out using a coil.

♦ ***Therapy with magnetic pulse fields greater than 0.5 mT:  
Spinal disorders, knee and hip joint disorders***

### **3. Bone Healing Disorders and Bone Fractures**

This primarily refers to the follow-up treatment of complicated fractures after initial care, as well as the rehabilitation of surgically treated fractures, e.g., with nails or screws. Furthermore, conditions such as Sudeck's disease, pseudarthroses, poorly healing fractures, and loosening of endoprostheses can be positively influenced. Therapy is performed with 6–10 mT, 25–30 Hz, and for 30–60 minutes. Treatment takes place daily for 10 days, then 2–3 times weekly for 4–6 weeks.

### **Therapy with Magnetic Pulse Fields Below 0.5 mT**

Here we refer to our own study results (6), obtained through the application of 4 Hz against sleep disorders, 10 Hz against weather sensitivity, and 15 Hz against symptoms of the rheumatic spectrum. The selected frequencies correspond to the main frequency ranges of the electroencephalogram (EEG): 3–7 Hz roughly match the theta rhythm (deep sleep), 8–12 Hz the alpha rhythm (rest), and 13–25 Hz the beta rhythm (activity) of brain waves.

The battery-powered magnetic field mini-generator, about the size of a matchbox, was fixed to the selected repetition frequency with a pulse duration of 1 ms. The magnetic induction at the device surface was about 500  $\mu$ T (peak value). Subjects were instructed to wear the device during application at a maximum distance of 80 cm, preferably as close to the body as possible depending on the situation. For adjunctive treatment of sleep disorders, the devices were to be used during the night by placing them under or next to the pillow. For meteorotropic complaints, they were to be worn during the day in a skirt, coat, or blouse pocket. For rheumatic complaints, depending on individual needs, the devices were to be used close to the body either during the day or night — or day and night as previously described.

- ♦ ***Bone healing disorders and fractures***
- ♦ ***Therapy with magnetic pulse fields below 0.5 mT***

The overall result obtained in the double-blind study turned out to be highly satisfactory. Already after two weeks of application, success rates could be recorded for all indications that were in part statistically significant, and in part highly significant, when compared to the placebo group, in terms of a reduction in patient suffering.

### RESULTS AT 4 Hz Indication “Sleep Disorders”

Examination	Device	Total N	Improved N	Improved %	Not Improved N	Not Improved %	Chi <sup>2</sup>
1st exam (after 2 weeks)	active	23	17	78	5	22	5,37
	placebo	28	13	46	15	54	significant
2nd exam (after 6 weeks)	active	23	19	83	4	17	8,37
	placebo	28	12	43	16	57	highly significant

### RESULTS AT 10 Hz Indication “Weather Sensitivity”

Examination	Device	Total N	Improved N	Improved %	Not Improved N	Not Improved %	Chi <sup>2</sup>
1st exam (after 2 weeks)	active	38	21	55	17	45	7,48
	placebo	37	9	24	28	76	highly sig- nificant
2nd exam (after 6 weeks)	active	38	71	11	29	29	14,54
	placebo	37	10	27	27	73	very highly significant

- ♦ **Results at 4 Hz – Indication: Sleep Disorders**
- ♦ **Results at 10 Hz – Indication: Weather Sensitivity**

### RESULTS AT 15 Hz

#### Indication “Chronic Rheumatism”

Examination	Device	Total N	Improved N	Improved %	Not Improved N	Not Improved %	Chi <sup>2</sup>
1st exam (after 2 weeks)	active	19	16	84	3	16	6,00
	placebo	10	4	40	6	60	significant
2nd exam (after 6 weeks)	active	19	17	89	2	10	8,03
	placebo	10	4	40	6	60	very significant

In addition, after another 4 weeks of application of these low-intensity pulsed magnetic fields, further statistically relevant improvements in both subjective and objective well-being were observed. This also applies to chronic rheumatic complaints.

**Low-intensity pulsed magnetic fields can also be successfully used as adjunctive therapy in severely polytraumatized patients.** Consequences of polytraumatic injuries include disturbances in the coagulation system (formation of blood clots, thromboembolism or fat embolism, disseminated intravascular coagulation, and/or bacterial-toxic damage). The subsequent life-saving centralization of circulation results in the classic problem of reduced perfusion and microcirculation in the periphery. Depending on the duration of the reduced perfusion and the hypoxia tolerance, irreversible damage can occur in the affected areas due to hypoxia and hypoxemia.

**With regard to the regeneration of polytraumatized patients, several stages of trauma must be distinguished:**

- ♦ **Results at 15 Hz**  
**Indication: Chronic Rheumatism**

**Stage 1:** Corresponds to moderate injuries without signs of hemorrhagic shock. The partial pressure of oxygen is within the normal range of 10.00–13.33 kilopascals (kPa).

**Stage 2:** This involves more severe lesions; however, the person is not in immediate life-threatening danger. Symptoms of compensatory hemorrhagic shock are already apparent, along with a simultaneous loss of about 25% of the blood volume. The partial pressure of oxygen is reduced to as low as 8.00 kPa.

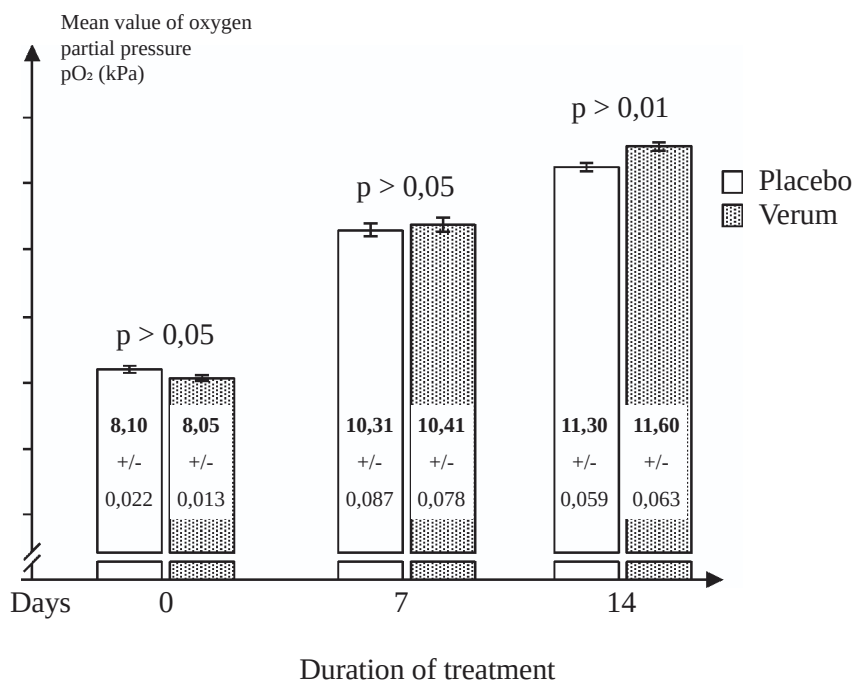
**Stage 3:** The injured person is in acute life-threatening condition. Blood loss amounts to at least half of the total blood volume. A severe hypovolemic shock near the limits of physiological compensation is present. The partial pressure of oxygen is below 8.00 kPa.

The aim of this work was to preliminarily assess, based on findings in the literature (7, 8), the efficiency of pulsed magnetic fields as an adjunct to conventional rehabilitation measures in polytraumatized patients whose baseline partial pressure of oxygen was just above 8.00 kPa, in the context of a pilot study. Although there are several reasons to view the results of other researchers with caution, the present study was conducted without reliance on further supporting literature.

In 24 polytraumatized male subjects, continuous magnetic field therapy was administered as an adjunct treatment after initial surgical care:  $f_{\text{rep}} = 24$  Hz square wave,  $B_{\text{EFF}} = 240 \mu\text{T}$ . Oxygen partial pressure was measured at admission, and again 7 and 14 days after the start of treatment. As a comparison, 24 placebo-treated male controls of similar constitution were assessed at the same time points. The patients already belonged almost entirely to the most severely injured category (on a 3-stage scale).

♦ ***Double-blind study with 48 male subjects***

The partial pressure of oxygen had dropped to as low as 8.00 kPa. **After two weeks of testing, a highly significant increase in oxygen partial pressure was observed in the patients treated with magnetic fields.**



Only a few confirmed and several hypothetical mechanisms of interaction between magnetic alternating fields and biological tissue are currently recognized.

**Low-frequency magnetic fields induce currents in the exposed tissue, which flow predominantly in the intercellular space.** The induced current densities increase linearly with the length of the eddy current path and with frequency; at a mains frequency of 50 Hz, action potentials can only be triggered — under the most unfavorable conditions — above 1 mT, which does not apply to the field strengths used here ( $B_{\text{EFF}} = 8.72 \mu\text{T}$ ).

♦ ***Magnetic Field Basic Studies on Humans on Oxygen Partial Pressure***



**The other two recognized interaction mechanisms are the Hall effect and the magnetohydrodynamic effect.** These occur with moving charge carriers (blood, diffusion processes, and ion currents). Effects on the (sub)cellular level are still under discussion and cannot yet be conclusively assessed (changes in membrane permeability for various ions, window effects regarding frequency and field strength, cyclotron resonance).

Among the hypothetical mechanisms of interaction, the following are listed taxatively (8): influence on para- and diamagnetic molecules and radicals, biological superconducting structures (Josephson effect), nuclear spin and electron spin resonance, quantum mechanical processes, interaction with transient paramagnetic free radicals, alteration of angles in hydrogen bonding.

According to some studies (8), blood circulation in tissue is significantly improved by exposure to a low-frequency alternating magnetic field, which was demonstrated using non-contact thermographic methods. However, there are also contrary findings reported by other authors (8, 9). Warnke (7, 8) and Wagner and Gruber (11) describe a markedly increased oxygen supply in damaged tissue.

**Theoretically conceivable is a force effect caused by the magnetic field, resulting in the accumulation of ions at the cell membrane, which could lead to increased oxygen utilization and energy turnover (rise in ATP) (10).** Based on the results from this initial study, it can be inferred that such magnetic field therapy could evidently contribute to faster rehabilitation of polytraumatized patients in postoperative treatment. Admittedly, indepen-

- ♦ ***The other two recognized interaction mechanisms are the Hall effect and the magnetohydrodynamic effect.***

dent confirmations from research institutions are still lacking in this regard, but the encouraging results justify appropriate follow-up investigations. However, this study did not yet take into account all the potential factors that can influence **oxygen partial pressure**: In gas transport in the blood, changes in pH must be considered (Bohr effect); in acidosis, hemoglobin's binding capacity decreases, while in alkalosis it increases. There is also an inversely proportional dependency on temperature. Other relevant parameters include: hemoglobin deficiency, blood loss, hypoxia, respiratory impairment (ventilation, diffusion, and perfusion disorders), impairments of the respiratory musculature (injuries), and dysfunctions of the respiratory center.

Furthermore, we can report from our own experience — which aligns with international literature — on the use of the previously mentioned magnetic field mini-device in the treatment of musculoskeletal disorders.

Despite (a)periodically published reports of cancers in children and adults that are associated with exposure to power-frequency magnetic fields (high-voltage lines, household wiring) (12) and the literature cited therein (13), there are still physicians who support magnetic field treatment.

In this context, the effectiveness of stationary magnetic field therapy devices — with their widely variable field parameters, but certainly high field strengths — for the (adjunctive) treatment of bone fracture healing disorders and other diseases of the musculoskeletal system remains a topic of current direct or indirect discussion (9, 14, 15).

♦ ***Magnetic Field Basic Studies on Humans:  
Faster rehabilitation of polytraumatized patients***

From a biomedical and technical perspective, the critically to negatively tinged debate surrounding results obtained with battery-powered small devices — featuring significantly lower field strengths compared to stationary magnetic field therapy systems (typically by a factor of 100) — must be viewed as even more controversial. If one follows the by no means uniform classifications of field strengths, these are, by common consensus, to be regarded as ‘weak’ (16).

A group (8 men, 8 women) was treated almost exclusively with a weakly pulsed magnetic field device for 17 characteristic diseases of the musculoskeletal system.

All patients (average age 53.1 years) were treated over a period ranging from 11 to 132 days without the use of additional analgesics. Magnetic field application was performed as close as possible to the site of pain. Frequencies and field strengths were individually set between 2 and 24 Hz, and 2.52 to 8.72  $\mu\text{T}$  respectively, using a rectangular pulse waveform. Duration of use ranged from two 4-hour sessions per week to continuous application.

Treatment success was classified by a physician using the 10-point Dole scale into the categories ‘improved’ and ‘not improved’. **Evaluation using the nonparametric test methods Sequential Range Test and Maximum Test showed a significant and, in some cases, highly significant reduction in pain. The  $\text{Chi}^2$  test, used as a parametric method, demonstrated a highly significant reduction in pain.**

♦ ***Further study with 8 men and 8 women:  
Diseases of the musculoskeletal system***

Pat. No.	Symp. No.	Final Medical Diagnosis	Sex	Age	Result	Delta Dole (Start End)
1	1	Omarthrosis	w	73	very good	8
2	2	Lupus erythematosus	w	29	very good	7
3	3	Lower leg fracture, delayed callus formation	m	36	good	7
4	4	Omarthrosis and rotator cuff injury	m	54	no effect	1
5	5	Chronic cervical syndrome due to disc protrusion C4–C6	m	50	very good	9
6	6	Omarthrosis	m	59	very good	8
7	7	Post-inflammatory Sudeck's syndrome (left midfoot)	w	33	satisfactory	5
8	8	Chronic cervical syndrome after multiple disc surgeries	m	62	very good (obj.), good (subj.)	8
9	9	Omarthrosis	w	74	very good	9
10	10	Epicondylitis humeri ulnaris right	w	52	very good	9
11	11	Epicondylitis radialis (tennis elbow)	m	52	very good	10
12	12	Primary chronic polyarthritis (flares in fingers, hands, knees)	w	44	no effect	0
13	13	Femoropatellar chondropathy right (cartilage damage to patella and femoral condyle)	w	66	very good	8
14	14	Degenerative omarthrosis	w	58	very good (obj.), good (subj.)	8
15	15	Gonarthrosis left	m	57	good	9
16	16	Post-traumatic gonarthrosis	m	51	good	8
16	17	Epicondylitis radialis	m	51	very good	9

♦ *Magnetic Field Basic Studies on Humans, Table*

## Statistical Evaluation of Therapeutic Success

### 1. Nonparametric Evaluation Methods

#### a. Sequential Range Test:

The thresholds for significance ( $p < 0.05$ ) were clearly exceeded, so that improvement was proven at this level.

#### b. Maximum Test:

Here, the positive (and negative) differences between the Dole scale values (start of treatment minus end of treatment) were compared. Extremely significant differences ( $p < 0.001$ ) were found, indicating pain relief through magnetic field applications.

### 2. Parametric Test

One-dimensional  $\chi^2$  test with one degree of freedom

	“improved”	“not improved”
Observed:	15	2
	$\chi^2 = 9.94;$	$N = 17$

This result, consistent with the nonparametric methods, proved to be highly significant ( $p < 0.01$ ).

The focus of another study was **to investigate to what extent magnetic field therapy, when used as an adjunct to conventional medical methods, might offer advantages in the rehabilitation of elderly patients with fractures near the hip joint. The evaluation parameter for this was the length of hospital stay (17).**

**Few injuries in geriatric patients have such fatal consequences as a fracture of the femoral neck.** Immediately afterward, well-known complications such as pulmonary embolism or pneumonia can arise, while later pseudarthroses and necrosis of the femoral head often occur.

### ♦ *Statistical evaluation of therapeutic success*

It is therefore very important to offer patients — especially those over the age of 60 who have suffered a femoral neck fracture — an optimized therapy with the goal of preventing both early and later complications.

When summarizing the results of this investigation, the following assessment emerges: Using the t-test (two-tailed), the differences in the average hospital stay of the patient groups from a regional trauma center were tested for significance. The study included men, women, and the total population (men and women combined), comparing the average hospital stay **without** adjunctive magnetic field therapy (1987–1989, all such patients) to that of all equivalent patients **with** adjunctive magnetic field therapy in the years 1990–1992 ( $B_{\text{EFF max}} = 8.72 \mu\text{T}$ ,  $f_{\text{REP}} = 24 \text{ Hz}$ , square pulses). The following case numbers were recorded:

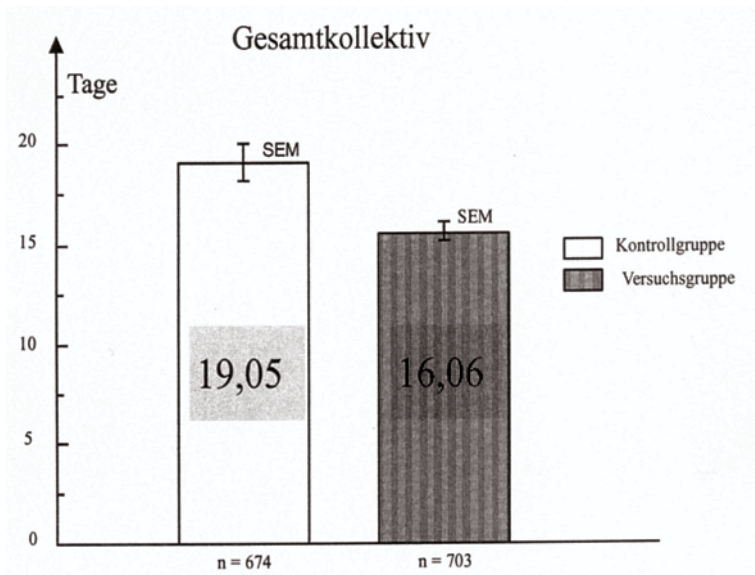
Control group (1987–1989): 435 women, 239 men (total 674 patients)

Experimental group (1990–1992): 500 women, 203 men (total 703 patients)

**Among women, adjunctive magnetic field application resulted in a significant ( $p < 0.05$ ) reduction of the average hospital stay from 19.59 to 16.21 days;** for men, where the case numbers were significantly lower, a trend-level reduction ( $0.10 < p < 0.05$ ) from an average of 18.05 to 15.70 hospital days was observed.

For the total group, a highly significant ( $p < 0.001$ ) reduction in hospital days was recorded, from an average of 19.05 to 16.06 (see figure on the following page).

♦ ***Magnetic Field Basic Studies on Humans  
from 1987–1992: total of 1,377 patients***



Extremely significant reduction  
( $p < 0,001$ )

It is undeniable that possible improvements in surgical techniques over the course of development are indirectly reflected in the study mentioned above. These and other cofactors, which were not directly included in the calculation, may have influenced the length of hospital stay — possibly even more strongly than the magnetic field exposure — by contributing to a reduction in hospitalization duration. **However, supportive magnetic field application reduces or eliminates pain in these cases;** furthermore, it can offer elderly patients better mobility and an improved quality of life. Experiences of other authors with magnetic field therapy in orthopedics (9, 18), as well as our own successes in other areas of rehabilitation (19), support our assumption that adjunctive magnetic field therapy using a battery-powered small device contributes causally to these reductions.

- ♦ ***Through supportive magnetic field application, pain is reduced or eliminated in these cases.***

## 4.2. Animal Studies

In animal studies that we consider particularly relevant (1, 2), researchers examined the extent to which magnetic fields may influence immunobiological responses (overview literature: (2)).

In the sparse international literature on the topic, it is reported that applying a low-frequency magnetic field of 5 mT to rats results in an increase in the primary immune response by four to five times compared to controls—after only 10 minutes of exposure. Even after just 2 minutes of exposure, an increase could still be measured using the plaque test. Exposure to magnetic alternating fields has also been associated with increased production of humoral factors from the thymus, as well as enhanced differentiation of thymus cells (2).

To gain further insights into the **degree of immunization**, a low-frequency magnetic field was applied over various exposure durations (1, 3, 7, and 21 days). After 7 days of exposure, **hemagglutination titers** (the test method is semi-quantitative, based on titer jumps) and **plaque counts** (this method was used to quantify antigen–antibody reactions for the first time) (52) were elevated in mice housed both in a magnetic field chamber shielded from atmospheric electricity and in a chamber not shielded from it, compared to controls. In several experimental runs, this increase could be verified as statistically significant.

The influence of a magnetic alternating field with a field strength of 1 mT, a frequency of 10 Hz, and Faraday shielding was also investigated in relation to an acute, artificially induced inflammation (1). The inflammation model used was the carrageenan-induced paw edema in rats. During the formation of the **carrageenan edema** in rats, several ‘**inflammatory mediators**’ are released.

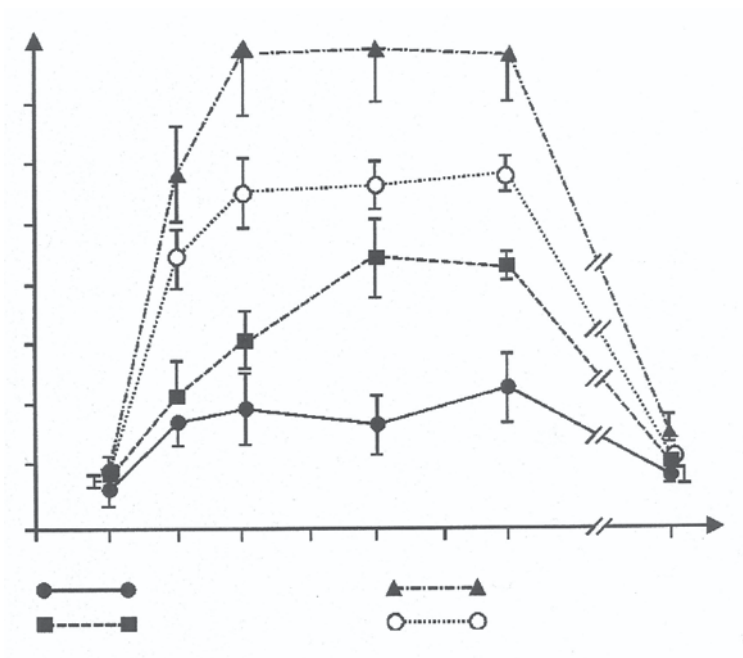
- ♦ ***Hemagglutination Titer Determination***
- ♦ ***Plaque Test***



These pro-inflammatory substances stimulate the biosynthesis of prostaglandins, which in turn amplify the effect of these substances.

**Rats exposed to the magnetic field for 3 hours, 7 days, and 21 days showed a time-dependent, significant inhibition of paw edema development compared to untreated controls.** The inhibitory effect of the magnetic field was significantly reduced when Faraday shielding was applied simultaneously.

