

Biological and Clinical Effects

English translation of the source document "Biologische und klinische Effekte.pdf"

Collected studies from various clinics and application observations related to the use of oscillation therapy.

Translator's note: This is a working English translation for reading and reference. Medical and promotional statements are reproduced from the source document; they have not been independently verified in this translation.

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Collected studies and application observations

Collected studies from various clinics and application observations related to the use of oscillation therapy.

Oscillation - an innovative therapy method

Oscillation is an innovative, highly effective, and user-friendly therapy method. It enables clients to receive a modern and individualized approach to personal aesthetic problems.

The approach is based on a gentle massage of deep skin layers by means of an electrostatic field. In contrast to other therapeutic procedures, such as tissue heating, strong mechanical massage, or excessive exposure to electromagnetic fields, no damaging effects are described in the source document.

Oscillation leads to effective drainage of toxic metabolic products and pro-inflammatory mediators from deep areas of the skin. It also facilitates the production and release of anti-inflammatory cytokines and growth factors. This accelerates the reconstruction of skin layers and improves their elastic properties.

According to the source, oscillation reduces the expression of estrogen receptors on skin cells. This, in turn, is associated in the text with sustained lipolysis and a reduction in the appearance of cellulite. The source also emphasizes that the therapy complements other approaches in aesthetic medicine and can markedly increase their effectiveness, for example in mesotherapy or anti-aging beauty care for the face and body.

Professor Ludmila Korkina, Head of the Department of Molecular Biology, Russian State Medical University.

Therapy information: oscillation

Anti-aging treatment for the face, neck, and décolleté

Deep-acting oscillations train the facial muscles through stimulation and relaxation, helping to keep them firm. By stimulating collagen production and cell regeneration, the skin receives a more youthful appearance. The anti-edematous and anti-fibrotic effects support a more even and wrinkle-free appearance of facial skin.

Aftercare following aesthetic procedures and cosmetic laser treatments

Oscillation is described as helping swelling, skin redness, and edema subside significantly faster. Because it can be used early after a procedure, the healing process can be accelerated, scar healing supported, local inflammation contained, and pain reduced in a lasting way.

Pre- and postoperative therapy

Because oscillation is described as anti-edematous, anti-fibrotic, and detoxifying, the source states that it can be used to prepare tissue for liposuction, make the procedure more effective, and prolong its effect. It is also presented as protecting the body from negative effects during the body-contouring process.

Cellulite

Oscillation is presented as counteracting all pathological processes of cellulite. With oscillation, microcirculation can be improved, edema and lymphatic stasis reduced, inflammation contained, cracks and dimples in the skin appearance diminished, and estrogen sensitivity reduced.

Mode of action

Electrostatic impulses set the skin, conductive tissue, subcutaneous adipose tissue, muscles, blood vessels, and lymphatic vessels into pleasant oscillations with biologically effective deep action. These oscillations have a direct trophic, anti-inflammatory, detoxifying, and tissue-draining effect. Pain is dampened, skin redness is reduced, edema is dissolved, and wound healing is accelerated.

In contrast to other forms of physiotherapy, oscillation acts gently and deeply on all tissue components, including cells and the extracellular matrix. Due to its non-invasive, non-traumatic, and highly effective approach, the source presents oscillation as especially suitable for the treatment of age-related and environmentally induced aesthetic problems as well as cellulite. It is also described as supporting optimal wound healing after plastic surgery or cosmetic laser treatment, and as strengthening and prolonging the effect of liposuction. The source states that the biological and clinical effects of oscillation have been demonstrated in representative experimental and clinical studies.

Advantages

In contrast to externally applied mechanical forms of therapy, the therapeutic effect of oscillation arises within the tissue itself and acts through the entire depth of the tissue. For this reason, oscillation is described as particularly gentle and as an exceptional treatment alternative in fresh trauma, postoperatively, in acute pain, and in the area of open wounds.

When does oscillation help?

Treatment with oscillation therapy devices is described as helping to achieve faster regeneration after plastic surgery, cosmetic laser treatments, and other invasive methods of aesthetic medicine.

In addition, safe, pleasant, and highly effective aesthetic treatments with an anti-aging effect can be performed. The massage couch is also described as effective against cellulite.

Frequently asked questions

What does oscillation do in the treated tissue?

- Improves trophic tissue supply.
- Has detoxifying and anti-inflammatory effects.
- Drains the tissue.
- Reduces pain.
- Reduces skin redness.
- Reduces edema.
- Promotes wound healing.

