QRS 1010 Pelvicenter

Repetitive peripheral magnetic stimulation to correct functional pelvic floor disorders

Scientific documentation and medical information

Training of the gluteal muscles, cellulite reduction

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Training with additional benefits

One of the positive side effects of the QRS Pelvicenter rPMS is the enormous muscular training effect on the gluteal and pelvic muscles. In addition to the pelvic floor muscles, these muscles react impressively to the rPMS therapy with hypertrophy or an increase in strength.

According to secondary observations, the female problem areas on the buttocks and thighs also seem to participate significantly as a "side effect" of rPMS pelvic floor therapy in the sense of a "body shaping" and anti-cellulite effect (smoothing of cellulite contours).

The gluteal muscles for power transfer

The gluteus musculature is the largest muscle group in the body that enables the sacroiliac joint to transmit loads from the trunk of the body to the legs [1] . In addition, it is part of the "core", the reflective main stabilization element in all movements. There is hardly a sport in which hip abduction is not essential. Its function is primarily carried out by the gluteus medius (GMe) [2] , after which it stabilizes the pelvis in one-legged posture, for example [3] .

The gluteus maximus (GM) is of great importance, as it is responsible for hip extension and external rotation [4] , [5] and is “the” muscle for climbing [6] and running in general, since here he stabilizes the trunk against bending [7] . Of course, the connection of the gluteus muscles with the adductors and ischiocrural muscles as well as the thigh muscles originating from the pelvis also contributes to this.

Overall, the gluteus muscles allow weight-bearing movements because they aid in load transfer through the hip joint [8] . They thereby provide local structural stability and thus ensure correct knee and hip alignment [9] , [10] . As a result, muscular deficits change the pelvi-femoral biomechanics [11] and increase the risk of injury to the lower extremities, especially in athletes (also due to disruption of the core) [12] , [13] , [14] , [15] , [16] , [17] , [18] .

At first glance, an inferior aspect to the health or sporting relevance of a pronounced gluteus musculature is the modern trend towards aesthetic self-optimization. The desire for beauty is not an invention of our time, but optimizing and shaping one's own body is a central purpose in life for many people today.

cellulite

One of the most hated cosmetic problems in women is cellulite (orange peel skin). It occurs in a more or less pronounced form in about 85% (80 - 95% [19], [20], [21]) of all adult women, regardless of their ethnic origin [22]. In our fat-phobic times, the high proportion of cellulite may be understandable, but "thin" women also suffer from signs of cellulite, even sporty teenagers or competitive athletes are not immune to cellulite. In addition, it can be seen that increased muscle mass also has a negative correlation with cellulite [23].

Strictly speaking, cellulite is not a disease, but a cosmetically disturbing formation in the form of dents or hollows, especially in the buttocks area, on the thighs and on the stomach, whereby gender-specific peculiarities in skin structure, alteration of the connective tissue septa, vascular changes and inflammatory processes play a role. The basis is a genetic disposition, which becomes noticeable through structural changes in the dermis and microcirculatory changes.

Inadequate but all the more excessive fat storage in the subcutaneous fatty tissue (hypodermis) usually plays a role, with overflowing fat cell storage pressing on the overlying skin layers (dermis and epidermis), so that unsightly waves form on the surface [24]. In addition, there is an anatomical peculiarity of the woman behind it, which differs from that of the man in its tissue structure due to an increased ability of the connective tissue to stretch (pregnancy).

The top layer of subcutaneous tissue (hypodermis) consists of detached fat cell chambers (“filled with fat cells”), separated from each other by vertical connective tissue septa [25], [26], [27], [28]. In the case of a genetically hormonally predisposed increase in fat cells [29], their spatial urge to expand is aligned upwards in the sense of the dynamics of least resistance. The deteriorated appearance of cellulite with weight gain is also explained by the fact that the fixation of the skin to the fascia caused by the septa automatically causes a deepening [30].

In men, on the other hand, a transverse septum prevents vertical pressure equalization. Cellulite also has a self-reinforcing effect, because the bulging of the tissue between the septa impairs blood circulation and lymphatic drainage.

QRS pelvic center effect

rPMS is resistance training and always activates the growth hormone IGF-1 [31]. This has strong anabolic properties [32] and is still up to 72 hours after training at a high level [33]. In addition, the androgen receptor density also increases.

Just like IGF-1, testosterone is activated by exercise or strong muscle contractions, which increases the rate of protein synthesis and prevents protein breakdown [34].