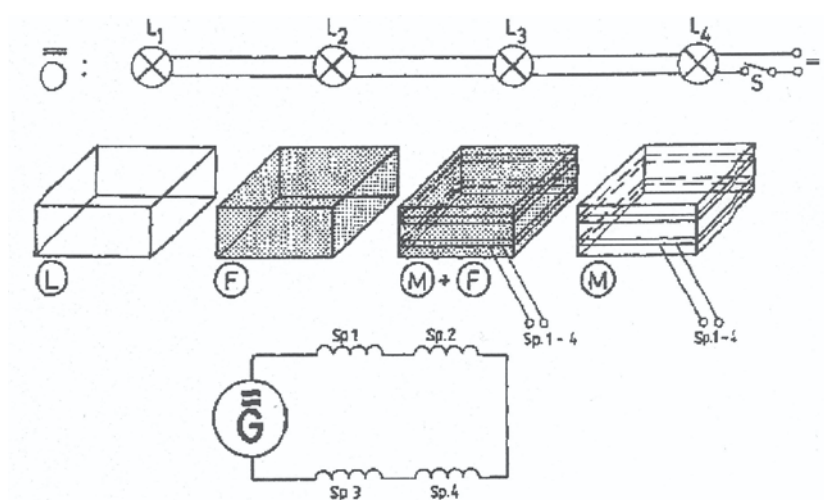
Influence of Different Electroclimates (21-Day Exposure) on the Development of Carrageenan-Induced Paw Edema in Young Rats (Volume Increase in Percent).  $n = 6$  each;  $\bar{X} \pm \text{S.E.M.}$



xxx =  $p < 0.005$ ; xx =  $p < 0.01$ ; x =  $p < 0.05$

♦ **Experiments with rats:**  
**Edema reduction**

After 21 days of development of the carrageenan-induced paw edema, a highly significant inhibition of edema formation was observed in the magnetic field without Faraday shielding, compared to untreated controls. A significant reduction in inflammation was also evident in the magnetic field within the Faraday cage. Statistically verifiable was the increase in edema development when the atmospheric electric field was shielded in the Faraday cage, beginning from the 4th hour.



Experimental setup:

$L_1$  to  $L_4$  = lamps;  $S$  = timer switch;  $L$  = control group under laboratory conditions;

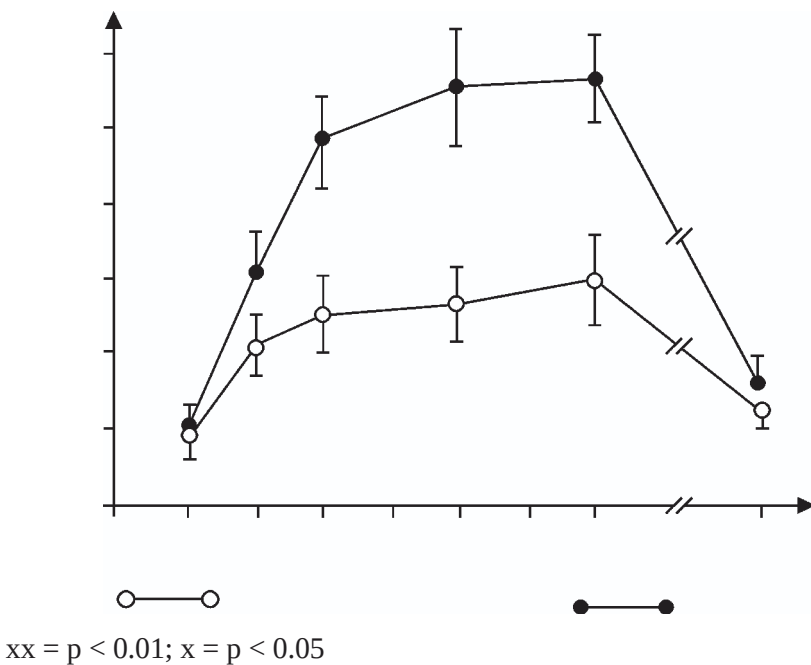
$F$  = Faraday cage;  $M$  = magnetic field;

$G$  = generator; Coils  $Sp. 1$  to  $Sp. 4$  = coils

This result was compared to the effect of the anti-inflammatory drug indomethacin, which is used as a standard in laboratory experiments (see graph on the following page). Based on extensive pharmacological data, it was shown that the cyclooxygenase inhibitor **indomethacin** partially reduced the development of paw edema significantly. This control experiment also served to validate the laboratory standard method.

♦ ***Magnetic Field Basic Studies in Animals  
Experimental Setup***

When comparing this trivial result — which today is used only for pharmacological demonstration experiments in laboratory courses — with the findings of the present magnetic field study on the 21st day after exposure, no statistically significant difference was found. However, a trend-level difference favoring the modulation of acute inflammation was observed. **This means that, at least in this animal study, the use of magnetic field therapy for the treatment of acute inflammation may be more effective than treatment with anti-inflammatory pharmaceuticals.**



♦ **Figure: Inhibition of carrageenan-induced paw edema in rats by 2 mg/kg oral indomethacin compared to controls (increase in volume in percent).  $n = 6$  each;  $\bar{x} \pm S.E.M.$**

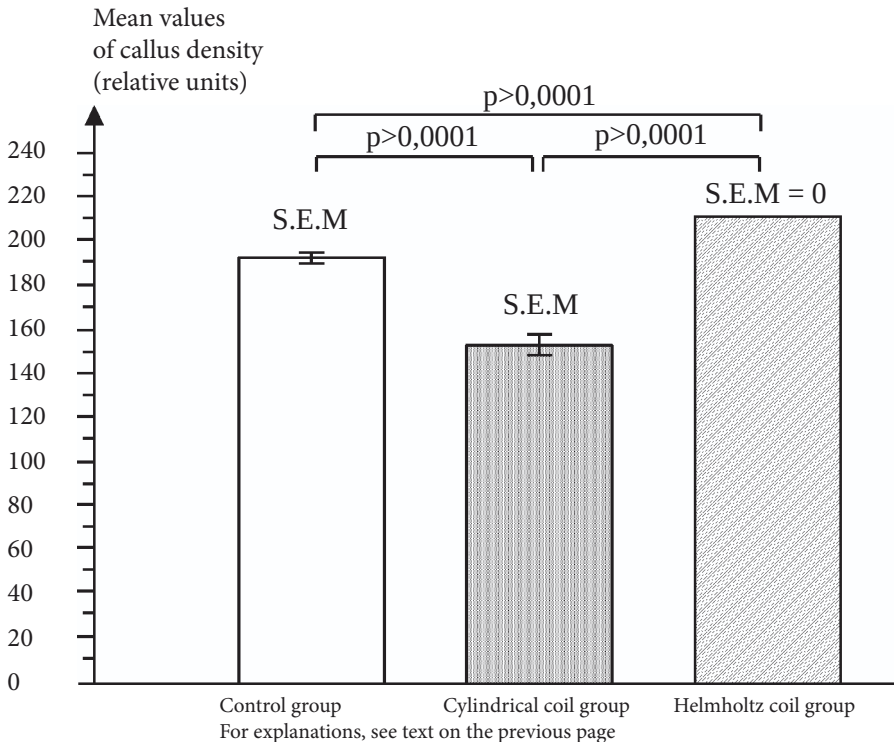
The purpose of another basic study was, on the one hand, to evaluate in young **white New Zealand rabbits** the progress of the extensively studied process of bone fracture healing (20, 21, 22, 23) at a frequency not previously used, and on the other hand, to examine the as yet uninvestigated field effects on changes in the biochemical blood parameters alkaline phosphatase and creatine kinase.

Although there is extensive literature on bone fracture healing in humans, it was appropriate — due to ethical considerations and the need for standardization — to initially evaluate these results and the novel parameters in a mammalian species.

Eight animals each were assigned to the following conditions (sham and verum exposure for 30 minutes per day at the same time): **a control cage without artificially generated magnetic fields; a “Helmholtz system” (horizontal field) and a cylindrical coil arrangement (vertical field), each with  $B_{\text{MAX}} = 50 \mu\text{T}$ ,  $f = 15.3 \text{ Hz}$  sine wave.** Prior to exposure, an artificial osteotomy of the femur in the right hind limb was performed under general anesthesia. After 31 days of field exposure, bone densities were measured via computed tomography, and the activities of alkaline phosphatase and creatine kinase were recorded preoperatively and after 19 and 31 days of exposure.

**In both coil configurations** (see illustration on the following page), **bone formation was significantly increased compared to the control group ( $p < 0.001$ );** more specifically, bone healing in the “Helmholtz coil arrangement” with a horizontal field was significantly more advanced ( $p < 0.001$ ) than in the cylindrical coil with a vertical field, which is attributed to the more homogeneous field.

♦ ***Magnetic Field Basic Study on Animals,  
New Zealand Rabbits***

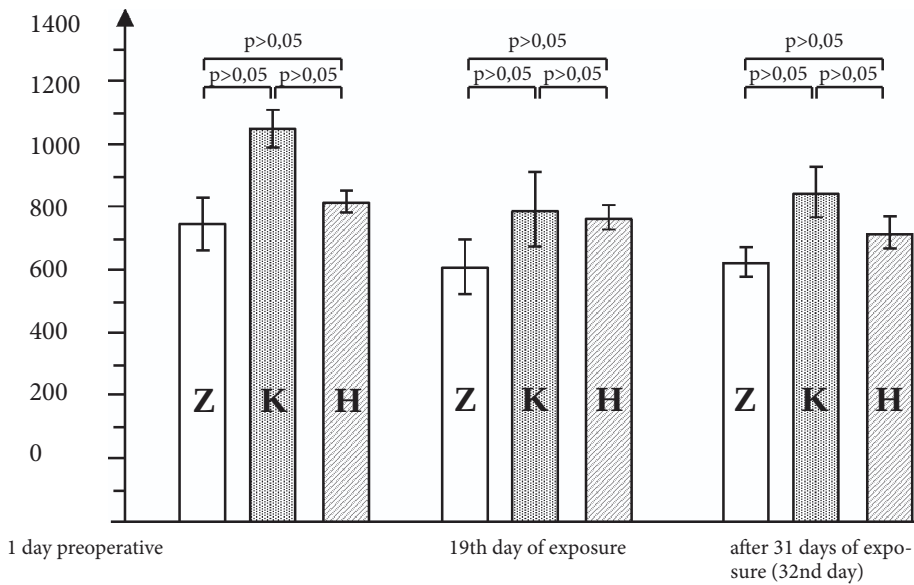


**With regard to alkaline phosphatase (AP), the following results were observed** (see figure on the following page):

In the cylindrical coil group, the average AP activity prior to the surgical procedure was significantly lower than in the control group. After 19 days of testing, no statistically significant differences were detected. **At the end of the experiment, significantly lower AP values were once again found in the cylindrical coil group. In the Helmholtz coil group, only immediately prior to the operation were significantly lower values observed ( $p < 0.01$ ); no statistically reliable changes were found at later time points compared to the controls.**

♦ **Statistics:**

***Mean value of callus formation increases significantly***



Z = Cylindrical coil group; K = Control group; H = Helmholtz coil group Mean values ( $\pm$  S.E.M.) of AP activity (serum) over the course of the experiment ( $T_{ref} = 25^\circ\text{C}$ ) (N = 8 per group)

**At no time were significant differences observed between the two coil configurations.**

For creatine kinase (CK), no statistically significant differences could be found at any measurement point in either test group; however, the parallel development of activity levels in the groups exposed to the magnetic field is noteworthy. **The results of the applied magnetic field therapy (15.3 Hz sine wave, maximum 50  $\mu\text{T}$  peak value, 31 days) in rabbits following artificial femoral osteotomy confirm, on the one hand, the generally positive reports in international literature on accelerated bone fracture healing in low-frequency magnetic fields, and on the other hand, they allow a distinction to be made between the two coil configurations (cylindrical coil and Helmholtz coil) or, more precisely, the respective field orientations.**

♦ ***Magnetic Field Basic Studies in Animals:  
Bone fracture healing increases significantly***

After exposure to the magnetic field, significantly increased bone densities ( $p < 0.001$ ) were observed at the end of the experiment. When differentiating between the two coil systems, the Helmholtz coil produced extremely significant increases in callus values ( $p < 0.0001$ ), which may be attributed to the more homogeneous field. In addition to this objective evaluation of callus formation based on CT scans, a subjective measure was used by analyzing X-ray images at the end of the experiment to assess the amount of callus. The corresponding Chi<sup>2</sup> tests showed a significant difference ( $p < 0.05$ ) in the overall evaluation across the three groups, **with detailed analysis by categories (“low”, “medium”, and “high” callus) indicating trend-level improvements in both magnetic field–treated groups compared to the control group.**

Looking at the **alkaline phosphatase results**, where it is known from human medicine (24) that maximum values occur between the 19th and 29th day after fractures of long bones, the cylindrical coil group showed significant reductions in AP activity compared to controls after a longer period of magnetic field exposure (31 days); this occurred despite CT-confirmed and radiologically proven accelerated callus formation due to increased osteoblast activity.

This significant effect could not be demonstrated in the Helmholtz coil group. Paradoxically, accelerated fracture healing in humans is typically characterized by significant increases in AP compared to normal recovery. Despite the injuries being considered severe for rabbits, lower AP activity levels were found in all experimental groups at both postoperative time points. The trends among the three groups across the three examination dates were internally inconsistent: only in the Helmholtz coil group was there a continuous decline in activity, whereas in the other two cohorts a relative activity minimum was observed after 19 days of magnetic field exposure, which cannot therefore be further interpreted.

- ♦ ***After exposure to the magnetic field, significantly increased bone densities ( $p < 0.001$ ) were observed at the end of the experiment.***

In particular, we currently have no conclusive explanation for the fact that the values lie below the preoperative baseline. In human medicine, AP activity levels remain (non-significantly) elevated even 8 weeks after a fracture compared to the value observed within one week after the traumatic event.

With regard to creatine kinase activity, no statistically significant differences were found at any time point; however, after 19 days of magnetic field exposure in the cylindrical coil group, a decrease at trend level in CK levels was observed. This may be interpreted as an earlier stabilization of pre-ruptured muscle cells and should be seen as a stimulus for further investigations.



## Discussion on the Mechanisms of Action of Magnetic Field Therapies

According to the current preliminary state of knowledge, the functional influence of the organism by weak magnetic fields can be explained as follows:

If pulsed magnetic fields with magnetic flux densities of about 1–10 mT are involved, then their **therapeutic application is certainly justified by the fact that ions in a magnetic field experience deflection depending on their charge**. If this occurs within a confined space — such as in the area of a cell — this also results in the development of a so-called Hall voltage. Due to the physiological intra- and extracellular voltage caused by ion exchange in every cell — and which is decisive for cellular activity — it seems logical that the magnetic field, even without a threshold, must have an influence on this parameter, thereby directly affecting metabolic processes, i.e., cellular activity.

However, if one considers significantly weaker magnetic fields in the range of 10–500  $\mu\text{T}$ , the human organism still yields responses. **Here, in addition to charge displacements at the cell membranes, the involvement of other regulatory mechanisms must be assumed.**

In this regard, the vegetative basic system according to Pischinger may represent a key factor, with the humoral system in particular possibly acting as a detector for magnetic field influences.

**When considering the humoral blood milieu as a detector for exogenous (external) influencing factors, one should be aware of the fact that every**

♦ *Prof. Dr. Gerald Fischer, Ing. Wolfgang Kobinger,  
University of Graz*

**autonomic nerve terminates only in the interstitial fluid, and that there is no direct connection between the nerve and the organ cell.** The interstitial fluid always lies in between.

It has been shown that this fluid is capable of active reactions. In this context, it should be noted that the human organism consists largely of water. The interstitial fluid also consists of water and contains regulatory circuits. Any signal from an autonomic nerve is transmitted through the interstitium and, depending on changes in regulatory behavior, can be either inhibited or intensified specifically through the influence of a magnetic field. A deviating information potential further influences the conduction of stimuli through excitation of nerve fibers of varying thickness.

In summary, the following physically proven and relevant interactions between low-frequency magnetic fields and biological objects (humans and animals) can be listed (7):

1. Induction of eddy currents, which in turn cause intracorporal electric field strengths,
2. Hall effect, through which ion currents are deflected,
3. Magnetohydrodynamic effects in moving blood volumes,
- 4. Influence on paramagnetic and diamagnetic molecules.**

In addition, the literature (7) also describes other, partly hypothetical mechanisms of action.

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**Chapter 26**

**THE GLOBAL  
RESEARCH PROJECT**



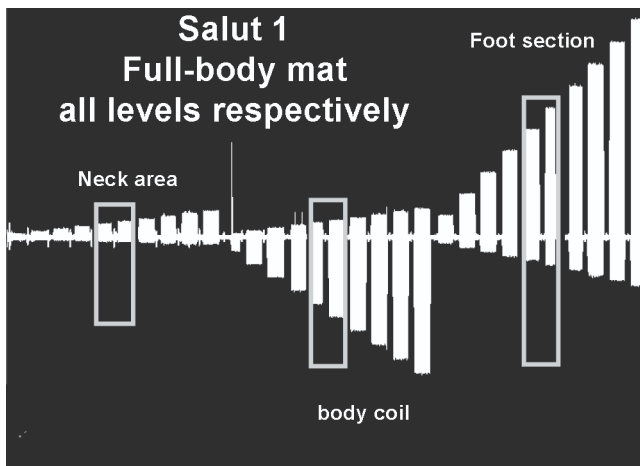




## The Global Research Project

The system launched under the name — Salutfi — in mid-1994 already contained all the specific features of the patented Quantronik signal described in this book. Following approval under the Medical Devices Ordinance, we began global research and clinical testing with this device.

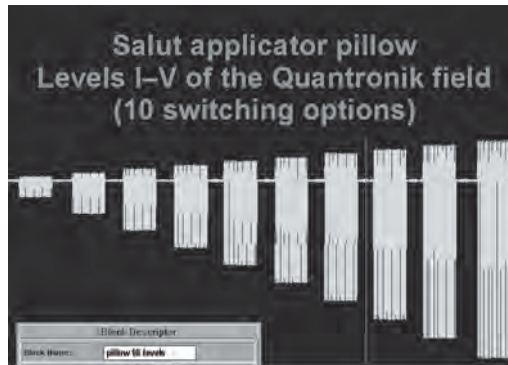
The first system consisted of a control unit, a mat applicator, and a **pillow applicator**. The **mat applicator** contained, distributed across its entire length, one emitting coil pair per surface sector in three sectors, each generating differently strong signals adapted to the body.



There were 10 possible intensity levels for each of the 3 coil pairs in the mat applicator of our first device. The recommended standard setting for home users is outlined with a rectangle.

♦ *The first Quantronik device entered the testing phase in 1994*

The **pillow applicator** is placed on or under the body area to be treated.



We began by recommending that a treatment — which should be performed no more than 3 times per day — should last 8 minutes. During these 8 minutes, the polarity of the impulses is switched four times. This polarity reversal is additionally indicated by the alternating arrow display on the scale. Among other things, this serves to avoid a potential habituation effect by the body. Thousands of such devices were distributed with these basic recommendations to research institutes, universities, physicians, alternative practitioners, clinics, athletes, and even laypersons. We wanted to gather experience.



Prof. Dr. Robert O. Becker,  
Upstate Medical Center of the New  
York State University,  
father of electrobiology and thus  
one of the pioneers of Quantronik,  
tested our first device. We, too, are  
calling for a Nobel Prize for Profes-  
sor Becker!

- ♦ ***Systematic polarity  
switching prevents habituation effects***

The Goal: To verify all previously predicted effects of Quantronik quantum therapy and to continue optimizing the procedure. These were the most important therapeutic effects to be tested:

**Antithrombotic effect (prevention of rouleaux formation)**

**Promotion of detoxification**

**Normalization of fatty acids (cf. Wuppertal study)**

**Healing of gangrene**

**Reduction of hematomas**

**Hydrocorticoid production**

**Improvement of insulin secretion via calcium effect**

**Bone fracture healing**

**Stabilization of the circulatory system**

**Lysozyme activation**

**Macrophage activation via calcium cascade**

**Migraine**

**Ankylosing spondylitis**

**Sudeck's atrophy**

**Reduction of edema**

**Parameter dependency compared to pharmaceuticals**

**Parameter dependency on blood acidosis status**

**Parameter dependency on vitamin B deficiency**

**Treatment of peripheral arterial disease**

**Regeneration**

**Intermittent claudication**

**Acceleration of stress reduction**

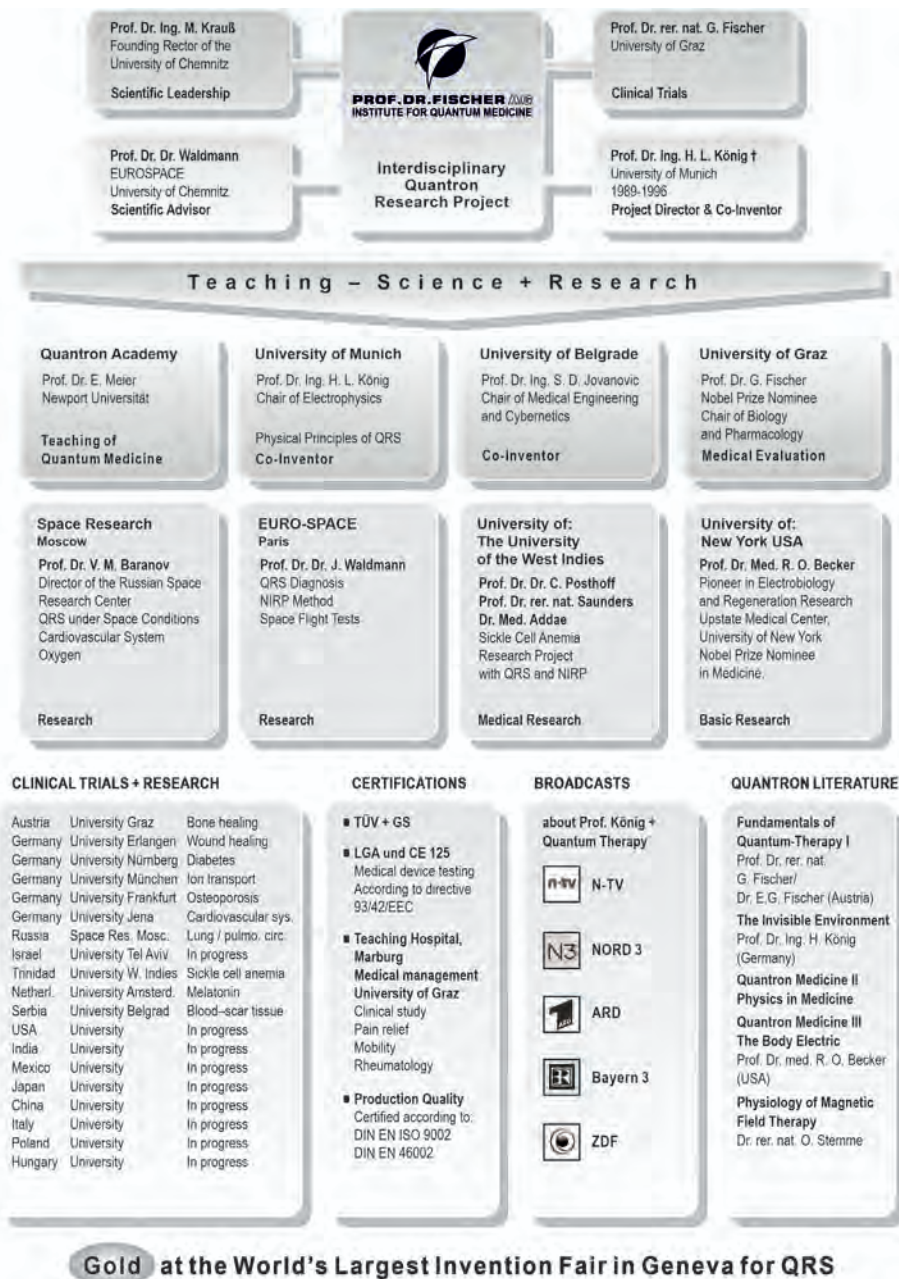
**Venous leg ulcers (Ulcus cruris)**

**Promotion of digestion**

**Wound healing**

An overview of the scope of this project is provided on the next page, which shows the current structure of our research pyramid.