What happens during treatment with oscillation?

Electrostatic impulses set the skin, conductive tissue, subcutaneous adipose tissue, muscles, blood vessels, and lymphatic vessels into pleasant oscillations with a biologically deep effect.

What is the advantage of treatment with oscillation?

In contrast to externally applied mechanical forms of therapy, the therapeutic effect of oscillation arises within the tissue itself and acts through the entire tissue depth. For this reason, the source describes oscillation as a particularly gentle treatment alternative:

- in fresh trauma;
- postoperatively;

- in acute pain;
- in the area of open wounds.

What does oscillation do in wound healing?

Oscillation contributes to the acceleration and improvement of wound-healing processes. The edema-reducing and anti-inflammatory effect supports local drainage and supply in all tissue layers, which significantly accelerates tissue regeneration and wound closure. This is documented in the source by significant improvement in planimetric and biochemical wound-healing parameters.

What does oscillation do in inflammation?

Oscillation is described as containing acute and chronic inflammation by limiting inflammation-promoting cell movement to the affected area. This is achieved by reducing the release of inflammatory mediators and by reducing water and protein loss from blood and lymphatic vessels.

What does oscillation do in edema and fibrosis?

In the interstitium, oscillation causes a “mixing” of the ground substance and thus promotes the further transport of fluids and their contents, such as proteins, cellular breakdown products, neurotransmitters, and other substances. Septa and clefts remain open through mechanical activation, thereby promoting interstitial drainage. Local edema, aseptic inflammation, and swelling in the wound area are thus considerably reduced. In chronic conditions, treatment helps dissolve fibrosis and reduce tissue hardening.

What effects does oscillation have on cellulite?

Oscillation is described as having positive effects on all cellular and molecular processes of cellulite. It improves blood and lymph flow in all skin layers and reduces inflammation and edema. The process of dimple formation is interrupted and the estrogen sensitivity of skin cells is reduced. The source describes this as effective cellulite treatment in 80% of affected women. The thigh circumference of patients decreases, as does the buttock circumference; skin elasticity increases measurably and fibrosis is reduced.

Has the effect of oscillation been proven?

According to the source document, the effect of oscillation has been demonstrated in various representative studies. The significant effects relate mainly to:

- promotion of wound healing;
- anti-inflammatory effect;
- reduction of edema and fibrosis;
- treatment of cellulite.

Can oscillation be used independently, or must I go to a therapist?

Oscillation was designed for professional, individual, and mobile use. It is presented as a patient-oriented and user-friendly device. Instruction in the compact device can be provided by a physician or therapist, making it possible to apply supplementary therapy at home or while traveling.

Can I make mistakes when operating the device?

The source describes treatment with oscillation as very simple due to the remote control. The instruction manual also provides pre-programmed treatments. The indication menu guides the user safely through the different treatment phases. The large graphic display also shows informative therapy notes and treatment graphics.

How often should oscillation be used?

The frequency of use depends on the indication. According to the source, the indication menu provides precise information on this point.

Can oscillation be used in parallel with medication?

The original document states that the therapy has no side effects and does not conflict with any medication. It is described as suitable as supportive therapy alongside medication and other physical or physiotherapeutic treatments.

Can I take oscillation with me while traveling?

Oscillation was designed for individual mobile use. Its 12-volt operation and compact size are described as enabling flexible use both on the road and at home.

I have a pacemaker. May I be treated with oscillation?

People with pacemakers should generally not undergo electrotherapy, because dangerous interactions with the control electronics may occur.

I am pregnant. May I be treated with oscillation?

During pregnancy, treatment with this therapy should generally not be performed.

When must oscillation not be used?

Treatment must not be performed in the following cases:

- acute infections;
- acute systemic inflammation with involvement of pathogenic germs;
- active tuberculosis;
- acute venous diseases, including untreated thrombosis;
- untreated malignant diseases;
- erysipelas;
- patients or therapists with pacemakers or other electronic implants;
- heart complaints and heart diseases, especially heart failure, decompensated cardiac edema, or cardiac rhythm disturbances;
- pregnancy;
- hypersensitivity to electrostatic fields;
- contagious skin diseases.

Does the patient feel anything during treatment?

The patient feels that the tissue is set into pleasant oscillations through its full depth.

Biological and clinical effects

- promotion of wound healing;
- anti-inflammatory effect;
- reduction of edema and fibrosis;
- treatment of cellulite.