Basically, training (depending on resistance or intensity) leads to micro-injuries, which are followed by inflammation with a catabolic reaction [35], [36]. This muscle degeneration stimulates those repair processes in which so-called satellite cells play an important role. These sit between the sarcolem and basement membrane [37], [38] and appear as “myogenic stem cells” only after injuries and repair processes within 24 hours [39], [40].

Scope of treatment and duration of therapy

With the rPMS field of action of the QRS Pelvicenter, the focus of treatment can be directed to the gluteus muscle group through the appropriate adjustment options. In addition, the effective field frequency can be adjusted to the extent that a high increase in blood flow in the gluteus area is made possible. The intensity can be chosen so that the muscular load (resistance) is greater than that of a leg press or squat, but with far less effort.

As a rule, an increase in strength from the 10th therapy session is very likely. An improvement in the body silhouette and an improvement in cellulite contours can be expected in a period from the 10th to the 20th treatment. The positive side effect, namely the strengthening of the entire core, usually occurs from the 10th therapy session on the QRS Pelvicenter, regardless of age and gender.

summary

The beauty industry has already discovered the Pelvicenter rPMS for itself because this highly effective muscle stimulation of the gluteal muscles has a positive effect on strength development as well as on the shaping of the body silhouette and existing cellulite contours.

This has the useful side effect of not only making the muscular performance visible, but also with a strong increase in muscle strength and an improvement in the ability to balance, which is particularly important in the aging process.

With the QRS Pelvicenter, the previously described does not work according to the principle of hope, but on the basis of scientific knowledge and the study situation.