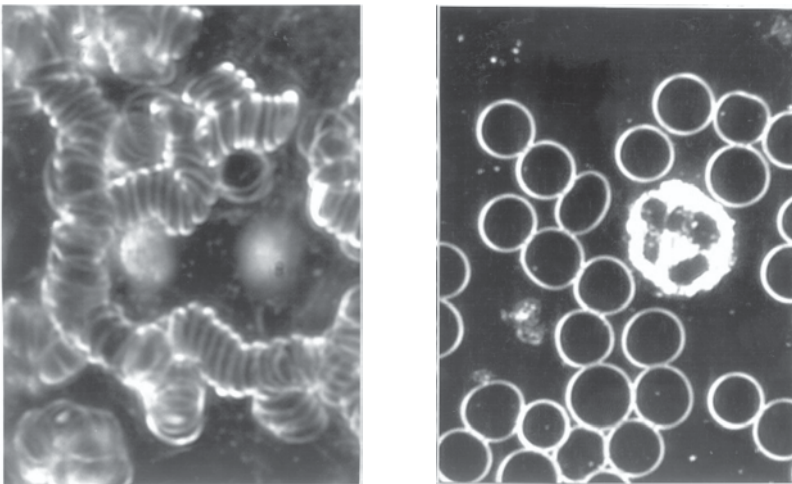
♦ *The most important therapeutic fields of quantum therapy*



The small device quickly revealed itself to be a therapeutic giant. We had indeed succeeded in moving traditional magnetic field therapy a tremendous step forward.

You can see the quantum leap to quantum therapy in the following images of a 72-year-old female patient undergoing QRS therapy. She suffered from peripheral arterial occlusive disease. The image on the left shows her blood diagnostics before, the one on the right after the therapy.

The previously occurring “rouleaux formation” of red blood cells with partial



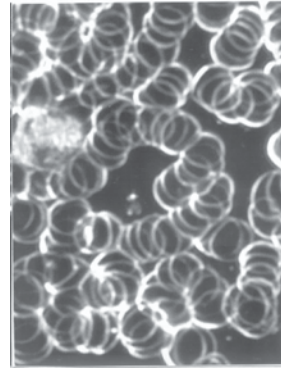
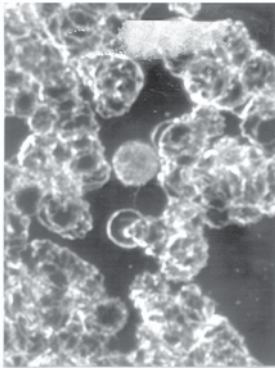
thrombosis had dissolved. The erythrocytes are once again visible individually and clearly distinguishable from each other. It is evident to anyone that this blood is once again mobile and can supply the cells properly. Therapy was administered using the QRS system Salut 1 at level 8 under the supervision of Prof. Dr. Dr. habil. J. Waldmann, Prof. Dr.-Ing. habil. M. Krauss, and Chief Physician Dr. med. G. Grohmann.

The blood volume, measured non-invasively using the NIRP method, also showed positive results in this patient.

It increased immediately at the start of therapy (maximum 26%).

♦ ***Rouleaux formation and thrombosis dissolved***

This was no one-off success. The same researchers also reported on a 57-year-old patient with angina pectoris. The left image shows the condition before QRS therapy: severely thrombosed erythrocytes with possible spiculations, accompanied by a significant oxygen deficit. The right image from the dark-field blood analysis shows a clear reduction in thrombosis, accompanied by a decrease in the oxygen deficit.



This patient was also treated with the Salut device (level 5). At the same time, a reduction in pulse rate during therapy was observed, from 75 to 70 bpm, with an approximately unchanged (and still too low) heart rate variability reading, recorded using the non-invasive NIRP method.

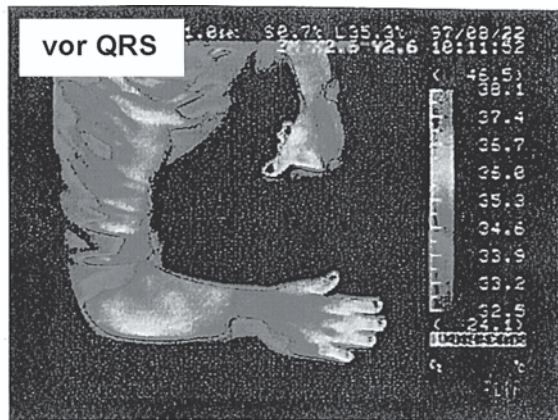
Under this therapy, an increase in blood volume at the measurement point (fingertip) was also observed, indicating vasodilation, again recorded with the non-invasive NIRP method.

Waldmann/Krau and Grohmann also carried out thermographic documentation of changes in skin surface temperature using the Salut device. The image opposite shows a 43-year-old patient with low blood pressure who was treated with the small applicator at level 5.

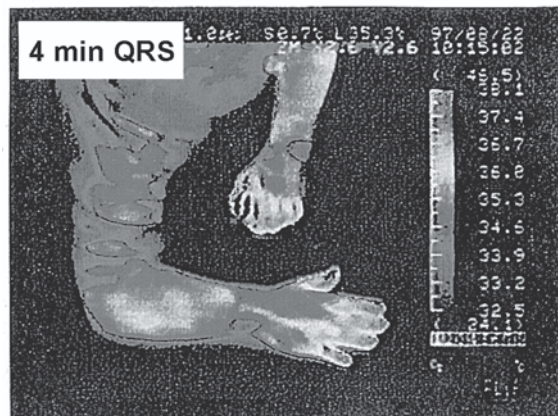
♦ ***Reduction of oxygen deficit***



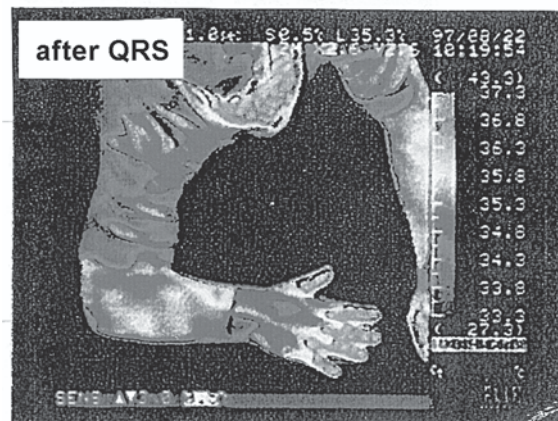
The thermographic images show a peripheral temperature increase before and after QRS therapy, indicating improved circulation — i.e., induced vasodilation — by approximately 1.6 degrees Celsius.



The systolic blood pressure changed under QRS therapy from 100 to 118, the diastolic from 58 to 72.



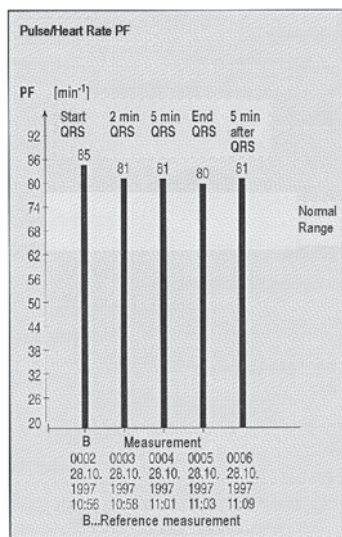
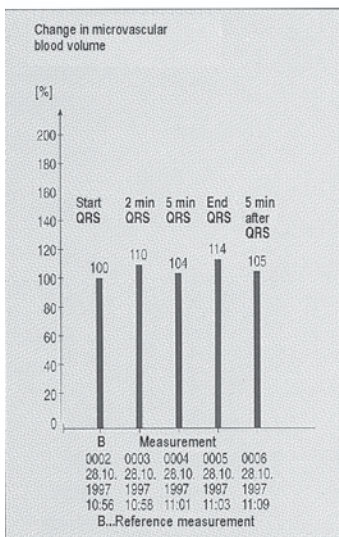
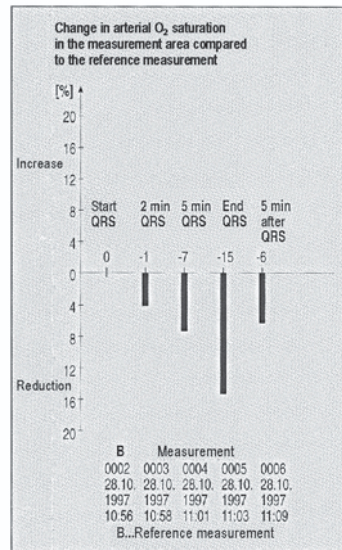
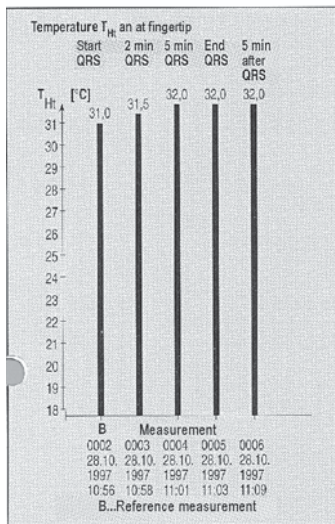
Through the increase in peripheral blood volume during therapy, the oxygen supply increases, and the transport of essential energy carriers for the cell is improved.



- ♦ **Improved circulation, increased oxygen supply, and transport of essential energy carriers for the cells**



The positive changes in circulatory parameters during quantum therapy were also documented by Kafka, Waldmann, and Krauß in a 55-year-old patient.



♦ *Positive change in circulatory parameters*

The researchers provided the following summary comparison of the therapy results:

Increase in temperature at both measurement sites as an indication of improved circulation under QRS therapy (level 5).

Reduction in pulse/heart rate by 4 beats per minute.

Increase in microvascular blood volume at the fingertip measurement site by up to 14% as a measure of the vasodilation induced by QRS.

Reduction in arterial O<sub>2</sub> saturation at the measurement site as an apparent consequence of the oxidation of nitric oxide (NO) during therapy, which very likely acts as the most important endogenous mediator of vasodilation. NO not only relaxes blood vessels, it also inhibits platelet aggregation and adhesion, reduces the adhesion of leukocytes to the vascular wall, and slows the proliferation of smooth vascular muscle cells. NO can therefore be regarded as a protective factor in vascular systems.

A Nobel Prize has already been awarded for the discovery of the role of NO gas in vasodilation! Now, with the QRS system, we had found a way to make use of this gas within the framework of the already described calcium cascade. We are happy to keep waiting for the Nobel Prize. The gold medal at the world's largest inventors' fair in Geneva — we already received that in 1998.

And doctors from all over Europe have joined our project.



♦ ***Summary of the therapy results by  
Professors Kafka and Waldmann, and Dr. med. Grohmann***



## Chapter 27

# QUANTRONIK

## Physicians and Users Report

- ♦ *Reports from users, alternative practitioners, physicians, sports clubs, professors*



## Chapter 27

## Quantronik Physicians and Users Report

In cases where the names in the following testimonials are abbreviated or encoded for privacy reasons, the author and publisher kindly ask for your understanding.

All names and addresses are known to the publisher. Should a reader have specific questions for one of the listed users, please send a stamped envelope along with your inquiry to the publisher, who will gladly forward it if possible. Of course, you can also send an email to: [dr.fischer@quantentherapie.de](mailto:dr.fischer@quantentherapie.de)

**Even when physicians and other therapists are cited as users in the following statements, or if patient self-therapy for diseases is reported, this is done with the explicit permission of the individuals involved, but outside the explicit guidance and liability of the manufacturer of these devices. Despite the impressive reports, current legal regulations leave no other option here!**

**The author and publisher therefore again explicitly warn against any self-therapy without medical supervision. Please use Quantronik devices for preventive care, so that you do not become ill in the first place!**

The statements reproduced here by Quantronik users have only been edited for linguistic clarity. The content has remained unchanged. The entries are arranged chronologically.

♦ ***Important Notice!***  
***No therapy without medical supervision!***

### Vein Pain in the Foot

*I used to have quite severe pain in my left foot due to a vein. Since I started using Quantronik "Salut", the pain has completely subsided. I've now been using the device for a month. As a result, I can avoid surgery that was planned for the fall. I can truly recommend Quantronik.*

St. Veit i. P., October 9, 1994

Signed: Gertraud H.

### Swollen Lymph Nodes in the Breast Circulation, Digestion

*I have been using the Quantronik system for about six weeks. During this time, I've had only positive experiences. I soon noticed a significantly improved circulation and digestion. Overall, my body became more balanced, more active, and more receptive.*

*But what convinced me the most was how I got my breast problems under control using the Quantronik system. At that time, my breast suddenly hurt intensely, and the lymph nodes swelled up to nearly double their normal size and were extremely painful. After my "special treatment" with "Salut", I was soon able to get this problem under control.*

Tarsdorf, October 24, 1994

Signed: Hildegard G.

- ♦ ***...was able to avoid planned vein surgery  
Swollen lymph nodes in the breast,  
circulation, digestion***

Diagnosis: Ankylosing Spondylitis (Morbus Bechterew)  
(Diagnosed since 1974)

*The illness was initially alleviated through treatment by a naturopath and spa stays in the Gastein Healing Caves.*

*1984: The pain had become nearly unbearable. I could no longer walk. The pain radiated all the way into my feet. A naturopath helped me achieve nearly pain-free years for two years. Then a cold triggered the return of the pain, especially at night when lying still.*

*August 8, 1994: After one week of treatment with the Quantronik device, I experienced a slight reduction in pain. Two weeks later, there was further improvement. Then I went on vacation for a week and paused the treatment, which turned out to be a serious mistake because the severe pain returned. I had to take pain medication (Intunzit) again — for one week.*

*After eight weeks without medication, using only the Quantronik system, I was pain-free during the day and only experienced mild pain at night. I am now even doing regular physical therapy under medical supervision. Only those who have lived with this disease for decades can truly understand what it means to live in constant pain.*

October 29, 1994

Signed: Franz T. (50 years old)

♦ ***Ankylosing Spondylitis (Morbus Bechterew)***  
***Interrupting Quantronik treatment***  
***during vacation was a mistake***



Back Pain  
Vitality  
Varicose Veins

*Having spent ten months in the hospital myself, I know what illness means. That's why I'm very glad that there is finally a way to prevent disease. For this reason, my wife and I acquired a Quantronik "Salut" set. Our vitality has noticeably improved since then.*

***After six weeks, I noticed a significant improvement in my back pain. After six weeks of using it, my wife noticed a slight improvement in her varicose veins (pulling sensation).***

*Something peculiar happened: 28 years ago, she had suffered a tibia and fibula fracture, which had caused a minor **tissue adhesion**. After the second day on the mat, she began to feel pain at that exact spot. She continued using the mat. After seven days, the pain disappeared — and so did the minor adhesion.*

Schwarzach, August 28, 1994

Signed: Martin and Herta B.

Geopathic Stress and Water Veins

*Our bedroom and the rest of our living space are possibly located over several water veins and intersections of harmful earth radiation. Because of this, we have been **suffering for over two years from sleep disturbances, headaches, back pain, and extreme fatigue**. With the Quantronik resonance system "Salut", the **sleep disturbances and back pain disappeared as early as after the second treatment**.*

- ♦ ***Back pain, vitality, varicose veins***
- ♦ ***At first, pain occurred...***

***My headaches initially became more intense. But after three weeks of treatment, there was no trace of the pain left.***

*Even the extreme fatigue completely disappeared after those three weeks. After a long two years, we now finally feel truly fit and well again.*

Bregenz, September 1994

Signed: Manuela S.

### Sleep Disturbances

***I suffered from severe sleep disturbances for two years, which were especially intense during the full moon. Already after 14 days of treatment with Quantronik “Salut “, I was free from them.***

Flachau, September 6, 1994

Signed: Christian K.

### Stomach Ulcer – Shortness of Breath

*In general, I suffered from sleep disturbances. After 14 days of treatment with the Quantronik system “Salut”, I was free from them.*

*Due to my profession, I developed a stomach ulcer. After three weeks of treatment, I had no more complaints.*

*As a result of this stomach ulcer, I occasionally — about once a week — experienced shortness of breath. My doctor had to give me injections to bring relief. After just four weeks using Quantronik “Salut”, I was also free from this affliction.*

♦ ***Sleep disturbances, stomach ulcer, shortness of breath  
...gone as if blown away!***

*I also suffered from **migraines** for a long time. **Already after 3 weeks, I noticed a significant improvement and was able to stop taking medication.***

Flachau, September 6, 1994

Signed: Elisabeth M.

#### Circulatory Disorders – Sleep Disturbances

*Due to stress at work, I struggled with circulatory and blood flow problems. After using “Salut” for 4 weeks, not only did my sleep disturbances disappear completely, but also my circulatory issues. My blood pressure normalized, and I have felt much more energetic ever since.*

St. Johann, September 10, 1994

Signed: Bernhard S.

#### Vein Pain – Sleep Disturbances

*I had been suffering from severe sleep disturbances and vein pain, especially at night, for quite some time. After a short period of regular use of “Salut”, I noticed a significant improvement. Since then, I sleep well, and my vein issues have improved considerably.*

St. Johann, September 12, 1994

Signed: Karin B.

- ♦ ***Circulatory disorders – sleep disturbances***
- ♦ ***Vein pain – sleep disturbances***
- ♦ ***...was able to stop taking medication***

## Disc Pain – Spinal Pain

*I had suffered from lower back pain for years because **my spine was misaligned and the discs were excessively extended**. Two months ago, I got to know the Quantronik Resonance System “Salut”. Since I could hardly get out of bed in the morning due to the severe pain, I bought the Quantronik system immediately. **In the first few weeks, the pain got even worse, but after about 3 weeks, I noticed a significant improvement, and after 5 weeks of treatment, the pain had completely vanished.***

*Quantronik turns every suffering person into a cheerful and healthy person because the immune system is strengthened to such an extent that one no longer needs to fear various illnesses.*

September 24, 1994

Signed: Kathi S.

## Muscle Soreness, Sensitivity to Foehn Winds

*I’ve been using “Salut” for 3 weeks now. The first noticeable effect was that my **sleep quality improved after just a few sessions**. I also noticed that my body recovered more quickly after physical exertion (less or no muscle soreness...). **Since I started studying medicine in Innsbruck, I’ve become increasingly sensitive to weather and Foehn winds** and had to deal with headaches at least once a week. To my relief, I haven’t been plagued by headaches once in the past 3 weeks. In summary, I believe “Salut” will be a valuable aid to many people in the months and years to come.*

Bischofshofen, September 28, 1994

Signed: Roland F.

- ♦ **Disc pain – spinal pain**
- ♦ **Muscle soreness, Foehn sensitivity**
- ♦ **...cheerful and healthy again!**

## Multiple Sclerosis

*I've known I have multiple sclerosis since 1991. So far, it has flared up three times, and each time it was immediately treated with cortisone. To avoid ever having to take such medication again, I've been lying on the Quantronik "Salut" mat for the past seven weeks, and I can only confirm that I feel worlds better, both physically and mentally. **Twice I was able to overcome the early signs of a relapse — under normal circumstances, I would have had to go to the hospital immediately.** I believe that, with the help of Quantronik, I now truly have my illness under control.*

October 12, 1994

Signed: Elisabeth P.

## Cancer – Chemotherapy – Radiation Therapy – Rash

My suffering began ten years ago with a **mole** that changed. Since then, I've been going to Salzburg every quarter for checkups. The mole was removed and turned out to be **malignant**.

In April 1994, a **malignant lump in my breast** was discovered. Another surgery followed, then **chemotherapy** (six treatments in total), and then 39 **radiation treatments**.

I began using the Quantronik "Salut" during this time. At first, I felt a bit tired, but that soon passed. I started feeling truly well. **Thanks to Quantronik, I tolerate the chemotherapy much better and even find joy in life again. I even managed to climb two mountains.**

*Quantronik also helped my husband. In September, he suffered from a **rash on his face**. No ointment helped.*

- ♦ **Multiple sclerosis**
- ♦ **Relief from side effects of cancer treatment**

*He used the mat for one week, and the rash disappeared. However, the pain in the foot worsened (gout). He was on sick leave for 3 weeks. By mid-October, the pain and the second outbreak of the rash had disappeared.*

Kleinarl, November 1994

Signed: Agnes S.

### Gout Venous Disorders

*I have been suffering from gout for six years. I think only someone who is in the same situation can imagine the kind of pain this means. Of course, I have been to every doctor and specialist in search of pain relief. **With the strongest medications, pain relief is definitely possible. However, the side effects are terrible — you really start to wonder whether you should take anything at all.** I only took the tablets when it was absolutely unbearable. I also have to follow a strict diet.*

*In addition, I have problems with my legs. I've already had two vein surgeries and constantly suffer from pain.*

*Since I started using Quantronik "Salut", **the pain in my legs improved after the first week of treatment. By now, I can speak of a significant relief from pain.***

*Now regarding the gout: **At first, the pain became much worse. This lasted for over one and a half months. Then I noticed that my fingers, elbows, and other joints were no longer swollen, and the pain decreased week by week.** Today, I only feel pain when I eat something wrong or when the weather*

- ♦ **Venous Disorders**
- ♦ **Gout: Joints no longer swollen**

*changes. I achieved all of this within 6 months using the Quantronik Resonance System “Salut” — without any side effects! I can recommend it to everyone.*

1995

Signed: Erika M.

#### Uric Acid, Cholesterol, Blood Sugar

*My uric acid, cholesterol level, and blood sugar have been too high for over seven years. **I’ve been under regular medical treatment since 1987.***

*Ten and eight years ago, I had surgeries on my knee and a herniated disc. But things didn’t improve at all afterward — on the contrary, the pain only increased with age.*

*About five years ago, I started taking painkillers just to be able to keep working. Exactly one year ago, I applied for **early retirement. Without painkillers and six other pills for blood sugar, cholesterol, and uric acid, I could no longer function — until the Quantronik Resonance System was introduced to me.***

*I’ve now proudly owned the Quantronik system for six months and can report the following improvements:*

- 1. My uric acid and cholesterol levels have been within the normal range for five months.*
- 2. **I used to have to take four tablets a day for my high blood sugar. Today, two are enough. The values are completely normal.***

♦ **Blood parameters normalized**  
**(Blutparameter wieder normal)**  
**Uric acid, cholesterol, blood sugar**

3. *My disc and knee pain actually worsened during the first three months. Thanks to regular support, I persevered — and today I am deeply grateful. I no longer need to take pain medication and have regained my mobility.*
4. *My overall physical condition has improved significantly, **and I've found new joy in life again. Thank you!***

Bischofshofen, 1995

Signed: G. M.