Promotion of wound healing

Oscillation contributes to the acceleration and improvement of wound-healing processes. The edema-reducing and anti-inflammatory effect supports local drainage and supply in all tissue layers, which significantly accelerates tissue regeneration and wound closure. The source states that this is documented by significant improvement in planimetric and biochemical wound-healing parameters.

Original chart caption: "Promotion of wound healing: planimetric results."

Anti-inflammatory effect

Oscillation is described as containing acute and chronic inflammation by limiting inflammation-promoting cell movement to the affected area. This is achieved by reducing the release of inflammatory mediators and by reducing water and protein loss from blood and lymphatic vessels.

Original chart caption: "Anti-inflammatory effect: MPO, wound edge."

Reduction of edema and fibrosis

In the interstitium, oscillation causes a "mixing" of the ground substance and thus promotes the further transport of fluids and their contents, such as proteins, cellular breakdown products, neurotransmitters, and other substances. Septa and clefts remain open through mechanical activation, thereby promoting interstitial drainage. Local edema, aseptic inflammation, and swelling in the wound area are therefore considerably reduced. In chronic conditions, treatment helps dissolve fibrosis and reduce tissue hardening.

Original chart caption: "Edema reduction: tissue weight / dry tissue weight / wound edge."

Treatment of cellulite

Oscillation is described as having positive effects on all cellular and molecular processes of cellulite. It improves blood and lymph flow in all skin layers and reduces inflammation and edema. The process of dimple formation is interrupted and the estrogen sensitivity of skin cells is reduced. The source describes this as effective cellulite treatment in 80% of affected women. The thigh circumference of patients decreases, as does the buttock circumference; skin elasticity increases measurably and fibrosis is reduced.

Original chart caption: "Circumferences: planimetric results, treatment for three months, twice per week."

Sources cited in the original: 1, 2, 3: Mikhalchik E. et al. (2005): Wound healing Effects of DEEP OSCILLATION®. 1st International Conference on Skin and Environment, Moscow-St. Petersburg, 1-6 June, 71. 4: Korkina, L. et al. (2007): Treatment of Gynoid Lipodystrophy (Cellulite) with DEEP OSCILLATION®: A Pilot Clinical Study. Istituto Dermatologico dell'Immacolata (IDI IRCCS), Rome.

Distress study

Empirical study on reducing stress-related back problems and negative stress (distress) by using oscillating massage

The study was conducted under the direction of graduate psychologist Dr. phil. Heide Kraus.

Approach

Oscillation treatment according to the principle of biomechanical stimulation is used in conventional medicine with great success as a supportive therapeutic measure in the treatment of many conditions, particularly back pain, tension, intervertebral disc problems, as well as lymphatic complaints and circulatory disorders in deep muscular areas.

The aim was to determine the extent to which the oscillating massage couch influences clinical pictures with a psychosomatic background; in particular, whether clear evidence could be found for reducing negative stress (distress) and improving the ability to relax psychologically.

Subject of the study

The investigation was carried out using the oscillating massage couch. Forty-one subjects underwent 24 applications, each lasting 15 minutes, over a 12-week period. The results were determined and evaluated both by a scaled questionnaire completed by the subjects before and after treatment, and by a subjective questioning method integrated into the follow-up conversation.

Results

In the survey with a selected number of subjects, it was clearly established that use of the massage couch was associated with a noticeable reduction in the level of arousal and an improvement in psychological resilience.

Physiologically, during relaxation, a reduction in the inflow of impulses from the brain into the muscle areas is observed. The sensitivity of the muscle spindles, which are decisive for muscle tension and relaxation, is positively altered. This leads to relaxation-related vasodilation and therefore to increased blood circulation. Oxygen demand is reduced and the breathing rhythm slows down. The patient feels calm and relaxed.

Conclusion

Treatment with the massage couch according to the principle of biomechanical stimulation has a direct and positive influence on the subjects' ability to relax. During and after the exercise, the subject feels loose, calm, and composed. In this respect, regular use of the massage couch has a stress-preventive and stress-reducing effect and can therefore be used supportively to reduce distress.

Clinical effects of the therapy method Deep Oscillation in treatment of sports injuries

Original English title cited in the source: "Clinical Effects of the Therapy Method Deep Oscillation in Treatment of Sports Injuries."

Author: R. Aliyev.

Institution: RPP-Gesellschaft für Rehabilitation, Prävention und Pflege, outpatient rehabilitation for orthopedics and trauma surgery; medical director: Dr. med. R. Aliyev.

Keywords: sports injuries; DEEP OSCILLATION; edema; acute treatment; rehabilitation.