Sources

[1] Yoo WG: Effects of individual strengthening exercises on subdivisions of the gluteus medius in a patient with sacroiliac joint pain. J Phys Ther Sci, 2014, 26: 1501-1502
[2] Lercerf G, Fessy MH, Philippot R et al. Femoral offset: Anatomical concept, definition, assessment, implications for preoperative templating and hip arthroplasty. Orthoptraumatol: Surg Research. 2009, 95(3): 210-219
[3] Debrunner AM. Orthopaedics, Orthopedic Surgery. Patient-oriented diagnostics and therapy of the musculoskeletal system. Huber Verlag Bern. 2005
[4] Nakagawa TH. Muniz TB, Baldon RdE M et al. The effect of additional strengthening of hip abductor and lateral rotator muscles in patellofemoral pain syndrome: A randomized controlled pilot study. Clinic Rehab. 2008;22: 1051-1060 [5] Reiman MP, Bolgla LA, Loudon JK . A literature review of studies evaluating gluteus maximus and gluteus medius activation during rehabilitation exercises. Physio Theory Practice. 2012;28(4): 257–268 [6] Zimmermann CL, Cook TM , Bravard
MS et al. Effects of stair-stepping exercise direction and cadence on EMG activity of selected lower extremity muscle groups. J.Orthop. Sports Phys. thermal 1994; 19:173-180
[7] Marzke MW, Longhill JM, Rasmussen SA. Gluteus maximus muscle function and the origin of hominid bipedality. At the J Phys Anthropol. 1988; 77: 519-528
[8] Lee D. Instability of the sacroiliac joint and the consequences to gait. J Manual Manip Ther. 1996;4:22-29 [9
] Presswood L, Cronin J, Keogh JW et al. Gluteus medius: applied anatomy, dysfunction, assessment, and progressive strengthening. Strength Cond J. 2008;30: 41-53 [
10] Lee SP, Powers C. Description of a weigh-bearing method to assess hip abductor and external rotator muscle performance. J Orthop. 2013; 6(43): 392-397
[11] French H, Dunleavy M, Cusack T. Activation levels of gluteus medius during therapeutic exercise as measured with electromyography: A structured review. Phys Ther Rev. 2010; 15:92-105
[12] Leetun DT, Ireland ML, Willson JD et al. Core stability measures as risk factors for lower extremity injury in athletes. Med Sci Sports Exerc. 2004; 36: 926-934
[13] Souza RB, Powers CM. Differences in hip kinematics, muscle strength, and muscle activation between subjects with and without patellofemoral pain. J Orthop Sports Phys Ther. 2009;39: 12-19 [
14] Lee D. Instability of the sacroiliac joint and the consequences to gait. J Manual Manip Ther. 1996; 4:22-29
[15] Hollman JH, Ginos BE, Kozuchowsk J et al. Relationships between knee valgus, hip - muscle strength, and hip - muscle recruitment during a single - limb step - down. J Sports Rehab. 2009:18: 104-117 [16] Hamstra-Wright KL, Blive KH .
HYPERLINK "https://pelvicenter.com/wp-admin/post.php?post=651&action=edit" \l "_ednref16" Effective exercises for targeting the gluteus medius. J Sport Rehab.2012;21(3):296-300 [17
] Ireland ML, Willson JD, Ballantyne BT et al. Hip strength in females with and without patellofemoral pain. J Orthop Sports Phys Ther. 2003;33: 671-676 [
18] Powers CM. The influence of altered lower extremity kinematics on patellofemoral joint dysfunction: a theoretical perspective. J Orthop Sports Phys Ther. 2003;33: 639-646 [
19] Pavicic T, Borelli C, Korting HC. Cellulite--the greatest skin problem in healthy people? An approach. J Dtsch Dermatol Ges. 2006;4(10):861-70
[20] Avram MM. Cellulite: a review of its physiology and treatment. J Cosmetic Laser Ther. 2005; 7: 1-5
[21] Luebberding S, Krueger N, Sadick NS. Cellulite: an evidence-based review. Am J Clin Dermatol. 2015; 16(4): 243-256
[22] Harvard Women's Health Watch cellulite meltdown. Harv Health Pub Group. 1998; 5, 7
[23] Rümmelein B, Zindel C. The more muscles, the less cellulite. dermatology practice. 2012; 3: 4-6
[24] Terranova F, Berardesca E, Maibach H. Cellulite: nature and aetiopathogenesis. Int J Cosmetic Sci. 2006;28:157-167
[25] Mirrashed F, Sharp JC, Krause V et al. Pilot study of dermal and subcutaneous fat structures by MRS in individuals who differ in gender, BMI, and cellulite grading. Sin Res Tech. 204; 10(3): 161-168
[26] Hexsel DM, Abreu M, Rodrigues TC et al. . Side-by-side comparisons of areas with and without cellulite depression using magnetic resonance imaging. Dermatol Surg. 2009; 35(1): 1471-1477
[27] Omi T, Sato S, Kawana S. Ultrastructural assessment of cellulite morphology: clues to a therapeutic strategy - Laser Ther. 2013; 22(2): 131-136
[28] Nürnberger F. Müller G. So-called Cellulite: An Invented Disease, J Dermatol Surg Oncol. 1978; 4(3): 221-229
[29] Goldman MP. Cellulite: a review of current treatments. Cosmetic Dermatol. 2002; 15: 17-20
[30] Giesse S. Cellulite: pathophysiology, clinic and therapy using tissue stabilized-guided sibscision. 26th training week for practical dermatology and venereology (FOBI 2018). Dusseldorf. Doi: 10.3205/18fobi009
[31] Brahm H, Pehl-Aulin K, Saltin B et al. Net fluxes over working thigh of hormones, growth factors and biomarkers of bone metabolism during short lasting dynamic exercise. Calc Tiss Int. 1997;60:175-180
[32] Adams GR. The role of IGF-1 in muscle growth and the potential for abuse in athletes. Br J Sports Med. 2000; 343:412-413
[33] McKay BR, O'Reilly CE, Phillips SM et al. Co-expression of IGF-1 family members with myogenic regulatory factors following acute damaging muscle-lengthening contractions in humans. J Physiol. 2008; 15: 5549-5560
[34] Buresh R, Berg K, French J. The effect of resistive exercise rest interval on hormonal response, strength, and hypertrophy with training. J Strength Cond Res. 2009; 23:62-71
[35] Evans, WJ. Effects of exercise on senescent muscles. Clin Orthoped Rel Res. 2002; 403(Suppl.): S211-S220
[36] Hill M, Goldspink G. Expression and splicing of the insulinlike growth factor gene in rodent muscle is associated with muscle satellite (stem) cell activation following local tissue damage. J Physiol. 2003; 549:409-418
[37] Hawke TJ, Garry DJ. Myogenic satellite cells: physiology to molecular biology. J Appl Physiol. 2001; 91: 534-551 [38
] Rosenblatt JD, Yong D, Parry DJ. Satellite cell activity is required for hypertrophy of overloaded adult rat muscle. Mus Nerve. 1994; 17: 608-613 [39
] Morgan JE, Partridge TA. Muscle satellite cells. Int J Biochem Cell Biol. 2003; 35(8): 1151-1156
[40] McKay BR, Toth KG, Tarnopolsky MA et al. Satellite cell number and cell cycle kinetics in response to acute myotrauma in humans: immunohistochemistry versus flow cytometry. J Phyiol. 2010; 588(17): 3307-3320