#### Vitality

*Since I started using “Salut”, my general well-being has improved significantly. I feel **much more vital** and handle my daily work stress much more calmly.*

Pfarrwerfen, January 28, 1995

Signed: Gertraud S.

#### Lower Back Pain

*I have been using “Salut” for two months now. During this time, my lower back pain has improved significantly. My overall well-being has also improved. We can truly and urgently **recommend** the Quantronik system.*

Pfarrwerfen, January 28, 1995

Signed: Karl S.

- ♦ ***Vitality, lower back pain***
- ♦ ***No more painkillers***



## Ankle Fracture

*Seven years ago, I had a serious **accident while paragliding**, in which both of my ankle joints were severely injured. (Grade III, wide open **luxation fracture** of the talus on both sides with massive cartilage damage). Since then, I was only able to work part-time in my job as a carpenter, and always in constant pain. Sports were completely out of the question.*

*I've been using the Quantronik Resonance System "Salut" for 4 months now. By now, my left **ankle is almost pain-free**, and on the right side, the pain has significantly decreased. **The recovery time is also many times shorter**. I can even go skiing for a few hours again. I used to get headaches during Foehn winds and when the weather changed; since I started using "Salut", my headaches have completely disappeared.*

Achenkirch, April 5, 1995

Signed: Michael P.

SV Casino, Salzburg

Austrian Champion, UEFA Cup Finalist, Super Cup Winner

*Wolfgang F.: Muscle tear of the biceps on 2.5.1995. From 3.5. treated daily on level IV (among other treatments). Statement from F. on 18.5.: "The course of the injury is better than ever before." Expected to return to play on 26 or 30 May 1995.*

*Ralf H.: Muscle strain in the semitendinosus muscle on 20.4.1995. Immediate treatment including "Salut". Very good healing progress. Played again on 29.4.1995.*

*Nicola J.: Muscle fiber tear on 2.5.1995. Treated daily once or twice including with "Salut". Expected to return to play on 3.6.1995.*

- ♦ **Ankle fracture**
- ♦ **SV Casino, Salzburg – Austrian Champion**

*Heino P.: Partial tear of the syndesmosis in the left ankle on 4.5.1995. Daily treatment 1–2 times, including with “Salut” magnetic field therapy. He returned to play on 5.5.1995!!*

*Before championship matches, five players used the device each time. Almost every player reported afterward that they felt particularly “energized.”*

1995

Signed: R. B., Sports Physiotherapist, SV Casino, Salzburg

### Quantronik Use at the Giro d'Italia

*On May 13, 1995, the Giro d'Italia started in Perugia, and we had five teams equipped with the Quantronik “Salut” system. During the Tour of Italy, we stayed in regular phone contact with all the teams and sometimes visited them at their respective stage locations. The success of Quantronik varied from team to team and rider to rider, depending on how consistently it was used. The reason was that not all athletes had the time to apply Quantronik several times a day. The more frequently the riders used the device, the more successful the effect.*

*Mr. Chiappucci from the **Carrera team** secured a “Salut” device right at the start and used it 3 to 5 times a day. He noticed that he regenerated much faster and was able to recharge his energy every single day. In hindsight, he realized that thanks to Quantronik, he remained completely free of colds or infections throughout the entire tour. (Fondriest had to withdraw from the race due to illness.)*

- ♦ **Quantronik use at the Giro d'Italia:**
- ♦ **Faster regeneration**

*Mr. Chiappucci is so enthusiastic that he wants to sell the Quantronik systems himself on the side. "Salut" has now become his constant companion, so that Quantronik is also being used during the **Tour of Catalonia** and the **Tour de France**.*

*Another immediate improvement was achieved by the doctors and masseurs of the Gewiss racing team with one of their top riders: **Mr. Furlan had contractures in his calf muscles, which were resolved thanks to Quantronik. The masseurs noted that massages applied after Quantronik sessions achieved much greater effectiveness.***

*Due to a similar problem, the participation of Russian rider Ugromov in the next day's time trial in Lenzerheide, Switzerland, was in question. Thanks to Quantronik, Ugromov was able to take part in the time trial the following day.*

*The Mapei racing team of Giro d'Italia winner Toni Rominger also uses Quantronik. The renowned sports physician Dr. Michele Ferrari is currently studying and testing the versatile effects of Quantronik on his riders on a daily basis. Toni Rominger will also stay in shape during the Tour de France with the help of Quantronik.*

Kaltern, June 15, 1995

Signed: Egon Heiss

#### Russian Interest in Quantronik

***I am certain that it will be impossible in the next 50 years to make a device for health that is as good as Quantronik.***

- ♦ **Higher effectiveness of massages**
- ♦ **Russia is waiting for Quantronik**

***Dear Dr. Fischer, They are waiting for you in Russia. Even the chief physician of St. Petersburg is very interested in Quantronik!***

Strobl, May 29, 1995

Signed: Larissa G.

#### Herniated Disc

*In February 1995, I suffered a herniated disc. Although I was under continuous medical treatment and received therapy, there was no real improvement. I could only move with great limitation and suffered from severe pain. **After just 14 days of using the Quantronik “Salut” system, I was able to move again almost completely and without pain.***

July 26, 1995

Signed: Richard G.

#### Arthrosis, Coxarthrosis

*Dear Dr. Fischer,*

*I would now like to give you my first report about my experience with the treatment using the fantastic “Salut” device. **Since I began using the device regularly, I have experienced noticeable relief from pain,** especially in the hip and knee. I suffer from arthrosis in the knee, which gave me significant trouble. Especially in bad weather, the pain felt like being stabbed in the knee joint with a sharp needle. This pain has been largely alleviated and, in a “good atmosphere”, has almost completely disappeared. Even in the hip, I feel significant pain relief over longer periods.*

- ♦ ***Herniated Disc***
- ♦ ***Arthrosis, Coxarthrosis***

*You surely won't remember that I once told you that I was **operated twice for coxarthrosis in my right hip**. The first time, I had a **Wagner cup**, which loosened after 7 years. During the second operation, I received a **titanium joint**, which has held up well for about 10 years now. Nevertheless, I still experience pain in the hip, especially when walking or standing for longer periods. These pains have been significantly reduced since I began using "Salut". The pain I had in my spine due to a narrowing of the lower spinal canal and severe damage in the lumbar vertebrae 4 and 5 has also significantly subsided.*

*I turned 80 years old this May. Two days after completing my first doctorate on November 30, 1938, I was drafted into the military. It had been promised that my age group would be discharged in May 1939. Unfortunately, the Sudeten crisis, the invasion of Poland, etc., followed, and after my captivity in autumn 1944, I remained in military service until 1946. However, I was granted three study leaves, each lasting half a year, during which I was able to complete my planned academic work.*

***The hardships of the war put a heavy strain on my "skeletal frame."** Of course, at my age, a complete healing of the mentioned conditions is out of the question. But I am very glad that pain relief for these often very unpleasant physical exertion-related pains has become increasingly possible thanks to "Salut". I will continue to use the device twice daily and will be happy to report further pain relief, should it occur.*

Dornbirn, August 2, 1995

Signed: Prof. Dipl.-Kfm. Dr. Dr. Erich Igerz

♦ **Pain relief in old age**

## Application in a General Medical Practice

Dr. med. Hannelore Bilz, Neufra

*I have been using the Quantronik Resonance System in my practice since July 1994 for all age groups and a wide variety of diagnoses. Throughout the entire period of observational application, no side effects occurred, only occasionally the **release of blockages**, which, however, could be controlled by reducing the applied field intensity.*

**Good results or significant improvement** have so far been achieved in: mobility in elderly patients, healing after trauma, wound healing, bone fractures, vegetative stigmata, metabolic conditions (diabetes, lipid metabolism), menopausal symptoms, depression, sleep disorders, migraines, fatigue, improved concentration, improved cerebral and peripheral circulation, reduction of hyperactivity in children and adolescents, chronic joint conditions due to degeneration (arthrosis) and spinal problems, osteoporosis, sciatica, rheumatic complaints, chronic pain conditions, vegetative dystonia, muscle tension, regeneration.

*The patients have received and rated the treatment extremely positively.*

**In my practice, I was able to reduce or even completely discontinue medications** in the areas of:

*Antihypertensives and hypotensives*

*Osteoporosis medications*

*Hypnotics*

*Antidepressants, tranquilizers, etc.*

*Antidiabetics*

♦ **Dr. med. Hannelore Bilz, Stuttgart:**  
**Medically supervised Quantronik application**

*Antiasthmatics*

*Venous therapeutics*

*Cerebral and peripheral circulation therapeutics*

*Immunostimulants*

***Some patient examples:***

*Female patient, 80 years old, osteoporosis, status post hip replacement surgery. Despite rehabilitation and intensive physiotherapy, unable to climb stairs, could only walk with canes.*

*\* 8 weeks Quantronik Resonance System (QRS):*

*Walking without canes, climbing stairs possible.*

*Male patient, 74 years old, after radial fracture of the right forearm, Sudeck's syndrome, unable to make a fist.*

*\* 8.5 weeks QRS: Able to make a full fist.*

*Male patient, 29 years old, early retiree, Crohn's disease*

*\* 3 weeks QRS: Condition significantly improved, number of bowel movements reduced, appetite improved.*

*Female patient, 76 years old, diabetes, cancer of unknown origin. Patient's daughter refused invasive diagnostics; diabetes began to decompensate.*

*\* After 4 weeks QRS: Blood sugar levels between 160 and max 200, patient feels well, resumed her household activities.*

*Male patient, 37 years old, tennis player, suffering from Achilles tendon issues for about 3 years, various treatments without success.*

*\* After 3 weeks QRS: Significant improvement, playing tournaments again.*

**♦ *Fewer medications!***

*Female patient, 29 years old, post-mononucleosis (Pfeiffer's disease), chronic fatigue syndrome, constant susceptibility to infections.*

*\* 4 weeks of QRS: Fatigue no longer present. Patient states she hasn't felt "this outrageously good in years".*

*Female patient, 53 years old, obesity, leg ulcers (ulcera cruris), post-thrombotic syndrome*

*\* 8 weeks of QRS: Clear reduction of ulcers, reduction of edema, improvement in mobility.*

***The Quantronik Resonance System represents an innovation in medicine for me — a gentle healing method without side effects, which allows patients to significantly improve their quality of life.***

*Due to its cell-regenerating and circulation-promoting effects, I recommend that everyone consider acquiring a Quantronik Resonance System over time for preventive care.*

*I myself will do everything in my power to ensure that the Quantronik Resonance System (QRS) will, in the future, attain the place in chronic disease therapy that it truly deserves.*

Neufra, August 1995

Dr. med. Hannelore Bilz

♦ ***Innovation in medicine***



Under Medical Supervision:  
 Testicular Cancer  
 Osteoporosis  
**Polyarthritis**

*Dear Dr. Fischer,*

*As promised, I am now sending you the first patient reports:*

*Male patient, 32 years old, diagnosis: **Testicular cancer** (seminoma) with metastasis in the abdominal area after semicastration (surgery). Chemotherapy and treatment with Quantronik “Salut”, 4 times daily, 3 times on level IV and once at night on level I. **After 3 days, the patient no longer needed painkillers or sleeping pills. He purchased the device and has been treating himself daily for 2 months — with good success.***

*Female patient, 71 years old, diagnosis: **Osteoporosis**. Pain throughout the entire spine. The patient came to the office once daily for 3 weeks to be treated with Quantronik “Salut”. **After 12 days, she was already completely free of complaints.** She rented a device and continued treatment 3 times daily on level III and once daily on level I.*

*Additionally, her partner also treated himself this way. He suffered from joint pain in multiple areas simultaneously (polyarthritis). After 3 weeks, he called the office and shared his experience with the Quantronik device. **He was completely amazed that the pain had also disappeared.** The two of them took a trip to Paris and spent the entire day walking — something that had previously been impossible.*

Vienna, August 22, 1995

Dr. D. C. Wolfgang Kropshofer

♦ **Dr. D. C. Kropshofer, Vienna:**  
**Osteoporosis patient**  
**completely free of symptoms after 12 days**

Asthma, Sciatica, Tension States  
Traumatic Brain Injury  
Meniscus

Mr. Thomas Lochmann, Puch, provided us with the following case studies on August 22, 1995:

*Mr. and Mrs. E. (Report after 3 weeks of "Salut" use). Since the tragic accidental death of their daughter one year ago, both have experienced considerable complaints.*

*Mr. E.: **Extreme tension**, especially in the back and neck. Accompanied by headaches. According to his own statement, after about 2 weeks the condition improved by at least 50%.*

*Mrs. E.: Sleep disturbances, asthma, sciatica. **She has slept through the night from the 4th day of Quantronik use. Asthma improved. No improvement with sciatica pain.***

Christoph K.

***Traumatic brain injury** in June 1993, approx. 8 months in a coma. Since October 1994, receiving Shiatsu therapy twice a week. Still in need of full-time care. Right side of the body relatively mobile. Left side severely spastic. Tongue only movable to the front row of teeth. Use of Quantronik device began on July 25, 1995.*

***After 4 days, clear effects:***

- \* Sticks out tongue approx. 4 cm and licks yogurt lid*
- \* Left side of body significantly more relaxed*
- \* Signals independently to be given another Quantronik session*

Case Study: Eveline S.

- ♦ ***Asthma, sciatica, tension, traumatic brain injury, meniscus***
- ♦ ***No improvement with sciatica***

1993 **Meniscus** injury in the left knee, followed by bone inflammation. Recovered after half a year.

1994 Ski accident, left knee: torn collateral and medial ligaments. During surgery, the meniscus was removed.

From April 1995: largely recovered. Skiing and tennis possible again. Nevertheless, daily starting difficulties in the morning, pain and stiffness in both knee joints.

Since mid-June 1995, use of Quantronik. **After about one week, at least 50% improvement.**

Puch, August 22, 1995

Signed: Thomas Lochmann

#### Medical Case Studies

*Dr. med. Walter Maus*

*Dear Dr. Fischer,*

*as you know, **I have been working with magnetic field therapy for 40 years; often with good results, sometimes without success. But your device continues to amaze me.** Not only because of the expected effects, but also due to surprising side effects that I have observed.*

*Let me begin with myself: After a **herniated disc operation with resection of a vertebral arch**, I struggled with significant pain for eight months.*

♦ ***Dr. med. Walter Maus,***  
***physician with 40 years of experience in magnetic field therapy***

*Under treatment with the Quantronik device, the pain gradually subsided and has now disappeared for the past week.*

***Unexpectedly, I also lost 6 kg in weight within 8 weeks.*** This reminded me that the literature mentions activation of fat metabolism.

***A female patient with pulmonary embolism and severe lymphatic congestion*** (especially in the legs) was symptom-free after 3 days and able to walk again.

***A female patient with atrophic gastritis and congested gallbladder*** has experienced no further complaints since using the mat.

***An 80-year-old male patient with ankylosing spondylitis*** feels significantly better and has renewed zest for life.

***A diabetic patient who also had gastritis*** was immediately free from stomach complaints.

***A female patient with herpes zoster*** (over 2 segments) began using the Quantronik device after 3 weeks of severe nerve pain and was pain-free after one and a half weeks, even though she had declined treatment with Zovirax against medical advice, and had been forecast to suffer from significant pain for six months.

***A patient with chronic pancreatitis and severe colic due to pancreatic stones*** is currently symptom-free. The mat was effective after just one week.

***A female patient with a prior bypass surgery*** experienced renewed angina-like symptoms, which disappeared immediately following use of Quantronik.

♦ ***...successfully treats himself  
with the Quantronik Resonance System***

*I currently have about 10 patients under observation, including: spinal metastases following prostate carcinoma, recovery after hip replacement surgery, and chronic nephritis. I will continue to keep you updated.*

Salem-Tüfingen, August 21, 1995

Dr. med. Walter R. Maus

### **Football Club AS ROMA**

*For the past two months, we have been using the Quantronik Resonance System “Salut” on a trial basis. **From our initial experiences, we can say that “Salut” has a very good therapeutic effect in terms of recovery from exertion and fatigue.***

*We cannot yet provide a precise evaluation of the therapeutic effect of “Salut” in sports traumatology, since — fortunately — we had no injuries during this trial phase. However, we aim to assess the effectiveness of “Salut” in sports injuries as soon as possible. **“Salut” can be recommended to anyone engaged in sports.***

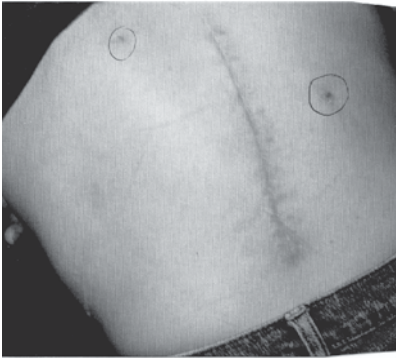
August 24, 1995

Dr. med. Ernesto Alicicco

♦ **Dr. med. Ernesto Alicicco**  
**Sports medicine trial phase at AS Roma**

### Burn Fluid after Ski Accident

On March 19, 1995, I had a skiing accident. I fell on my back, and my 17th thoracic vertebra was broken. On March 20, 1995, I had to undergo surgery lasting about 10 hours. Screws were placed in my back. On March 22, 1995, another operation followed, lasting approximately 11 hours. A portion of my hip bone was removed and inserted on the left side of my back. In January 1996, the screws were removed. Unfortunately, serous fluid or wound exudate developed in the wound, and I had to undergo another operation. The burn fluid formed again, and another surgery was imminent.



I applied Quantronik Salut 1 — three days later, the burn fluid was completely gone.

I applied Quantronik Salut 1 — three days later, the burn fluid was completely gone.

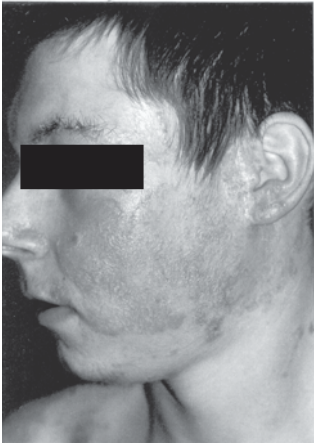
After one week, back pain was a thing of the past. Thanks to Quantronik, I also no longer have digestive problems. I also sleep well. I feel truly fit every new day. Even my smoker's cough is gone.

Hausen, April 23, 1996

Signed: Rita L.

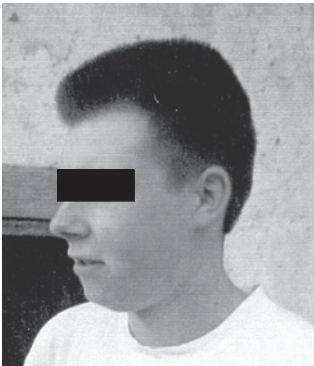


♦ *Burn fluid gone after 3 days*



The patient Heini F. had been suffering from chronic, recurrent skin conditions affecting the entire body since December 1995.

Subjectively, he reported severe itching.



After four weeks of using the QRS system under the care of Dr. med. L. G. in Lucerne: The skin is still sensitive. He no longer needs any medications.

Occasionally a few spots appear, but otherwise the body is now clear.

Also, for the first winter in years, Heini did not have the flu.

Sachseln, May 1, 1997

♦ *As one illness fades, so does the other*

## Severe Atopic Dermatitis Varicosis

QRS Therapy in a 60-Year-Old Patient with Primary Varicosis on the Left Side, with chronic venous insufficiency grade II with pigmentation changes, hypodermatitis, dermatoliposclerosis, and active ulceration for 4 months in the medial ankle area.

Course of Therapy:

Started with therapy level 3

1x daily

(Image: 3rd treatment on  
September 26, 1998)



Level 4, 1x daily, 7 days

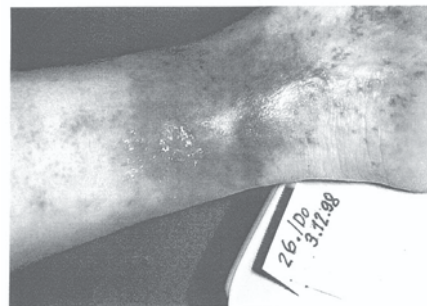
Level 5, 1x daily, 7 days

(Image 21: Treatment on  
November 18, 1998)



Level 6, 1x daily until closure

(Image 26: Treatment on  
December 3, 1998)



St. Gallen, Switzerland

Dr. med. N. L.

Mrs. R. Sch.

♦ ***Visible success in varicosis***



### Institute for Vitalogy

At the Institute for Vitalogy — The School for the Back, the QRS system was successfully used. Muscle tension and mobility restrictions in the cervical, thoracic, lumbar spine, and iliosacral (sciatic) regions were improved using Quantronik Resonance Therapy (pain relief and motor improvement).

Jürgen Rehren

### Lumbar Spine Syndrome and Osteoarthritis

In many cases, just 4–10 applications of QRS for lumbar spine syndrome and osteoarthritis shows a positive response.

Dr. med. Ch. de Greck (Germany)

Specialist in General Medicine

### Bronchial Asthma

A patient with long-standing bronchial asthma became completely symptom-free after just 4 weeks of treatment with QRS and was able to stop all medications.

Dr. med. J. Stockhausen (Germany)

### Arrhythmia

After 3 weeks of QRS application, an arrhythmia was no longer present. Medications could be discontinued.

Dipl. med. Ch. Albrecht (Germany)

### Hereditary Diseases

Since my entire family, myself included, has suffered from headaches for generations, I became a doctor. Unfortunately, headaches are very difficult to treat. I tried many things — without success.

♦ ***QRS physicians report***

Later, back pain joined the symptoms, and from the age of 50, I began to suffer from dry, flaky skin.

Within just a few weeks of using the QRS, the symptoms almost completely disappeared.

L. van Kunst, M.D. (Netherlands)

#### Hair Loss

A woman with severe hair loss of unknown cause used QRS. After just one month of therapy, significant hair regrowth began.

Dr. M. Kern (Switzerland)

#### Support During Autogenic Training

Chronic tension is the cause of many illnesses. That's why autogenic training was developed. From personal experience, however, I can say that many people do not achieve the desired level of relaxation through AT and give up out of frustration.

When QRS is used, it quickly leads to a positive sensation of relaxation (heaviness) and warmth, making it easier to learn autogenic training and enhancing its effects.

U. Kinberger, M.D., Psychiatry/Naturopathy

#### Tinnitus, Etc.

One patient lost her tinnitus after 3 weeks (1 QRS session daily), another patient experienced complete relief of chronic back pain, a third patient reported marked improvement in her varicose vein symptoms. Due to these positive experiences, I have now firmly incorporated QRS therapy into my treatment spectrum.

♦ ***QRS physicians report***

Dr. med. G. Otto (Germany)

Specialist in General Medicine, Homeopathy, Chiropractic, Lecturer in General Medicine at GHS Essen

#### Osteoporosis, Migraine, Rheumatism

I own 4 QRS systems, which are constantly on loan to patients. I treat especially osteoporosis, migraine, and rheumatism very successfully with the QRS.

Dr. med. A. Neureiter (Germany)

#### Child with sleep disorders

A 5-year-old child with difficulty staying asleep is now being treated with QRS. After just two weeks, the child sleeps through the night every night.