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Abstract

Background and objective

Approximately two million sports injuries occur in Germany each year. The most common include distortions and ligament ruptures accompanied by post-traumatic edema. The therapy method Deep Oscillation had already shown very good results in various other indications and in lymph-drainage therapy. The aim of this work was to evaluate the effects of the Deep Oscillation method in acute and follow-up treatment of various sports injuries, in addition to standard therapy consisting of complex physical therapy and medication.

Method

Two football teams were observed under sports-medical supervision. Forty-nine sports injuries were treated in 14 people with an average age of 23.9 years.

Results

Subjective assessment of complaint symptoms on the VAS scale improved significantly ($p=0.001$), from 8.7 points at baseline to 2.1 points after treatment. The objective assessment by the treating physician, based on various clinical parameters, was rated as good or very good in 90% of cases.

Conclusion

Overall, the source concludes that the Deep Oscillation therapy method represents an easy-to-use and relatively inexpensive adjunctive treatment option. Even before the start of the study, very positive therapeutic results had been observed in other indications with regard to reduction of edema, pain reduction, anti-inflammatory action, improved mobility, stimulation of wound healing, anti-fibrotic action, improved trophic supply, and improvement in the quality of connective tissue. According to the original text, these effects were also confirmed in the treatment of patients with acute sports injuries. Due to its gentle mechanism of action, this method, unlike other electrical and mechanical therapy methods, is not presented in the original as contraindicated for immediate treatment. Overall, no side effects were observed; patients showed high adherence and rated the therapy very positively.

Original figure caption 3: Objective assessment of therapy results by the treating physician using a four-level rating scale: very good, good, satisfactory, poor.

Original figure caption 4: Subjective assessment of complaint symptoms using NRS, grouped into three levels of severity: no pain or mild pain (0-3), moderate pain (4-7), severe pain (8-10).

Back-problem study - Peter Staudinger, physiotherapist

Application observation in back-pain patients

Application period: 3 months, October to December 2004.

Application frequency: every 3 days during the first month, thereafter weekly.

Application area: back complaints of various origins, such as sciatic complaints, nonspecific muscle tension, and the lumbar spine region.

Participant group: secretarial staff, people in management, personnel consultants - all people with increased desk work, especially computer work.

Results

In general, the lordosis support with infrared heat was judged to be pleasant and pain-relieving. In female subjects, relief of headaches and general relaxation were documented in 8 out of 12 subjects.

Male subjects reported general well-being and loosening of the back muscles in 12 out of 19 subjects.

A reduction in medication use was also reported in three cases (Voltaren). It was then taken only during acute pain phases. Thirteen subjects unanimously reported general relief and significantly less frequent acute pain phases.

In physiotherapy practice, the massage couch is described as good support for manual measures. Especially in the lymphological field, the massage couch can be used to prepare for manual lymph drainage.

In sports medicine, the massage couch is described as a very useful tool, especially due to its flexibility and convenience, as well as the integrated infrared heat cushions.

Spinal complaints study - multicenter study

Multicenter study on the effect of the hhp massage couch on patients with degenerative spinal complaints

The study was conducted by:

- Dr. med. Claus Oberbillig, specialist in orthopedics, Wiesbaden;
- Dr. med. J. Mortier, Orthopedic University Clinic, Frankfurt;

- Dr. med. Tiberius Matcau, group practice, Kadelburg;
- Dr. med. Stephan Müller, orthopedic group practice, Gelnhausen.

Back pain has now become a major widespread condition and accounts for a considerable proportion of workplace absences.

1. 60-80% of Germans suffer from spinal problems.
2. In 2006, more than 50% of all working people suffered from back pain.
3. Around 20% of employees report sick because of back pain.

1. Introduction to the problem

Through the use of the hhp massage couch, numerous positive user reports were received concerning improved blood circulation, relaxation of the back muscles, pain reduction, and the resolution of lymphatic congestion.

Insufficient blood circulation in the back muscles and the associated poorer supply of the entire back complex with important nutrients for cellular metabolism lead to a chronic deficiency in the nutrition of essential tissue structures.

If this condition persists for a long time, both the elasticity of the affected tissue and the contractility of the musculature suffer. Myogeloses in the form of multiple muscle hardenings are the immediate consequences and the preliminary stage of worsening trunk statics. This usually manifests as insufficiency of the back extensors or atrophy of the ventral trunk muscles.

On the basis of positive patient feedback, the application of andullating oscillations to the complaint profile of spinal patients was investigated.