K. H. Blättel (Germany)

Specialist in Pediatrics

#### Coxarthrosis, Osteoporosis, Spondylosis

##### Progress report on QRS treatment

I have known Marianne F. since 1987. Since then, she has suffered from coxarthrosis and early-stage osteoporosis, which was treated with infiltrations, physical therapy, and electrotherapy. Over the years, her spinal complaints increased. In 1995, her pain worsened, especially in the right hip joint.

Findings at that time: Severe obesity, hyperlordosis, and left-convex scoliosis of the lumbar spine with muscular tension in the lumbar extensors, percussion and movement pain from L4–S1. No signs of nerve root irritation or compression, and neurologically unremarkable. Pressure and functional pain above the right greater trochanter; both hip joints are equally mobile with slight restrictions in internal rotation on both sides.

♦ ***QRS physicians report***

X-ray findings from August 1995:

Lumbar spine (LWS) in two planes, pelvic overview, and right hip joint (Lauenstein view): Severe osteoporosis, spondylosis, and spondylarthrosis of the lumbar spine. Endplate impressions at vertebrae II, III, and IV, and increased compression of the first lumbar vertebra. Ventral compression fracture of the 8th thoracic vertebra (BWK). Osteochondrosis at Th10/11/12 and L1 as well as L5/S1. Initial coxarthrosis on both sides.

Prescription of standard osteoporosis medications such as Tridin and TENS therapy due to pain, which initially responded well.

In February 1997, pain intensified again. X-rays showed some worsening of the condition, with further progression of osteoporosis. Start of QRS therapy: February 17, 1997.

Treatment: At the beginning of QRS treatment: Plenisol paravertebrally twice a week 1000 mg calcium effervescent tablet daily An analgesic every evening to be able to sleep at night Lying on the left side was not possible. In the morning, one Diclofenac 100 suppository During the day, 1–2 analgesics depending on pain level, mostly Diclofenac.

QRS therapy: Use of the mat twice daily — mornings and evenings on level 3 for two weeks, then mornings on level 4, evenings on level 3 for another two weeks. After two weeks, a brief increase in pain, which subsided spontaneously without changing the field strength.

April 10, 1997: She is doing better and no longer wants injections — until now, she had still been receiving Plenisol twice weekly. Despite a severe flu, she continues on level 4. She can now lie on her left side and hardly needs any analgesics anymore. Previously: one suppository in the morning and a tablet daily. Now: easier getting up in the morning and pain-free turning over in bed.

♦ ***QRS physicians report***

April 24, 1997: She is doing very well. Level 9 in the morning, 7 at midday and in the evening. Adjustment of settings to 9–6–1. She feels very comfortable, although she is sleeping a bit less well.

June 25, 1997: She is still practically pain-free, stays with setting 9–6–1 and is now buying the QRS device due to the good results.

Dr. med. Hans Härtling

Specialist in Orthopedics, Chiropractic, and Naturopathy

♦ ***QRS physicians report***

**Chapter 28**

# **QUANTUM MEDICINE**

**How many  
diseases  
really exist?**





## Chapter 28

## Quantum Medicine

### How many diseases truly exist?

Success in combating many diseases. When, as a pioneer of a new form of medicine, one triggers such a response among both professionals and patients — as described in the previous chapter — one cannot rest content. In the end, even this kind of resonance must be scientifically evaluated. Many potential applications of quantum therapy were mentioned that we had not yet even anticipated at this stage:

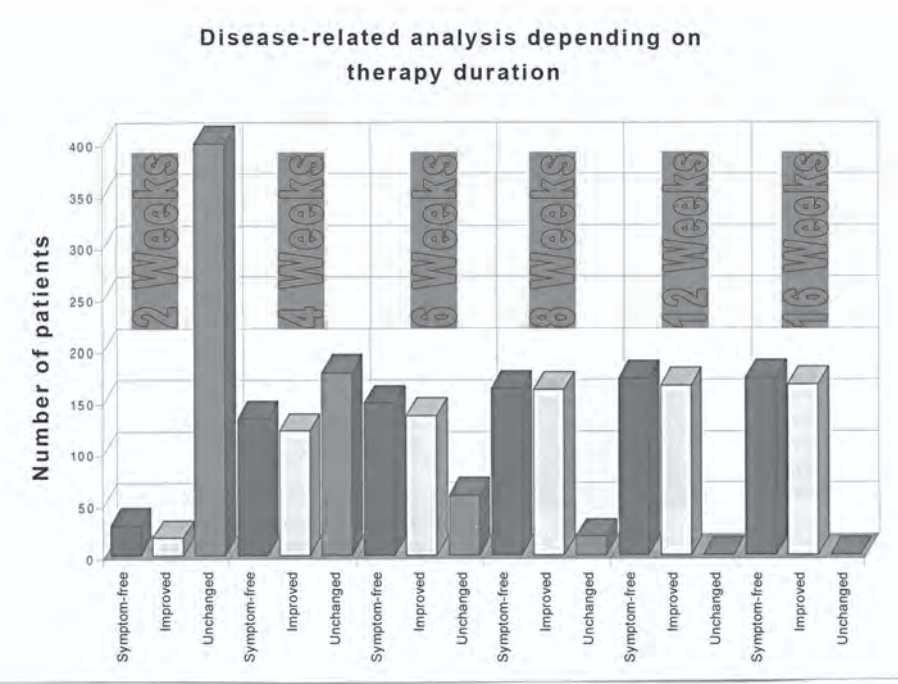
Obesity, angina pectoris, arrhythmia, asthma, shortness of breath, arthrosis, rash, disc problems, blood pressure disorders, burn fluid, side effects of chemotherapy, elevated cholesterol levels, chronic fatigue syndrome, coxarthrosis, intestinal bleeding, inflammation of the intestine, depression, dermatitis, diabetes mellitus, circulatory disorders, hereditary diseases, sensitivity to föhn winds, gastritis, gout, hair loss, uric acid dysregulation, herpes zoster, testicular cancer, sciatica, knee pain, headaches, varicose veins, circulatory disorders, pulmonary embolism, luxation fracture, lymph node swelling, stomach ulcer, meniscus injury, migraine, ankylosing spondylitis, Sudeck's disease, multiple sclerosis, muscle fiber tear, sore muscles, neuralgia, edema, osteoporosis, pancreatitis, polyarthritis, psycho-vegetative disorders, back pain, sleep disturbances, shoulder-arm syndrome, spondylosis, tennis elbow, tinnitus, tumor diseases, leg ulcers (ulcus cruris), varicosis, vegetative dystonia, vein pain, spinal pain, wound healing disorders, strains.

But what truly mattered — where was further research particularly worthwhile?

We conducted a Europe-wide study:

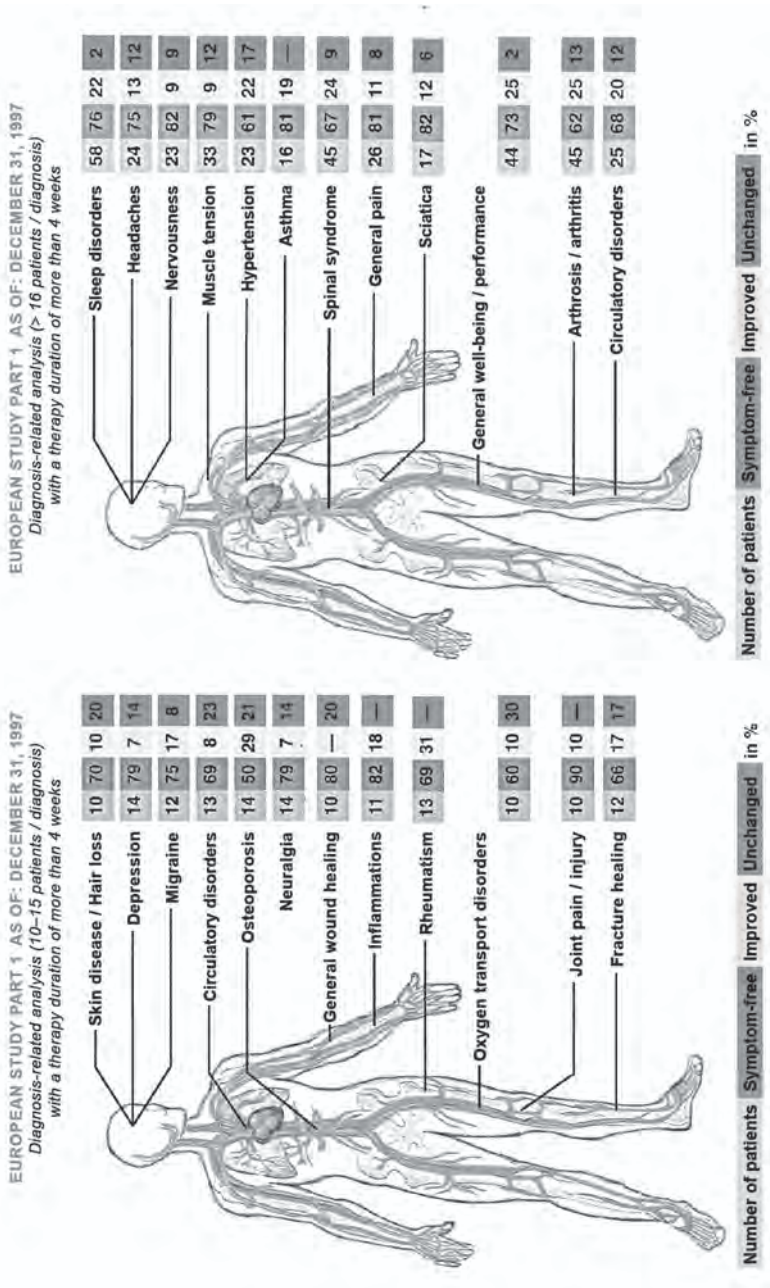
♦ ***Important note!***  
***No therapy without medical supervision!***





(Published by: Conscious Living (Bewusster Leben 3/98))

♦ *The first quantum medical European study*



Published by: Conscious Living (Bewusster Leben 3/98)

♦ The first quantum medical European study

The first quantum medical European study was completed in 1998. It is continuously updated. The latest status of quantum medical research can be found on the website: [www.quantentherapie.de](http://www.quantentherapie.de).

**Why do we actually speak of quantum therapy when, at its core, this is really an optimization of magnetic field therapy?**

Because: we want to, we can, and we must distance ourselves from charlatans and opportunists who roam the world with the term “magnetic field therapy” and spread scientific nonsense.

Even the term resonance therapy or bioresonance therapy has been so tarnished by such individuals that we must sharply distance ourselves from it. **We do not want to introduce esotericism or mysticism into medicine**, but instead lay all facts clearly on the table. In five sentences, everything is said that is written in the corresponding patents:

1. **By eliminating electrosmog fields, which could disrupt the entire process, we first create the conditions for effective therapy.**
2. **Our Quantum Resonance Therapy (QRS) transports biologically essential ions through the cell membrane using precisely controlled magnetic quanta.**
3. **As a result, the cells are better nourished and enabled to reestablish the necessary membrane potential.**
4. **The pathological energy deficit of the cells, the number one disease of civilization and probably the cause of all other diseases, is overcome. (“Cellvital Effect”)**
5. **Furthermore, we target the natural resonance of blood vessels and promote improved oxygen supply.**

♦ *The 5 core principles of the new medicine*

## 1. Electrosmog vs. Quantronik Resonance System

### Electrosmog

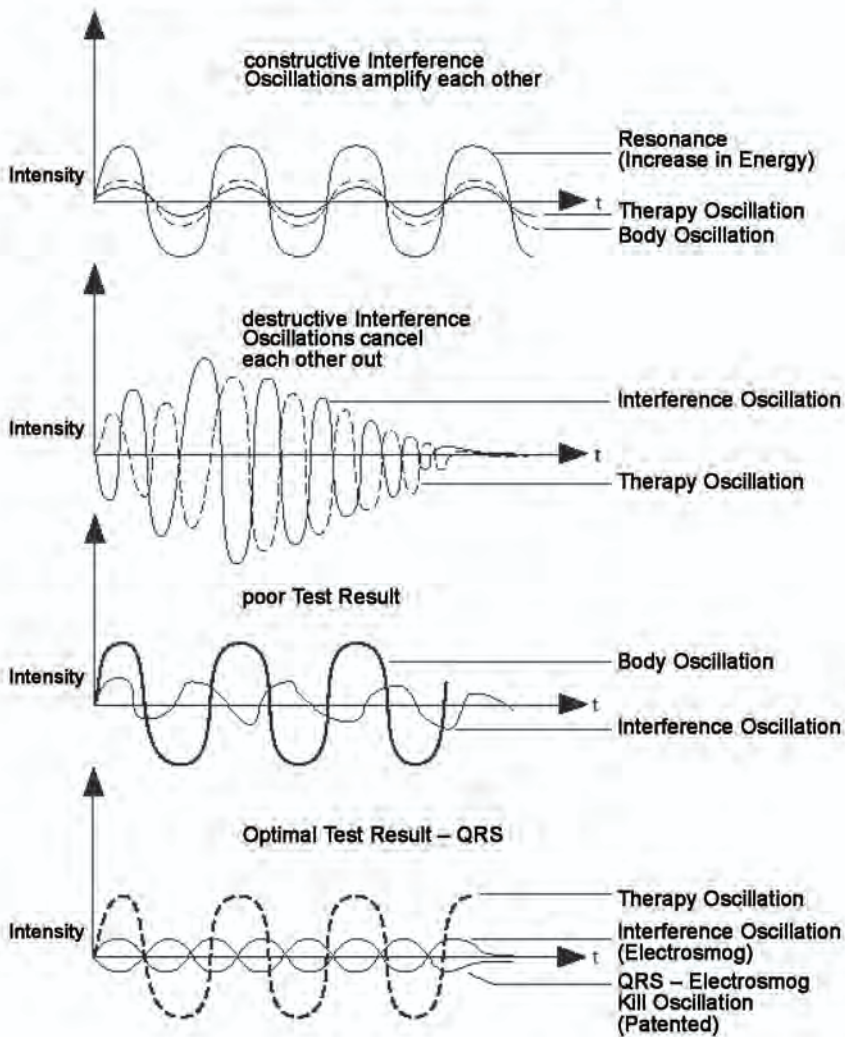
1. Continuous, uninterrupted burden and impact on the organism — even during the regeneration phase (sleep).
2. Severely disrupts the body's own cycles without pause.
3. This leads to a broadband effect of the induced signals — from extremely low to extremely high-frequency impulses.
4. Due to the constant and uninterrupted disruptive signals, the body can no longer regenerate, leading to pathological processes. (If you constantly strain a muscle with 30 kg, it becomes diseased. With alternating strain, the same muscle becomes strong and grows by at least 100%.)
5. The production of hormones (e.g., sleep hormones) is hindered by the disturbance of enzyme rhythms.

### (QRS) Quantum Therapy

1. The magnetic field may act for a maximum of 8 minutes per application, which avoids activating the body's adaptation or defense mechanisms.
2. The short stimulation strengthens the body's self-healing powers and initiates healthy processes.
3. Provides the body with its own frequencies and harmonizes the electromagnetic climate within the body. Overlays disruptive frequencies.
4. Acts as an ordering physiological force and thus has a healing effect.
5. Stimulates enzyme rhythms and promotes hormone production.
6. "Detoxifies" through removal of metabolic waste and interference or amplitude dominance. The frequencies must always be intermittent.

♦ ***Patented Kill-E-Smog System***

## Frequency Resonance QRS Principle

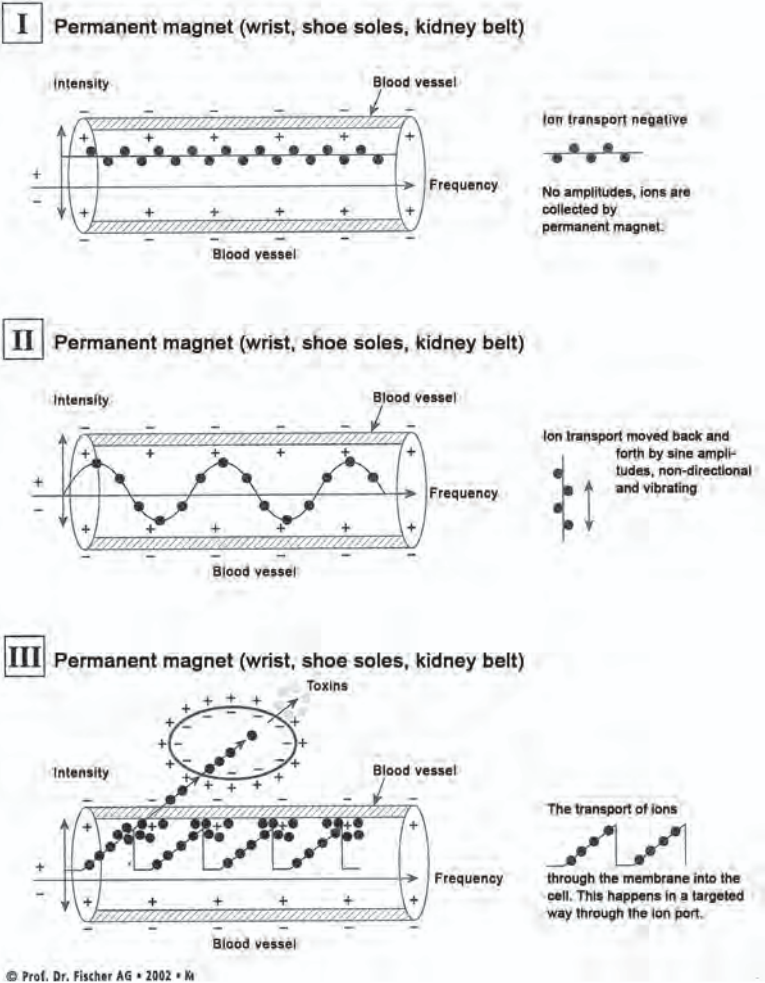


- ♦ *The elimination of electrosmog as a prerequisite for therapy*

## 2.

# Ion Transport in Quantum Medicine

While traditional magnetic field therapy still operated with inadequate pulse shapes and magnetic fields, the special sawtooth waveform of Quantronik can in fact move ions. It is the bioelectrical master key to the human cell.

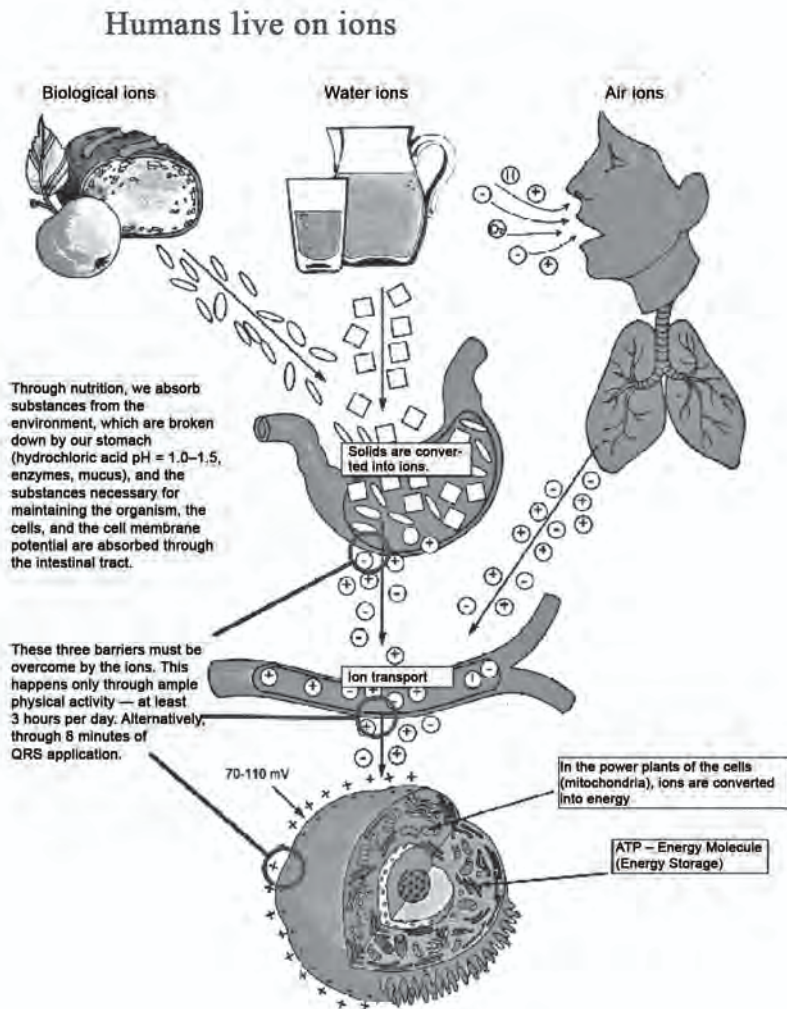


♦ *Only the patented sawtooth waveform enables ion transport*



### 3. Revitalization of Cellular Metabolism

Food that does not penetrate the cells is simply civilizational waste and must be eliminated. Ions must enter the cells.

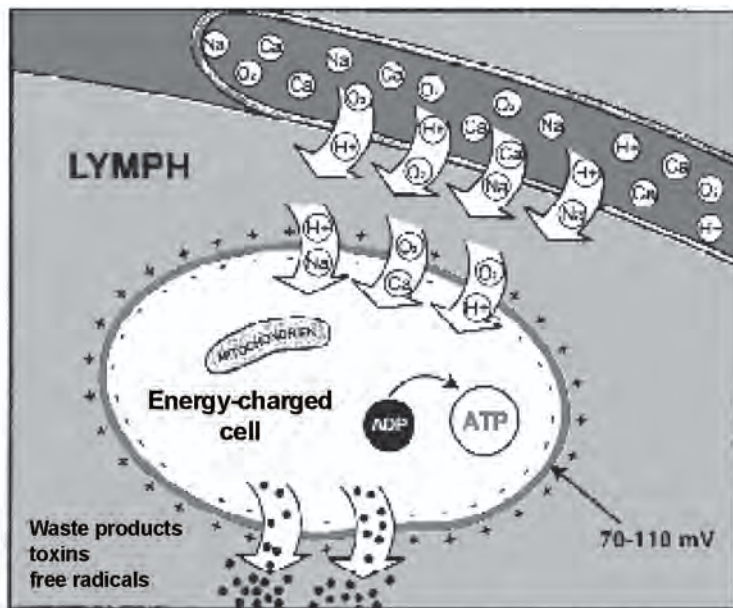


♦ *The 5 Core Principles of the New Medicine*

## 4. The Cellvital Effect

The modern, civilization-stricken human being is becoming increasingly tired, their immune system is weakening, and susceptibility to illness is increasing.

The reason is the pathological energy deficiency of the cells. Low-energy cells are both a precondition and a side effect of diseases.