2. Methodology

In a broad multicenter study, a total of 99 patients with back complaints were included over an observation period of 10 treatments; 76 were female and 23 were male.

The average age was 57 years, with a range from 33 to 85 years. The largest group was the age group between 44 and 64 years.

Seventeen patients mainly had cervical spine complaints, 12 patients mainly had thoracic spine complaints, and the majority, 60 patients, suffered from lumbar spine complaints. All patients with chronic degenerative spinal complaints lasting more than 6 months were included.

Exclusion criteria were severe osteoporosis, pregnancy, and tumor disease, including previous operations and opiate medication.

Pain was measured using the VAS scale. In addition to the clinical findings, evaluations of the SF-36 questionnaire were included. Any accompanying therapies, such as local or systemic pain therapy, physical therapy, osteopathic treatment, and diagnostic tools, were also recorded.

The respective parameters of the standardized SF-36 questionnaire and the respective clinical examination findings were recorded before the first treatment, after 5 treatments, and after 10 treatments, and were evaluated by analysis of variance.

Subdivision into cervical, thoracic, or lumbar spine groups was not carried out, because a detailed statement would then no longer have been possible with sufficient statistical support.

In 73 of 99 patients, the treatments included, in addition to therapeutic exercise, acupuncture, and neural therapy, also osteopathic treatments and the combination of therapeutic exercise with the above-mentioned treatment tools.

3. Presentation of results

During the three surveys, activities on a normal day were assessed:

- Visit No. 1 - before treatment;
- Visit No. 2 - after 5 treatments;
- Visit No. 3 - after 10 treatments.

Reduction of complaints during heavily demanding activities

Heavily demanding activities such as jogging and lifting heavy objects were performed significantly better after 5 treatments. After 10 treatments, no further improvement occurred.

Figure 1: Changes in complaints during heavily demanding activities over three measurement points. The figure shows a clear reduction in complaints following regularly performed applications with the massage couch.

Reduction of complaints while carrying moderately heavy loads

For moderately heavy activities such as carrying a table or vacuuming, a significant improvement could still be observed at the third survey.

Figure 2: Regular applications of the massage couch led to a clear reduction in complaints when carrying moderately heavy loads.

Reduction of complaints when lifting shopping bags

Lifting and carrying shopping bags also showed a significant improvement, although not to the same extent as with moderately heavy loads.

Figure 3: Ten treatment sessions with the massage couch led to a clear reduction in complaints when lifting shopping bags.

Reduction in incapacity for work

Maintaining the ability to work and/or perform regular daily activities is an important health-economic parameter. Here, an improvement was achieved with an error probability of 3%.

Figure 4: During the study, a reduction in incapacity for work was observed in the examined patients.

Improvement of mood

Physical tension or muscle tension is often accompanied by emotional tension. The question "Were you so emotionally exhausted that nothing could cheer you up?" was answered positively more often after the last visit, by 8% according to the source.

Figure 5: Due to regular applications of the massage couch, statistically significant improvements in the mood of the examined patients were observed.

Self-assessment of pain

Patients' self-assessment of pain using the visual analog scale (VAS), with a scale from 0 to 9 where 0 means no pain and 9 means the strongest pain, is an important and indispensable instrument for assessing pain. In the study, a significant improvement in pain level was already observed after the first 5 treatments.

There was no uniform answer to the question about analgesic consumption. However, almost 30% reported a reduction in analgesic use. Sleep is extremely important for providing rest to the body and mind. 57.4% of patients reported an improvement in the ability to sleep through the night. Most tension occurred in the lumbar spine area. Overall, 46.6% of subjects reported a reduction in tension after the treatments.

Reduction of pain perception

Figure 6: A clear reduction in pain perception was shown already after the fifth treatment with the hhp massage couch, with persistently low pain perception.

6. Summary and outlook

The multicenter study impressively demonstrates that 10 applications on the hhp massage couch, each lasting 15 minutes, are already associated with significant improvement in muscular tension around the spine. Significant improvements in spinal pain, mood, subjective well-being, and concentration ability were demonstrated.

The ability to sleep through the night and thus the extension of REM phases, which are important for recovery of mind and body, are further positive results of the study. The source states that regular use of the hhp massage couch can be expected to lead to a clear and lasting reduction in spinal complaints.