The cell membrane potential in healthy cells ranges from **70-110 mV**

The cell membrane potential in diseased cells ranges from **40-50 mV**

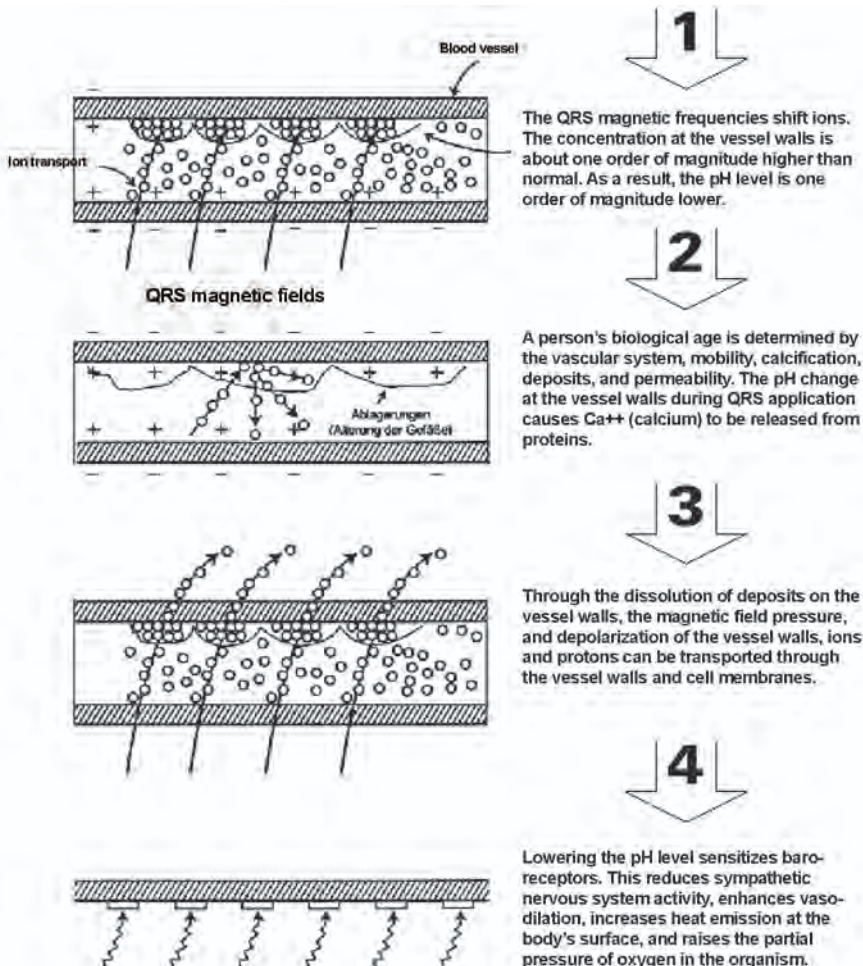
The cell membrane potential in cancer cells ranges from **20-30 mV**

♦ *The 5 Core Principles of the New Medicine*



## 5. Effect on Blood Vessels and the O<sub>2</sub> Complex

The rate of oxygen uptake can be increased just as much as the oxygen supply to tissues and to cells.



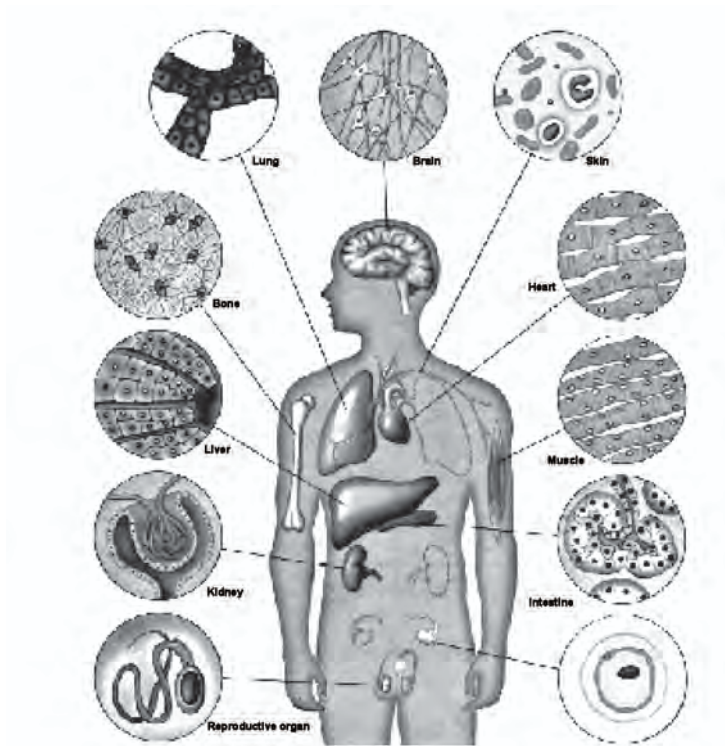
♦ *The 5 Core Principles of the New Medicine*

These are the 5 core principles of quantum therapy, as already described in detail in this book. This is how the new medicine works — and how it does not. (The list of these “healing frequencies” would be 6 pages long — here is just a small excerpt.)

Epstein Barre virus (EBV)	372.5	382.35	380, 375
Erwinia amylovora	347.2	352.1	350
Erwinia carotovora	363.1	377.0	373
Escherichia coli (E. coli) intestinal bacterium	356	356	356
Escherichia coli (E. coli) (2nd range)	392	393	393
Gaffkya tetragena	344.85	352.5	350
causes respiratory infections			
Gardnereila vaginalis	333.0	342.55	340
ovarian and genital tract infection			
Haemophilus influenzae	336.41	336.41	336
bacterial meningitis, infects joints			
Hepatitis B antigen	414.55	420.8	413
Herpes simplex I	291.25	293.05	292
Herpes simplex 1(2nd range)		345.35	345.76
345.5			
Herpes simplex 2 (fresh smear)	353.9	362.9	360, 355
Herpes Zoster "shingles"	416.6	420.2	413
Histomonas meleagridis (liver)	376.55	373.7	377
Histoplasma capsulatum	293.3	304.35	302
HIV	365	365	365
Influenza A and B (flu shot)	313.35	323.9	320, 315
Iron Bacterium Sphaerotilus			
BACTERIA AND VIRUSES	Low Freq	High Freq	Use for
Continued	(Khz)	(Khz)	3 min
Mumps antigen	377.6	384.65	382
Mycobacterium para TB			
Mycobacterium phlei	409.65	410.65	410.0
Mycobacterium smegmatis			
Mycobacterium tuberculosis (infec nodule) causes tuberculosis	430.55	434.2	432
Mycoplasma	322.85	323.9	323.5
Proteus vulgaris (2nd range)	333.75	339.15	
P	378.95	383.15	380
Rhizobium leguminosarum			
Salmonella enteriditis intestinal infection	329	329	329
Salmonella paratyphi	365.05	370.1	368
Salmonella typhimurium	382.3	386.55	385, 386
food poisoning, nervousness, apathy			

♦ **Esotericism:**  
*Every illness requires its own treatment frequency*

I am absolutely convinced: There are not 326 diseases...  
There are only sick cells.



Take care of your cells... and you take care of yourself.

♦ *Quantum medicine addresses  
the core of the disease*

## Afterword

Prof. Dr. Rainer B. Pelka  
University of the Bundeswehr Munich

Diagnosis and Therapy: **The main tasks of medicine are therapy and — hardly less important — diagnosis. The reason for this becomes clear when one looks at the history of medicine. For many centuries, physicians were often regarded as quacks — not because they didn't heal, but because they could not satisfactorily predict when or to what extent their “therapy” would be effective. This made it easy for the impression to arise that the outcome of medical treatment depended largely on chance, and thus the competence of the physician was rated as highly uncertain.**

The industrial revolution in modern times, a consequence of the Western analytical mindset rekindled during the Renaissance, allowed for previously unimaginable developments and discoveries. People achieved this through focused concentration on just a few aspects of a phenomenon and through a successive, careful build-up on well-established findings — all with increasing speed. Medicine could not — or did not want to — withdraw from this. And so the concept of causality found its way into medical thinking: the idea of diagnosis as the identification of the decisive or most important cause, and the therapy built upon that as a tool of counteraction, was born.

The practical successes, especially in the fields of infectiology, surgery, and orthopedics, brought this model widespread triumph, which persisted well into the 20th century. Even today, most physicians still adhere to this way of thinking. But what might cause us to apply this model with growing skepticism?



A thousand diseases – one health: **The increase in average human life expectancy in highly developed countries from about 50 years in the 19th century to over 80 years today was made possible primarily by improved living conditions. This became evident not least through the ability of modern medicine to stabilize acute risk situations far more frequently than in the past.**

As a result, we are now increasingly confronted with chronic diseases — frequent companions of aging, often appearing in multimorbid form — which distress us, impair our lives, and impose financial burdens to a degree previously unknown. Despite the remarkable achievements of modern medicine in well-defined areas, it increasingly fails to cure chronic diseases and instead manages symptoms only.

To avoid misunderstanding: these achievements are still significant and can improve survival and quality of life. But too often, success in one area comes at the cost of drawbacks in another (side effects, abandonment of therapy, lack of efficacy). As medicine continues to develop tools for avoiding or compensating collapsing bodily functions, death can be increasingly postponed. The price is a growing need for care and public spending on the chronically ill, while patients often experience extended periods of poor quality of life.

Impending paradigm shift: **It is not so much the spectacular advances in genetics — which seem to require only slight extensions of the causal model — but rather findings from psychoneuroimmunology and discoveries like those described in this book that could trigger a paradigm shift.**



**The immunological breakthroughs of the last 25 years lead to two essential consequences for future therapeutic concepts: The demonstrated influence of the psyche via the nervous system on the immune system, and hence the body's ability to cope with disruption, can no longer be ignored, especially in the treatment of chronic disease. The goal is not the full restoration of the ideal organism's performance but rather long-term functional stability. Outcome must be measured not as a snapshot but over the course of timeframes.**

If the results and developments described so far in quantum therapy are confirmed through further analysis, they will provide a third impetus. The wide range of applications (see e.g., proceedings of the 1st International Symposium 2001) using only slightly varying parameters (frequency, field strength, duration, feedback) suggests that we may need to part not only from organ-specific models but from the diagnosis-therapy causality model altogether — except in narrowly defined cases.

System model, global index, and health economics: **The key difference between the causal model and the system model lies in the point of intervention (see Pelka 1988, 1995). The causal model aims to eliminate a disruption or its consequences. The system model, by contrast, focuses on supporting the body's natural, time-tested ability to respond appropriately to disturbances.**



This leads to the development and evaluation of more complex indicators, reflecting broader aspects of health and progression. Rising healthcare costs accelerate this shift. In the future, therapeutic outcome alone will not be decisive — especially when it's no longer just about life or death — but rather the overall process in relation to cost.

A team of specialists and generalists: **What does this mean for our future needs in medical training and practice?** For some time, there has been talk of the “generalist” who builds bridges between specialists. But so far, few seem to genuinely need them. Within the current scientific paradigm, new problems have been tackled through increasing specialization. The generalist was seen as a regression — “how can they help where even specialists fail?” After a paradigm shift, specialists won't become obsolete — but many therapeutic challenges can only be addressed through cooperation with generalists trained in systems thinking?

Criteria for therapeutic quality: **The generalist can only emerge once new criteria of therapeutic quality become integrated into daily clinical practice.** The most important drivers of this shift will be cost savings (health economics) and successful approaches to systemic therapy. Systemic therapy here refers to a treatment that helps reactivate, improve, or stabilize systemic processes within the organism where they have been impaired. Can the QRS (Quantum Resonance Therapy) described here become such a therapy?





Magnetic fields as harmless artifact, danger, or benefit: **Magnetic field therapy has been used experimentally for thousands of years. But despite many reported successes, it remained marginal until the 1970s, being viewed either as ineffective or even as a health hazard. Media narratives recently reinforce the latter view, linking artificial magnetic fields from electrification — power lines, cell towers, computers — with health risks.**

However, increasing scientific evidence refutes the claim of ineffectiveness and suggests that the question of harm versus benefit must be answered more nuanced.

From Saul to Paul? **A scientist — especially one with a background in the natural sciences — rarely experiences the moment of being suddenly convinced by something he had previously questioned or outright rejected. Even less frequently does he find himself able to represent any newly formed conviction with the same outward determination. His belief grows — or shifts — gradually. It is the result of forming hypotheses that become increasingly refined and are disproven less and less often.**

So even now, I don't give a black-and-white "all or nothing" answer. But after over 13 years of intermittent engagement with this topic, I can now give a cautiously positive assessment: Based on the findings known to me, I consider it important to continue exploring this therapeutic approach, to deepen it through basic research, and to make it more accessible for future medicine.





Findings and evaluation: **This book presents some remarkable and even astonishing results from Quantron Resonance Therapy, a specific form of magnetic field therapy. These are embedded in a broader vision. The author's enthusiasm — stemming from both research and personal experience — is understandable and useful as a motivator for further application and investigation. But of course, enthusiasm cannot substitute for evidence.**

That is why both science and public health policy should take it seriously — or at least evaluate and investigate it further. This requires substantial funding for new and ongoing research into the potential and limitations of magnetic field therapy, especially quantum therapy. A good overview of the currently observed positive effects of EMF and especially QRS is provided in the symposium proceedings (Fischer GE / RB Pelka 2001). It shows that researchers and physicians worldwide are interested in confirming results and identifying further clinically relevant effects.

From information to knowledge to outreach: **Equally important to me is the need to frame this scientific information in a broader context, and to communicate it publicly — appropriately, repeatedly, and in diverse forms. We must not be naïve: Public skepticism, fueled by the lack of well-controlled studies, reinforced by general resistance to change, and worsened by a flood of unscientific “opportunists” chasing easy money, is still extremely high. This makes both public and private support for related research very unlikely. Unlike the visible support for genetic research (which is not without its own issues), the lack of carefully positive public discourse has prevented broader investment in researching the links between EMF and human health or therapy.**



What is a bad path — and what is a good one? As with any new development, QRS therapy must endure this public discourse with perseverance and persistence. This includes maximum support for further clinical and basic research wherever financially possible. Equally crucial is the evaluation and synthesis of individual findings into a therapeutic context. Failures and contradictions must also be addressed. Only through open discussion can a credible overall concept emerge.

As the late co-developer and mentor of QRS, Prof. Dr.-Ing. Herbert L. König, wrote in the preface to the first edition, the dynamism, commitment, and strategic sense of the developer, patent holder, and author Dr. G. Fischer will be decisive for success. If these continue to align with the right partnerships, then international success should not be far off.

Rainer B. Pelka





## Glossary

**Absorbed dose (Energy dose)**

The amount of ionizing radiation energy absorbed per unit of mass. The unit is gray (Gy).

**Absorption**

Uptake of energy (and its conversion into heat), e.g., by organic material.

**Activity**

Number of radioactive atomic nuclei of a substance that decay per second. The unit is becquerel (Bq).

**Adenosine triphosphate (ATP)**

Universal biological energy currency.

**Air ions**

This term refers to charged particles in the lower layers of the atmosphere near the ground. They are formed either by impact ionization through cosmic radiation, photoionization by ultraviolet radiation from sunlight, or through natural radioactivity from rocks and geological fault zones. Additionally, ionization can result from sand and dust storms, sea spray, waterfalls, or fire (e.g., forest fires). This process creates positively charged air molecules and free electrons. The electrons may attach to neutral molecules and form negatively charged molecules. Ion formation is significantly less common near the ground than in the upper atmosphere. Through polarization and electrostatic attraction, several like-charged ions combine to form clusters. These clusters — also known as ion clouds — together with free electrons, are referred to as small ions. Their density ranges from a few hundred to a thousand per cubic centimeter of air. Small ions and electrons can also attach themselves to larger particles such as soot, dust, aerosols, and microorganisms, forming



heavy, slow-moving, long-lived medium and large ions. In urban and industrial areas, their density can reach several hundred thousand to several million per cubic centimeter. Their measurement serves as an index of air pollution.

**Alpha radiation**

An ionizing type of electromagnetic radiation that generates ions in body tissue. It arises when an atomic nucleus (e.g., of plutonium or uranium) decays radioactively and emits alpha particles. Alpha radiation has a very short range, but inside the body, alpha particles can cause severe damage to the genetic material DNA (see entry).

**Alternating current (AC)**

An electric current that changes its direction of flow at a specific frequency. For example, a 60-Hz alternating current changes direction sixty times per second.

**Ampere**

The strength of electric current is measured in amperes (A) and denoted by I. One ampere is the amount of electric charge flowing through a conductor in a specific period of time.

**Amplitude**

The maximum extent of oscillation — the greatest value that a periodically changing quantity can reach in a wave or vibration.

**Anabolic hormones**

Hormones involved in the building up of body tissue.

**Angstrom (Å)**

Unit of measurement for the wavelength of light.



**Antenna gain**

A factor indicating how much stronger the waves are in the main radiation direction of an antenna compared to isotropic (omnidirectional) radiation.

**Apatite**

The mineral component of bone — microscopic calcium phosphate crystals that are deposited onto the collagen structure of the bone, making it hard.

**Assimilation**

Synthesis of organic substances.

**Athermal effects**

A variety of different mechanisms of action that do not involve any heating.

**Atmospheric electricity**

The electric field of the air arises from the charge differences between the negatively charged surface of the Earth and the positively charged air layer at an altitude of 50 to 60 kilometers. Its strength fluctuates considerably. It depends, among other things, on the conductivity of the air and the position of the moon. At full moon, the electric field is strongest at new moon, it is weakest. Thus, the position of the moon also causes variations in the ionization of the air. The more ions there are in the air, the higher its degree of ionization. The ions flow vertically away from the Earth's surface as the so-called vertical current, during which an exchange of ions takes place between terrestrial and cosmic radiation. Just above the Earth's surface, the electric field strength is at its highest. A voltage of 200 kilovolts exists between the Earth and the ionosphere. During a thunderstorm, there is a discharge of positive and negative ions, which causes a significant change in the intensity of the atmospheric electric field.



**Atmospherics**

Electromagnetic signals of natural origin with wave-like characteristics that propagate mainly between the Earth's surface and the ionosphere (the outermost layer of the Earth's atmosphere). They originate from lightning discharges (see also: Sferics).

**Axon**

The extension of a nerve cell that transmits a signal or stimulus away from the cell body. For example, a motor nerve cell transmits a contraction signal to a muscle.

**Base pair**

A connection between two (or four) fundamental chemical groups that make up all DNA and RNA molecules. Base pairs are the smallest units that form meaningful sequences in the genetic code. The more base pairs a molecule has, the larger it is.

**Beta radiation**

An ionizing radiation released during radioactive beta decay beta particles can be electrons or positrons. Beta radiation penetrates human tissue to a depth of one to two centimeters.

**Biological cycles**

Changes in the activity of living cells in a pattern of ebb and flow. Such changes occur on almost all physical levels — including sleep–wake cycles, hormone levels, and the number of white blood cells. The dominant pattern usually follows a 24-hour rhythm and is closely tied to the lunar day.

**Biophysics**

The science of physical processes in and around living organisms.



**Blastema**

A mass of primitive, embryonic cells that forms at the site of injury in animals capable of regenerating limbs. These cells later grow and form an exact replica of the lost appendage.

**Cell proliferation**

The multiplication of cells.

**Choke / Choke coil**

A coil used to limit alternating currents — for example, in the circuitry of fluorescent lamps.

**Circadian rhythm**

Biological rhythm in a 24-hour cycle. The dominant biological cycle of all living beings, derived from the Latin words *circa* (approximately) and *dies* (a day).

**Coherence**

Oscillations of the same frequency and in the same phase.

**Crystal lattice**

The precise, orderly arrangement of atoms in a crystal, forming a grid-like structure.

**Current density in the body**

If a human body is placed in an alternating electric field, a displacement current proportional to the field strength flows through the body. The current density  $S = I/A$  is calculated from the displacement current ( $I$ ) and the area ( $A$ ) through which it flows.





**Curry grid**

An allegedly existing grid of “earth radiation interference zones,” said to be aligned diagonally from northeast to southwest.

**Dedifferentiation**

The process by which a mature, specialized cell reverts to its original embryonic, unspecialized state. During dedifferentiation, genes containing the code for other cell types become accessible again by lifting their repression. Extra Low Frequency (ELF): Extremely low frequency, the range of the electromagnetic spectrum that extends from 0 to 1000 oscillations per second. This includes the 60 Hz power grid frequency and the 45 and 75 Hz frequencies used in the U.S. Navy’s submarine communication systems.

**Dendrite**

The extension of a nerve cell that carries a signal or stimulus toward the cell body. For example, sensory neurons receive signals from skin receptors via their dendrites.

**Deoxyribonucleic acid (DNA)**

Carrier of genetic information the main component of chromosomes.

**Differentiation**

The process by which a cell develops from a simple embryonic state into a mature, specialized adult cell. During differentiation, all genes for other cell types are suppressed. (See also: terminal differentiation, gene.)

**DIN VDE**

Formerly known only as “VDE regulations,” today “DIN-VDE regulations.” DIN and VDE jointly support the German Electrotechnical Commission (DKE), which represents national interests in the international harmonization of electrotechnical standards.



**Direct current (DC)**

Electric current that flows in a constant direction.

**DNA (Deoxyribonucleic acid)**

Carrier of all hereditary information in the cell nucleus a double-stranded giant molecule that can be damaged by electromagnetic radiation. Damage to DNA (mutations) can trigger cancer and metabolic defects in body cells. Mutations in germ cells (genetic damage) can cause infertility, miscarriages, and birth defects. DNA has, to some extent, the ability to repair itself.

**Dose**

General term for the amount of received radiation or energy. The energy dose is measured in rad (obsolete) or gray (Gy). The equivalent dose — i.e., the actual dose absorbed by the body — is measured in rem (obsolete) or sievert (Sv). The ionization dose in air is measured in roentgen (R).

**Earth's Magnetic Field**

The magnetic field is generated by electrical systems in the Earth's interior. The magnetic poles do not precisely align with the geographic poles and shift over time. The strength of the field is greatest at the poles, weakest at the equator, and averages about 0.5 gauss in mid-latitudes. The field extends far into near-Earth space and is significantly influenced by solar particle radiation, the solar wind, and magnetic fields carried by the sun. Although the Earth's magnetic field is originally a static field, its strong interaction with solar activity gives it highly dynamic characteristics, mirroring all energy fluctuations on the sun — such as the 27–28-day rotation cycle or the 11-year sunspot cycle. Massive solar eruptions can lead to major disturbances of the magnetic field, known as geomagnetic storms. These disruptions spread across the planet within minutes, severely impairing radio communications, potentially inducing currents that can take down power grids (blackouts), and even interfere with transatlantic telephone cables. This global field response



to currents fundamentally distinguishes it from electrical fields. Apart from biologically induced fluctuations, the field also exhibits daily, monthly, and yearly variations and is complexly structured. Because charged particles interact with magnetic fields according to the laws of electrodynamics, vast current systems form in the ionosphere. These, in turn, induce currents along the magnetic field lines into the Earth — measurable as the Earth current. During disturbances, it can reach significant strengths (up to 20 amperes) and, for example, impair telephone networks.

**Ectoderm**

One of the three primary layers of tissue in the embryo, formed during the beginning of cell specialization (differentiation). From the ectoderm, the skin and the nervous system develop.

**Eddy current**

An alternating current induced in a conductor when it is placed in an alternating magnetic field or moved through a static magnetic field.

**Electric charge**

A property of a particle that causes it to attract or repel another particle with the same property. It can be positive or negative.

**Electric current**

Moving electric charge. The unit is ampere (A).

**Electric field**

The condition of space around an electric charge, which becomes noticeable through its force effect on other electric charges.

A field that describes the effect of electric charges or time-varying magnetic fields in a region of space. Electric charges exert forces on one another. In addition to charges, an electric field can also be generated by time-varying



changes in the magnetic field. Electric field strength is measured in volts per meter (V/m).

**Electric Field Lines**

Lines along which an electric charge would move in an electric field. They begin at the positive and end at the negative charge. The density of the field lines symbolizes the strength of the electric field.

**Electric potential**

The work required to move a unit electric charge to a certain location in an electric field. The unit is volt (V).

**Electric voltage**

The difference in electric potential between two points. Measured in volts (V).

**Electrical resistance**

A property of a material that impedes the flow of electric current. The unit is ohm (O).

**Electrode**

A device — usually made of metal — that connects electronic instruments with a living organism to measure electric currents or voltages within the organism or to apply electrical impulses to it.

**Electrolyte**

Any chemical compound that dissociates into charged atoms (ions) in water, allowing electric current to flow through the solution.

**Electromagnetic field (EM field)**

A force field generated and emitted by any electric current. It has both an electric and a magnetic component.



**Electromagnetic spectrum (EM spectrum)**

A way of classifying electromagnetic fields based on their oscillation frequencies. The non-ionizing electromagnetic field starts at zero (no oscillation = direct current) and extends up to visible light, which oscillates at trillions of cycles per second. Oscillations with frequencies above that of light are defined as ionizing. These include X-rays and cosmic radiation. The electromagnetic spectrum is divided into different ranges according to frequency and application. See also: Extra Low Frequency, Very Low Frequency, and Microwaves.

**Electromagnetic waves**

Due to a law of nature, the so-called law of induction, every electric current creates a surrounding magnetic field. Furthermore, the law of induction states that every time-varying magnetic field generates an electromotive force capable of moving electric charges — in other words, driving an electric current. Thus, a time-varying electric field creates a magnetic field, and this magnetic field, in turn, creates an electric field. This interaction propagates through space and is called an electromagnetic wave. It is an electric and magnetic fields that can propagate through space. To an observer at a fixed location, a passing electromagnetic wave of a specific frequency (oscillation) appears as a sinusoidal fluctuation over time in both electric and magnetic field strength. The propagation speed of electromagnetic waves in a vacuum — which also applies to light, as it is made of such waves — is approximately 300,000 kilometers per second.

**Electron**

Negatively charged elementary particle with an electric charge, which has properties of a gyroscope, a magnet, and an intrinsic spin. The electron, alongside the proton and neutron, is one of the building blocks of atoms and thus of matter. Electrons form the atomic shells, from which they can be dislodged by high-energy electromagnetic radiation. They are the charge and current carriers, especially in metallic conductors.



**Electrosmog**

This refers to all kinds and intensities of electromagnetic radiation that enter the environment during the generation, transport, and consumption of electrically generated energy.

**Electrostatic field**

An electric field whose field strength does not change over time.

**Electrostatic phenomena**

When wearing synthetic clothing or shoes with highly insulating soles (e.g., made of plastic), the clothing becomes electrically charged, and spark discharges can occur across several centimeters. To avoid the unpleasant spark jumping from your hand, you can discharge through a metal object such as a key held in your hand. In work and living spaces, highly insulating materials like curtains, carpets, bedding, or wallpaper can permanently influence the balance of air ions.

**Elektrometer**

Electrostatic measuring instrument for measuring electric charges and voltages.

**Embryogenesis**

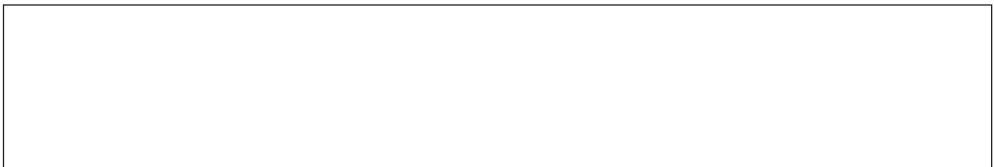
The development of a new individual from a fertilized egg until the moment of hatching or birth.

**Endoderm**

One of the three primary tissue layers in the embryo, formed at the beginning of differentiation (cell specialization). It gives rise to the digestive organs.

**Endogenous oscillator**

An internal pacemaker or rhythm generator.



**Energy**

Energy is the “capacity to perform work.” A system that contains energy can release it externally by performing work. Energy appears in various forms, such as potential, kinetic, electrical, magnetic, thermal (heat), chemical, or nuclear binding energy. The law of conservation of energy in a closed system (which includes the constancy of energy in the universe) is a fundamental principle of physics. One form of energy can be transformed into another. However, some conversions are irreversible: any form of energy can be fully converted into heat, but heat energy can never be fully converted back into another form.

**Engram**

An engram is understood to be a “memory trace” — an imprint created by stimuli in any organic substance as a lasting change. It causes a similar effect to the original stimulus when exposed to later, comparable stimuli (from: Meyers Großes Taschenlexikon, 1990 edition). Much like a computer hard drive, the brain of living beings stores a vast number of engrams. When activated, these produce similar reactions in both material and immaterial processes: in emotional perception, behavior, ways of thinking, social interactions — and also in metabolism and cellular function, acid-base balance, hormone secretions, and immune processes. Specific body regions — mapped topographically to zones of the brain (somatotopies) — react in distinct ways when their corresponding engram is activated. Activation occurs through external or internal impressions that are associated with the original stimulus of the engram. The development of cancer is often based on such engrams. In these cases, healing is only possible if the pathological program determinants are erased. Just like opening a file on a computer activates stored functions and information, the activated cerebral engram affects the body, metabolism, psyche, and behavior. A typical example is the addicted smoker: automatically, due to internal or external stimuli (social situations and metabolic processes),



the compulsion to repeat the pattern stored in the engram arises. The act of reaching for a cigarette is just as fixed as the specific way it is smoked, along with the accompanying emotions and changes in cell function — all of which are replayed according to the “program”.

**Epidermis**

The outer layer of the skin, which contains no blood vessels.

**Epigenesis**

The development of a complex organism from an originally undifferentiated form, in contrast to the idea of preformation, which assumes the organism is already fully formed in miniature.

**Epithelium**

A collective term for the skin and the lining of the digestive tract.

**Equipotential bonding**

In equipotential bonding, all electrically conductive parts that can be touched by humans are interconnected. This usually protects a person from electric shock even if one of these parts accidentally becomes electrically charged. The most well-known application is the equipotential bonding required in bathrooms, where the metal bathtub, water pipes, metal drainpipes, and potentially other piping systems are connected together.

**Equivalent dose**

Measure of the biological effect of ionizing radiation per unit of mass. The unit is sievert (Sv).

**Exudate**

A fluid, sometimes containing cells, that oozes from a wound or from the surface structure of a living organism.





**Far field**

The region at a great distance from an antenna in which the wave fronts are already planar.

**Faraday cage**

Shielding of external electric fields by metallic meshes or enclosures.

**Field**

The region surrounding a source of electric or magnetic energy in which a measurable force exists. The term “radiation” is sometimes used in this context to describe the emission of electromagnetic fields from the source, as well as their particle-like properties (see: photon).

**Foundation ground electrode**

A ground electrode made of flat or round conductors — usually laid as a closed ring — embedded in the building’s foundation below the exterior walls. It must be installed before pouring the foundation and has been a standard in construction projects since the mid-1970s. The foundation ground electrode is part of the building’s main equipotential bonding system.

**Frequency**

The number of oscillations describes how many full cycles of a periodic (regularly repeating) process occur within a certain time interval.

**Galvanotaxis**

The movement of a living organism toward or away from a source of electric current.

**Gamma radiation**

Extremely short-wave, ionizing electromagnetic radiation — even more penetrating than X-rays. Gamma radiation passes entirely through the human body.



**Gene**

A section of DNA that determines a specific trait. See also: oncogene.

**Gene expression**

The structure and activity a cell develops in response to the activation of a group of genes. For example, the activation of certain genes may cause a primitive cell to take on the structure and functions of a muscle cell.

**Glia**

Tissue made up of various types of cells, mostly glial cells, that constitutes the majority of the nervous system. It was once believed that these cells were neutral, meaning they could not generate nerve impulses. For this reason, they were thought to be incapable of transmitting information and were assumed to serve only to support and nourish the actual nerve cells. These views are now changing. Today it is known that glial cells possess electrical properties that, although not identical to those of nerve impulse transmission, enable them to play a role in communication within the body.

**Glycolysis**

Anaerobic breakdown (fermentation) of carbohydrates (glucose).

**Gray (Gy)**

The new international unit of absorbed dose for ionizing radiation. 1 gray equals 100 rad, or the amount of energy equivalent to 1 joule per kilogram of irradiated material.

**Half-life**

The period of time in which half of the existing radionuclides transform (decay).



**Hall effect**

Occurs in semiconductor components where the current flow through the semiconductor material is controlled by an external magnetic field.

**Hartmann grid**

An allegedly existing grid of “earth radiation disturbance zones,” said to be aligned in a north-south direction.

**Hertz (Hz)**

The frequency of electromagnetic radiation in oscillations per second. One oscillation per second corresponds to 1 Hz, one thousand oscillations per second equals 1 kHz (kilohertz), one million equals 1 MHz (megahertz), and one billion equals 1 GHz (gigahertz). The unit Hz is named after physicist Heinrich Hertz, who discovered electromagnetic radiation.

**H-field**

Magnetic field. Magnetic field strength is measured in A/m. When limited to the airspace around an electrical conductor, the unit tesla (T) or microtesla ( $\mu\text{T}$ ) may also be used. In this context, the conversion is:  $1 \text{ A/m} \sim 1.25 \mu\text{T}$ . An H-field originates from a conductor carrying electric current.

**Hippocampus**

A component of the limbic system.

**Homeostasis**

The ability of living organisms to maintain a constant internal environment. For example, the human body consistently maintains a steady level of oxygen dissolved in the blood by employing mechanisms that detect oxygen levels and regulate the respiratory organs accordingly.



**Hot spots**

“Hot” areas in tissue caused by overlapping of several reflected radiation components, which are thus heated more than average.

**Hydroxyindole-O-methyltransferase**

An enzyme that converts N-acetylserotonin into melatonin.

**Hypothalamus**

Part of the diencephalon contains the highest centers of the autonomic nervous system origin of the neurohypophysis (posterior pituitary).

**Induction**

The generation of an electric voltage at the ends of a conductor when the magnetic flux through it changes. If a conductor loop is moved through a changing magnetic field (e.g., in a transformer), a voltage is induced at its ends, producing an induced current.

**Latency period**

Time between stimulus and response.

**Limit value (Threshold)**

This is the value of electric field strength, magnetic field strength, or power density, the exceedance of which — under the condition of whole-body exposure — is considered a hazard. Whole-body exposure (biologically) refers to the position of a body in relation to the direction of radiation incidence. Thus, it refers to the irradiation of the entire body by an electromagnetic field..

**Macrophage insufficiency**

An insufficient number of macrophages (phagocytes — “scavenger cells”) in the blood.



**Magnetic field**

A condition in space characterized by its effect on moving electric charges. “There is a close relationship between magnetism and electricity. Every electric conductor carrying current exerts a magnetic force — proportional to the strength of the current. Wherever charge carriers are moving, a magnetic field is present. Conversely, electric current can also be generated using magnetism — for example, by moving a conductor through a magnetic field. Various units are used in the literature to describe magnetic fields” among them is magnetic induction.

**Magnetic field line**

An imaginary line along which magnetic needles align. It is a closed loop. The density of the field lines symbolizes the strength of the magnetic field.

**Magnetic field strength**

The force acting on a moving electric charge. The unit is ampere per meter (A/m).

**Magnetic induction**

Also called magnetic flux density a measure of the number of magnetic field lines per unit area. The unit is tesla (T).

**Magnetite**

A naturally occurring mineral with magnetic properties.

**Magnetosphere**

The region surrounding the Earth where the Earth’s own magnetic field has a stronger influence than the solar or interplanetary magnetic field. It extends to a distance of approximately 50,000 to 80,000 kilometers from the Earth’s surface. Of particular significance within the magnetosphere are the Van Allen belts, which are regions where charged particles are trapped by the Earth’s magnetic field.



**Magnetotactic**

Active movement toward a magnetic pole.

**Main equipotential bonding**

An equipotential bonding in the area of a building's main electrical connections. The building's foundation grounding electrode — if present — is also included in the main equipotential bonding.

**Melatonin**

A hormone produced by the pineal gland that regulates the brain's activity level.

**Mesoderm**

One of the three primary tissue layers in the embryo, formed at the onset of differentiation (cell specialization). In adults, it develops into the muscular and circulatory systems.

**Microwaves**

The portion of the electromagnetic spectrum with frequencies ranging from 500 million oscillations per second (500 MHz) up to the frequencies of visible light.

**Millirem**

One-thousandth of a rem.

**Mitosis**

The process of cell division.

**Modulation**

Superimposition of one waveform on another — for example, the signal waveform from a transmitter.



**Motion detector**

An electric sensor that reacts to changes in temperature and can trigger a switch, e.g., to turn on a light bulb. A temperature change may occur when a person (or animal) enters the sensor's field of view. Motion detectors are used, among other things, to automatically switch yard and garden lights.

**N-acetyltransferase**

An enzyme that converts serotonin into N-acetylserotonin.

**Near field**

The region close to an antenna where strong variations in wave intensity occur due to interference.

**Necrosis**

The breakdown of dead tissue or dead cells.

**Neoplast**

An unspecialized embryonic cell that persists in the adult bodies of certain primitive animals and is recruited to the site of injury to participate in regenerative healing.

**Neuroepidermal junction**

A structure that forms at the site of tissue loss in regenerating animals, composed of skin and nerve fibers. This structure generates specific electric currents that then trigger regeneration.

**Neurohormone**

A chemical produced by nerve cells that acts on other nerve cells or different parts of the body.



**Neuron**

A nerve cell.

**Neurotransmitter**

A chemical that transmits nerve impulses across a synapse.

**Neutron**

An electrically neutral particle of the atomic nucleus.

**Non-ionizing radiation**

The part of the electromagnetic spectrum that extends from zero frequency up to the frequencies of visible light. This type of radiation does not carry enough energy to ionize atoms in the chemical substances of the body.

**Nonunion**

A bone fracture that fails to heal.

**Ohm**

Electric resistance is measured in ohms and denoted by the symbol  $R$ . A thin wire offers more resistance to current flow than a thick one. This principle is used in light bulbs and heating elements to generate light and heat.

**Oncogene**

A cancer-causing gene. These genes are normally repressed, but various factors — including viral infections, carcinogenic chemicals, and both non-ionizing and ionizing radiation — can activate them.

**Oscillation**

The term “oscillation” is used here in a sense that extends beyond the technical definition of an electromagnetic wave. With scientifically defined con-





cepts, not all phenomena of life can be described. Compared to the unimaginably vast realm occupied by the diverse manifestations of reality, the scope of what can be understood through scientific laws often appears like a grain of sand. Feelings, behaviors, sympathy or antipathy toward other people, the significant effects of a glance at just the right moment, the thought of a joyful event — all of these are expressions of biological systems that cannot be precisely explained using the terminology of physics, and yet no one denies the existence of these phenomena. In biological systems, such phenomena represent crucial determinants of life processes. The transition between the domain of electrophysiologically explainable phenomena and the realm of what can no longer be scientifically grasped is fluid. It is precisely in this transitional zone that one must place a living being's specific sensitivity to environmental stimuli. On the one hand, electromagnetic oscillations of light — through their color-specific frequencies — trigger differing emotional and biochemical reactions in humans. On the other hand, emotional states alter the instability of the biological system in relation to electromagnetic signals (such as colors), just as they influence the immunity and sensitivity of the organism to specific frequencies (such as red or blue). Thus, physically definable processes in the body and manifestations of life that can no longer be explained physically are inextricably linked in a living system, even if they cannot be clearly separated. Neither technology nor language provides a concept equally valid on both sides to describe this fluid transition from the world of physics into the world of physiology and psychology. For this reason, this continuum is deliberately referred to by the imprecise term “oscillation.” On the one hand, the term “oscillation” implies the physical meaning of the electromagnetic wave. On the other hand, it also refers to “life energy,” which has been labeled with different terms across many cultures and philosophies — such as Chi, Prana, Orgone, bioplasma energy, aether — without ever being clearly defined in physical terms. Thus, the term describes both the physically measurable electromagnetic emissions of matter and the more subtle “radiations” of the material and immaterial components of a living being.



From a technical standpoint, the electromagnetic impulse is characterized by its periodicity, amplitude, phase, waveform, and vector — describing how a stimulus propagates. Beyond this, the term “oscillation” also has broader linguistic meanings. For example, one might say a room “has good energy” or “emits positive vibes.” If one wishes to define “oscillation” in a broader, metaphorical sense — that is, in reference to processes other than purely physical ones — one might speak of “effects” or “influences” exerted by a material substance or an immaterial medium. In this context, the agent causing such effects or influences is referred to as an “oscillation.”

### **Osteogenesis**

The formation of new bone — during embryonic development, postnatal growth, or the healing of fractures.

### **Osteomyelitis**

Inflammation of the bone marrow (often accompanied by inflammation of the bone itself).

### **Osteoplast**

A cell that forms bone by producing a specific type of collagen that constitutes the basic framework of bone.

### **Pacemaker**

A rhythm-generating structure or cell.

### **Pathological Energy Deficiency (PED)**

To maintain cellular activity, the cell requires adenosine triphosphate (ATP). If a disruption of the cellular environment occurs due to any cause, this results in a lack of ATP, which manifests as a so-called pathological energy deficit.



**PEMF**

Pulsed Electromagnetic Field.

**PEN conductor**

A conductor used in TN electrical systems that simultaneously serves as both protective earth (PE) and neutral conductor (N). It was formerly known as the “neutral conductor.”

**Perineural cell**

One of several types of cells that surround nerve cells.

**Periosteum**

A layer of tough, fibrous collagen that surrounds every bone. It contains cells that can transform into osteoblasts during fracture healing.

**Phase**

The temporal distance of an oscillatory state from a given reference state.

**Photon**

The theoretical particle that carries energy within an electromagnetic field.

**Physiology**

The science of normal biological processes.

**Piezoelectric material**

A substance that converts mechanical stress into electrical energy it generates an electric voltage when compressed or bent.

**Pineal gland**

A small structure located in the center of the head with connections to the brain. It originally represented the “third eye” in primitive animals, once located at the top of the skull. See also: Melatonin.



**Plane wave**

Electromagnetic wave at a large distance from its source. The wave fronts are flat electric and magnetic fields oscillate in phase and are oriented perpendicular to each other.

**Potential**

A physical quantity used to describe a force field.

**Protective insulation**

One of several possible safety measures used especially in electrical household appliances to protect humans from dangerous electric shock. It is considered particularly reliable and is based on the principle that all parts carrying voltage under normal operation are doubly insulated. Devices with protective insulation are marked by the manufacturer with a symbol (a square within a square).

**PTC behavior**

A characteristic of all pure metals where electrical resistance increases with rising temperature (positive temperature coefficient).

**Pyroelectric material**

A substance that converts thermal energy into electrical energy it generates an electric voltage when heated.

**Quantum of radiation**

According to the particle theory, the smallest possible amount of an electromagnetic wave (radiation) with a specific frequency.

**rad**

An older unit of absorbed radiation dose.



**Radioactivity**

A property of certain isotopes that spontaneously emit alpha or beta particles, gamma rays, photons, or X-rays.

**Radiofrequency = High frequency (HF)**

The range of the electromagnetic spectrum that extends from 500,000 oscillations per second (500 kHz) up to 500 million oscillations per second (500 MHz).

**Receptors**

Biological structures that function as stimulus receivers, detecting specific types of stimuli and transmitting this information to the central nervous system.

**rem**

An older unit of equivalent dose it takes into account the different biological effectiveness of various types of radiation. The rem is calculated from the received energy (in rad or gray), multiplied by a quality factor representing the biological impact of the specific type of radiation. For example, 1 rad of beta or gamma radiation equals 1 rem (which is 1,000 millirem) for alpha radiation, due to its higher biological danger, 1 rad equals 10 rem.

**Residual-current device (RCD)**

Also known as a residual-current circuit breaker or ground fault circuit interrupter (GFCI). A safety device that disconnects the power supply within 0.2 seconds if a current of sufficient strength flows to the ground, for example due to an insulation fault.

**Resonance**

This term generally refers to a situation in which some aspect of a force —



such as sound waves — has a physical property that corresponds to a property of a physical structure — such as the mass of a building — so that the sound waves cause vibrations in the structure. In the case of electromagnetic radiation, resonance occurs when the energy of the radiation is optimally transferred to the physical structure.

**Roentgen (R)**

Unit of so-called ionizing dose, today calculated by the formula coulombs per kilogram. (1 coulomb — the unit of electric charge — corresponds to 1 ampere-second.)

**Root mean square (RMS) value**

The quadratic mean of a time-varying quantity, e.g., the amount of electric current a direct current would need to produce the same thermal effect.

**Salamander**

A member of a group of amphibians related to frogs but retaining a tail throughout life. Salamanders live in water or moist environments. Most are about 5 to 8 cm long. Because they are vertebrates with anatomy similar to that of humans and can regenerate many body parts very effectively, salamanders are among the most frequently used animals in regeneration research.

**Schwann cells**

Cells that surround all nerves located outside of the brain and spinal cord.

**Semiconductivity**

The conduction of electric current through the movement of electrons or the absence of electrons (also known as “holes”) through a crystal lattice. Semiconductivity is the third and last discovered form of electrical conductivity. The other types are metallic conduction, in which electrons move through a metallic conductor (e.g., a wire), and ionic conduction, where charged atoms



(ions) move through a solution. Semiconductors transport less current than metallic conductors but are far more versatile than the other two types. Semiconductors are the basic material of transistors and integrated circuits, as used in most modern electronic devices.

**Shielding**

An electrically conductive layer, mesh, foil, or a coaxial arrangement of several thin conductors that encloses one or more wires of a cable or electrical line. The purpose of shielding is to capture and attenuate the electric field.

**Sievert (Sv)**

Since 1986, the internationally recognized unit of equivalent dose (previous unit: rem). 100 rem equals 1 sievert. According to the most recent system, the biological effectiveness of beta or gamma radiation with an energy of 1 gray is exactly 1 sievert the biological effectiveness of 1 gray of alpha radiation, by contrast, is 10 sieverts.

**Specific Absorption Rate (SAR)**

The amount of electromagnetic wave power absorbed by a body per unit of mass.

**Spectrum**

An organizational form for a quantity of information based on a shared characteristic — for example, a spectrum of neurological diseases. See also: Electromagnetic Spectrum. Very Low Frequency (VLF) = a range of the electromagnetic spectrum extending from 1000 oscillations per second (up to approximately 500 kHz).

**Spherics (also called Atmospherics)**

Atmospheric impulse radiation originating, among other things, from global thunderstorm activity. Every lightning discharge emits a broad spectrum



of electromagnetic waves that propagate at the speed of light. These very low-frequency, and therefore very long, waves travel extremely well along the Earth's surface, underground, and even underwater. Some of them are also reflected or refracted by the ionosphere. Due to these reflections, resonance phenomena can occur. In the frequency range of spherics, two sub-ranges can be distinguished: One in the VLF segment between 1 and 30 kilohertz, with an energy peak at 5–10 kilohertz and one in the ELF segment with a peak between 10 and 200 hertz. The ELF portion originates from global thunderstorm activity, while the VLF radiation comes more from local storm systems. Another cause of spherics includes weather events such as warm and cold fronts, overrunning processes, Foehn winds, etc., from which characteristic spherics patterns can be measured.

**Stray currents**

Electrical currents that flow outside of designated conductors, for example through the ground, building walls, or pipelines.

**Superconductivity**

The conduction of an electric current through a specific material that, under certain conditions, offers no resistance to the flow of current. Such a current continues indefinitely without loss, as long as the required conditions are maintained.

**Synergy**

The combined effect of multiple influences acting in an additive or multiplicative way.

**Tesla**

Unit of measurement for magnetic flux density.





**Thermal effects**

Effects caused by the heating of tissue or organs.

**Thyristor**

A controllable semiconductor component in which the flow of current is triggered by a control pulse.

**Time-variable**

A term used to describe conditions that change over time — for example, time-variable electromagnetic fields, where the rate of change is expressed as frequency (number of oscillations per unit of time).

**TN system**

A particular type of electrical power supply system (especially in public electricity supply) in which the protective earth conductor (PE) of the electrical installation is connected to a specific system conductor (at a central point of the installation). The local electricity provider will advise whether this configuration is permitted. Approximately 70% of low-voltage public power networks in Germany are likely TN systems. This type of protective measure was previously known as “protective earthing.”

**Transmitting power**

The total amount of electrical power emitted by an antenna in the form of electromagnetic waves.

**TT system**

Another specific type of power supply system (especially in public electricity networks), in which the protective earth conductor of the connected electrical installation is connected locally to an effective grounding electrode, without being connected to any system conductor. In the event of an insulation fault, protection in a TT system is generally provided by residual-current devices (RCDs).



**Vertebrates**

All animals that possess a backbone, including all fish, amphibians, reptiles, birds, and mammals. All vertebrates share the same basic anatomical structure, including a backbone, four limbs, and a similar arrangement of the muscular, nervous, and circulatory systems.

**Volt**

Electric voltage is measured in volts (V) and denoted by the symbol U. This represents the pressure with which electricity is fed from the power plant into the transmission lines.

**Watt**

The amount of electrical power consumed by an electrical device or lamp is measured in watts (W). 1,000 watts equal one kilowatt (kW).

**Wave bands**

These are subdivisions of the entire electromagnetic wave spectrum. In radio technology, the following terms are used: Centimeter waves: 10 cm – 100 cm — Ultrashort waves (Decameter waves): 10 m – 100 m — Medium waves: 1,000 m – 10,000 m — Long waves: greater than 10 km (kilometric waves, myriametric waves).

**Wavelength**

The distance a wave travels during the duration of one oscillation.

**X-rays (Roentgen radiation)**

An ionizing electromagnetic radiation, less energetic than gamma rays.





## Appendix



Participants in the Development of QRS

FIELD	NAME	ROLE
Research		
Signal Theory	Prof. Dr.-Ing. habil. M. Krauß	Research Director and Co-Inventor
Mathematical Physics	Dr. rer. nat. phil. W. Bauer	Management
Semiconductor Technology and Geophysics	Prof. Dr. habil. mult. J. Waldmann	Development Director
Electro-Physics	Prof. Dr.-Ing. H. L. König	Co-Inventor (QRS Patent)
Cellular Biophysics	Prof. Dr. M. Blank	QRS Ion Transport Patent Validation
Microbiology	Prof. Dr. med. J. Addae	QRS Ion Transport Patent Validation
Molecular Physics	Prof. Dr. A. A. Marino	QRS Amplitude Window Patent Validation
Bioelectrochemistry	Dr. rer. nat. D. Derlat	Scientific Work Ion Transport
Microbiology	Dr. R. Mittenzweg	Clinical Testing
Behavioral Physiology	Prof. Dr. M. Gahr	Increase in Melatonin
Biophysics	Prof. Dr. W. A. Kafka	Changes Cardiovascular Parameters
Cybernetics / Process Engineering	Dr. E. G. Fischer	Co-Inventor (QRS Patent)
Biophysics / Radiation Protection	Prof. Dr. Dr. A. Varga	Device Development
Medical Device Technology	Prof. Dr.-Ing. J. M. Jovanovic	Co-Inventor (QRS Patent)
Biometry & Mathematics	Prof. Dr. R. B. Pelka	Expert Reports & Study Evaluation
Development		
Biophysics	Prof. Dr. W. A. Kafka	Device Development
Artificial Intelligence	Prof. Dr. R. C. Posthoff	Device Development
Spectral Analytics	Prof. Dr. K. Meyer-Waarden	Device Development Pacemaker Analysis



Information Transfer	Prof. Dr. habil. G. Witschel	Device Development Frequency Analyses
Electrical Engineering	Dipl.-Ing. R. Witt	Patent QRS Test Ion Transport
Electronics	Dipl.-Ing. Altvater	Device Development
IL Process Engineering	Dipl.-Ing. Müller-Pathle	Device Development
Bio-Sensor Technology	Dipl.-Ing. K. Krause	Device Development
PC Interface Technology	Dipl.-Ing. P. Graller	Device Development Medical Software
Software Development	Dipl.-Ing. Öhlenchläger	Device Development PC Software
Diagnostics	Dr.-Ing. S. Mandler	Device Development (NIRP)
Microsensor Technology	Dr.-Ing. H. J. Freitag	Device Development (Biofeedback)
Certification	Dipl.-Ing. G. Wallmann	Approval and Certification
Quality & Risk Management	Dipl.-Ing. M. Herrmann	Monitoring and Statistics
Quality Liaison with Authorities	Dr. päd. S. Jugel	Government Contact / Executive Director
<b>Medical testing</b>		
Study Design	Univ.-Prof. Dr. R. B. Pelka	Study Review and Evaluation
Study Supervision	Univ.-Prof. Dr. rer. nat. G. Fischer	Study Monitoring
Space Medicine	Prof. Dr. med. V. M. Baranov	Study Space Conditions
Oncology	Prof. Dr. med. M. Grandi	Study (Italy) Chemotherapy
Oncology	Dr. med. D. J. Benjamin	Study (Australia) Pain Therapy
Neurology	Univ.-Prof. Dr. R. Saunders	Study (Trinidad) Parkinson's
Neurology	Dr. med. Bodenschatz / Tröger	Study (Germany) Parkinson's
Rheumatology	Univ.-Prof. Dr. med. E. Palme	Studies (Germany) Spinal Disc Conditions
Orthopedics	Dr. med. Th. Hennings	Study (Germany) Osteoporosis



Orthopedics	Prof. Dr. med. R. O. Becker (USA)	Scientific Evidence (USA)
Orthopedics	Dr. med. Daskalova	Study (Bulgaria) Osteoporosis, Diabetes
Orthopedics	Dr. med. W. Pawluk	Study (USA) Post-traumatic Pain
Surgery	Dr. med. D. Man, Dr. Pilla	Study (USA) Plastic Surgery
Pediatrics	Dr. med. M. Fravel	Study (Australia) Autism
Dermatology	Dr. med. L. Gilli	Study (CH) Atopic Dermatitis
Angiology	Dr. med. G. Grohmann	Study (Germany) Cardiovascular Measurements
Ophthalmology	Dr. med. V. Rasch	Study (Germany) Retinal Circulation
Occupational Medicine	Dr. med. M. L. Fuhrmeister (Siemens)	Study (Germany) Immune Stimulation, Relaxation
Dentistry	Prof. Dr. habil. mult. J. Waldmann	Study (Germany) Pulp Blood Flow
Internal Medicine	Dr. med. W. Haas	Study (Germany) Numerous Case Re- ports
Neurology	Dr. med. W. Schmidt	Study (Austria) Stroke
Neurology	Dr. med. A. Etou	Study (Germany) Stroke and Parkinson's (Lit.)
Pharmacology	Dr. med. P. Lorenz	Literature Studies and Research
Stress Research	Prof. Dr. S. Portas	Study (Austria) Stress Reduction
General Medicine	Dr. med. J. Barovic	Study (Slovenia) Gonarthrosis
General Medicine	Prof. Dr. med. Z. Turk	Study (Slovenia) Gonarthrosis
Sports Medicine	Prof. Dr. R. Saunders	Study Bone Load



Sports Medicine	Prof. Dr. R. Süßmuth	Study Lactate, etc.
Sports Medicine	Dr. med. Faber Prof. Dr. Pelka	Study Lactate, etc.
Geriatrics	Prim. Dr. med. E. Stoiser	Study Wound Healing
Orthopedics	Prof. Dr. med. Zichner Dr. Funk	Dissertation Osteoporosis
<b>Medical Hotline</b>		
General Medicine	Dr. med. M. L. Baude	Customer Support / Application Protocols
General Medicine	Dr. med. H. Bilz	Customer Support / Application Protocols
Internal Medicine	Dr. med. M. Haas	Lectures / Symposia
General Medicine	Dr. med. Nemec	Lectures / Symposia
Internal Medicine	Dr. med. Univ. R. Herwig	Lectures / Symposia
Education & Training	Prof. Dr. Fischer Academy	---
<b>Education &amp; Training – Prof. Dr. Fischer Academy</b>		
Education – Pedagogy	Prof. Dr. E. Meier	Education Board of Directors
Education – Pedagogy	Dr. S. Jügel	Education Director
Education – Physics	Dr. rer. nat. W. Bauer	Physics Education
Law (UWG + HWG)	Dr. jur. P. Philipp	Medical Law HWG
Quantum Medicine	Dr. E. G. Fischer	Continuing Education for Physicians
<b>Patents and Publications</b>		
Patent Law Physics	Dipl.-Ing. V. Kruspig	QRS New Patents
Patent Law Electrophysics	Dipl.-Ing. M. Schlenk	QRS Old Patents
Patent Law Mech. Eng.	Dipl.-Ing. E. Engelhardt	QRS Old Patents
Patent Law Mech. Eng.	Dipl.-Ing. R. Schmid	QRS New Patent





Univ.-Prof. Dr. Gerald Fischer

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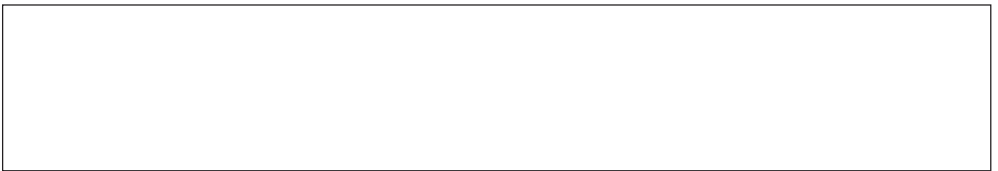
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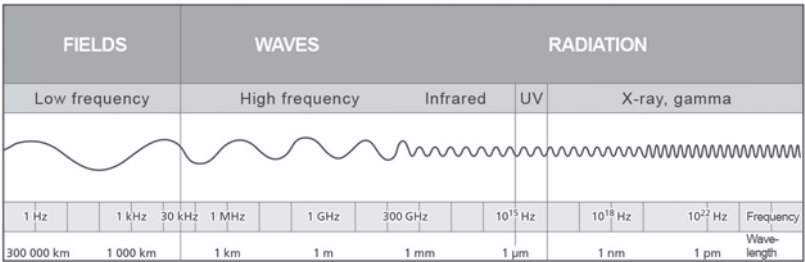
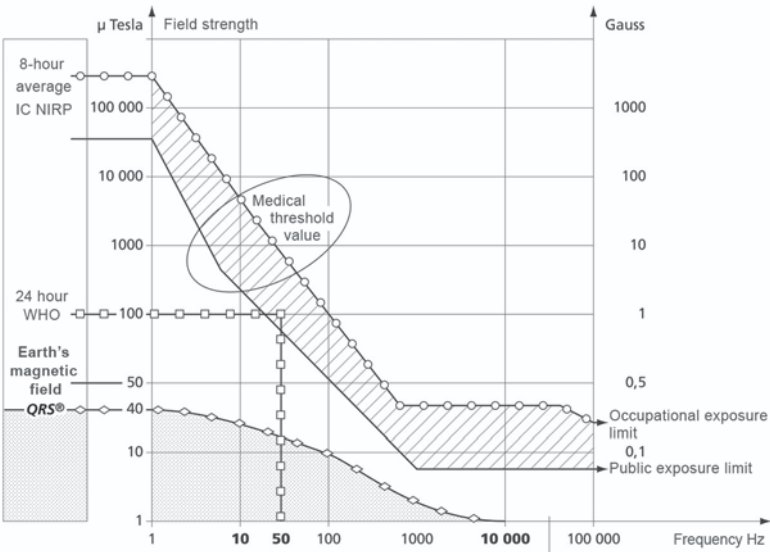
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## Limits for Pulsed Magnetic Fields

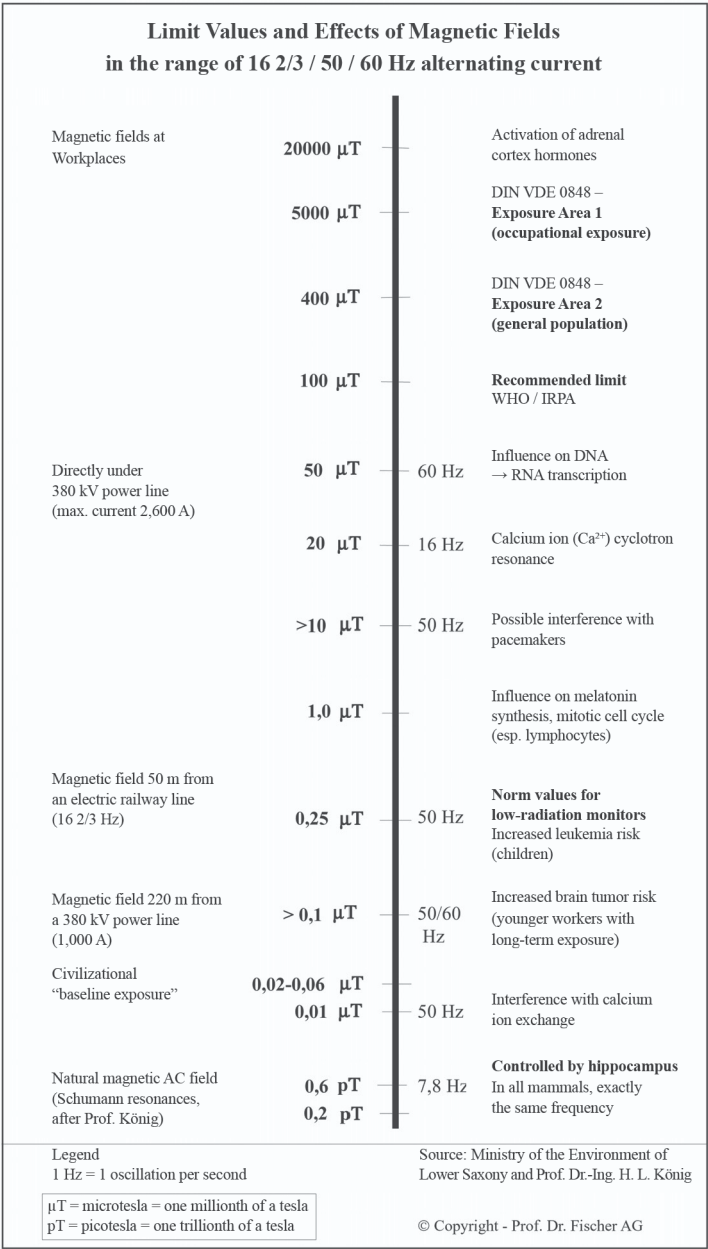
The International Commission on Non-Ionizing Radiation Protection (ICNIRP, World Health Organization) published in 1998 the guideline: “Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (up to 300 GHz)”. Based on approximately 200 publications, this guideline defines reference values (exposure limits) for time-varying electric, magnetic, and electromagnetic fields. (Source: Austrian Federal Institute for Health Care and Prof. Dipl.-Ing. Dr. Norbert Leitgeb)





ELECTROMAGNETIC FIELDS					
SOURCE	Frequency in Hertz (Hz)	Distance in cm	Field Strength in Tesla		
Detection limit TODAY			0.01 picotesla (trillionth)		
Biological Fields		NATURAL FIELDS	(piko = trillionth pT)		
Eyes	100		0,1	picoTesla	
Nerve endings			0,1	picoTesla	
Brain	0,3 - 60		1,0	picoTesla	
Heart	0,1 - 0,2		50	picoTesla	
Natural Fields			micro = millionth (µT )		
Cosmic fields	5 - 10		0,001	microtesla	
Earth's magnetic field (0.5 gauss)	6 - 8		50	microtesla	
Sun	3 • 10 <sup>14</sup>			microtesla	
*QUANTRON Therapy (QRS)	3-1000		3	30	microtesla
There are no single frequencies in nature — only frequency bands.					
Technical Fields		TECHNICAL FIELDS			
100-watt light bulb	50		30	0,27	microtesla
Telephone (cell phone)	0,9 GHz		3	24,0	microtesla
Electric iron	50		30	1,0	microtesla
Electric shaver	50		30	1,2	microtesla
Television	50		30	4,0	microtesla
Electric underfloor heating	50		30	8,0	microtesla
Electric stove	50		30	20,0	microtesla
Space heater	50		30	40,0	microtesla
High-voltage power line	50		5000	50,0	microtesla
Magnetic therapy	1 - 200		30	10.000 <sup>max.</sup>	microtesla
MRI scanner				150.000	microtesla
Recommended Limit Values					
● WHO / IRPA	50/60			100	microtesla
● VDE Germany	50/60		400	microtesla	
● USA	50/60		200	microtesla	
● Russia	50/60		0,01	microtesla	
● Sweden	50/60		0,001	microtesla	
* Every form of spatially moving electric charge creates an electric current — and thus an alternating magnetic field. This means: Every physical movement generates electro-magnetic currents, which are essential for all biological processes.					
Source: Prof. Dr.-Ing. H.L. König and Dr. E.G. Fischer			© Copyright - Prof. Dr. Fischer AG - FL		





**QRS** A WORLDWIDE PATENTED SYSTEM  
**The Frequency of Life**

**WHAT IS PATENTED?**

**1**

**THE transport of ions and protons**

e.g.,  $H^+$ ,  $Ca^{2+}$ ,  $Na^+$ ,  $K^+$ ,  $Cl^-$ ,  $Mg^{2+}$   
Hydrogen, Calcium, Sodium, Potassium, Chloride, Magnesium  
Improved cellular supply and removal of metabolic waste and toxins.  
Increase in oxygen ( $O_2$ ) by 80% to 900% – ATP formation (energy).  
Transport of substances even through solidified or weakened structures.

**2**

**THE Activation of the body's own oscillations and frequencies**

The resonance phenomenon  
Blood vessels, membranes, receptors, oscillators, blocked regulatory circuits.

**3**

**The (QRS) BIOLOGICAL AMPLITUDE WINDOW**

(QRS) Biological window



« Frequency »  
« Amplitude »

Auditory window

Tone = high – low  
Tone = loud – soft

Reinforces the immune system, ion transport, protein formation. Builds or balances the bioelectric potential of cell energy, metabolism, and hormone production. Biological follow-up functions.

**4**

**Effect verification through biofeedback**

The system self-regulates – automatically and individually – until the desired effect is achieved (amplitude window). No person is like another.

**5**

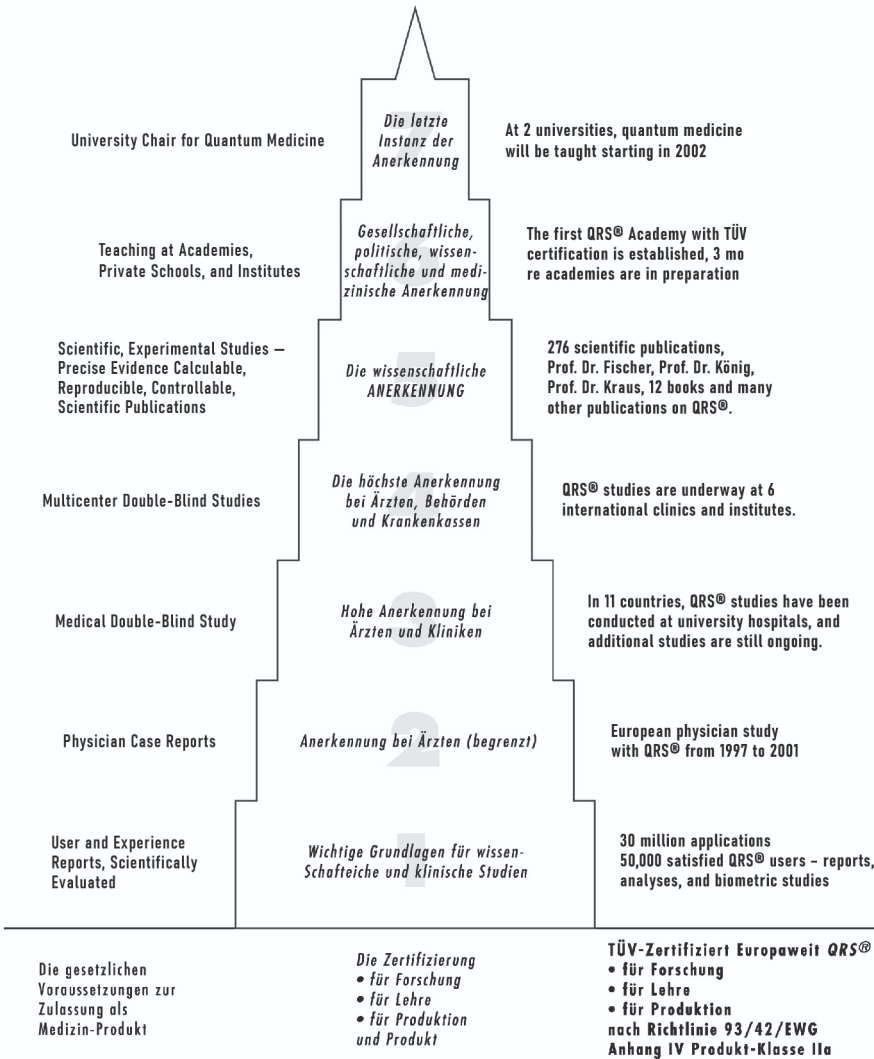
**Elimination of disruptive electromagnetic influences from outside ("electrosmog")**

This is the most important prerequisite for any magnetic field therapy.  
Otherwise, therapeutic irradiation turns into electrosmog.

**QRS** – The first magnetic field therapy system that is **scientifically proven, clinically tested, certified as a medical device, approved** throughout Europe, and **patented** worldwide.

**PATHOGENESIS – The study of diseases – conventional medicine**  
**SALUTOGENESIS – The study of health – Quantum medicine!**

# 7 Steps to Scientific Recognition



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