Study - visceral fat

Optimization of the health-promoting effect of andullation therapy through additional coupling of stochastic frequency patterns into the visceral region

Effects on the structure of visceral adipose tissue and its pro-inflammatory action

Introduction

Only for about the last two decades has the difference between the two types of adipose tissue been known. The inner fat belt appears more yellowish, has a stronger blood supply, and contains significantly more cell types. The dramatic importance of these differences remained unrecognized, perhaps because visceral fat is attached to the intestines as a relatively inconspicuous appendage. In contrast to earlier views, when fat tissue was considered simply an inert mass, it is now understood as a kind of hormone gland. While subcutaneous fat tissue is comparatively sluggish in its metabolism, abdominal fat is biochemically highly active.

Toxic substances circulate in the blood and lymphatic systems, accumulate, and are predominantly stored in fat and connective tissue. As this internal "waste dump" increases, the normal functions of the organs visibly decrease. Irregular complaints appear and become chronic over time. (Rosen, 2004)

This consequential vicious circle is intensified by the pro-inflammatory effect of central abdominal fat through the release of messenger substances, interleukin 6 and C-reactive protein. The source refers to it as a breeding ground for various pro-inflammatory substances. Accordingly, this fat depot is a focus of current health research.

The mechanism by which secondary diseases arise is now described as clarified: it begins with inflammation of the adipose tissue. Inflammatory factors are released directly to the liver through the portal vein and flood the entire body. Over time, body cells become resistant to insulin. The result is type 2 diabetes. If the blood vessels also become inflamed, heart attack or stroke can occur more easily. (Hauner, H., Fresenius Center for Nutritional Medicine, 2009)

The clear indications in the literature that address the pro-inflammatory effect of visceral fat allow an estimate of the economic value of targeted research activity in this field. If it is possible to influence the development of central abdominal fat, existing symptoms might be alleviated or even eliminated or avoided.

Presentation of results

Subject group (n=36): average age 46.3 years; height 181.6 cm; weight 93.8 kg; total body fat percentage 26.1%; elevated visceral fat percentage compared with the age-adjusted norm by 19.3%.

The results of blood-chemical investigations of the three subgroups Pla, AndI, and AndII are presented in Table 1 of the original. The placebo group (Pla - without application of andullation) showed only minor changes in the before-and-after comparison.

Cholesterol HDL, LDL

LDL cholesterol level

While total cholesterol values showed only minor changes, clear differences appeared in LDL values between the subgroups. While the placebo group showed a slight decrease in the parameter (-1.9%), both verum groups with andullation showed clear reductions (-5.4% to -8.8%) in the harmful LDL level. With use

of the andullation belt, these desirable changes were visibly more pronounced. The reduction of harmful LDL cholesterol ultimately also improves the LDL/HDL ratio and provides a better lipid-metabolism situation.

Figure 1: Magnetic resonance image of visceral fat.

HDL cholesterol level

For HDL values, even clearer differences appeared between the subgroups. While the placebo group showed a slight decrease in the parameter (-2.6%), both verum groups with andullation showed clear increases in the health-promoting HDL level (+8.1% to +14.7%).

With use of the andullation belt, these desirable changes appeared more clearly. The increase in “good” HDL cholesterol ultimately also improves the LDL/HDL ratio and provides a better lipid-metabolism situation. The lower this ratio is, the healthier the cholesterol situation is described as being.

Table 1: Results of blood-chemical examinations in the subgroups regarding lipid-metabolism values LDL and HDL.

Inflammatory markers

Blood sedimentation rate (ESR)

The results for the inflammatory marker blood sedimentation rate in the three subgroups Pla, AndI, and AndII are presented in Table 2 of the original. In this parameter as well, the placebo group (Pla - without application of andullation) showed no changes in the before-and-after comparison, whereas the two other subgroups, AndI and AndII, did show changes.

Table 2: Results of blood-chemical examinations in the subgroups regarding ESR. An asterisk indicates statistical significance.

C-reactive protein (CRP)

The analysis of C-reactive protein produced the following results for the three subgroups Pla, AndI, and AndII.

Table 3: Comparison of blood-analysis results in the three subgroups for the CRP parameter; an asterisk indicates statistical significance.

Image captions in the original: Image 1 - tissue structure of the abdominal wall of a physically active man, 34 years old; Image 2 - tissue structure of the abdominal wall of a moderately active man, 50 years old; Image 3 - tissue structure of the abdominal wall of an inactive man, 55 years old. Changes in healthy muscle tissue depending on age and activity level from Narula, Declerck, Kakulas - Neuropathology, Perth, Australia.

Summary

Total cholesterol values showed only minor changes. In LDL values, however, clear differences appeared between the subgroups. While the placebo group showed a slight decrease in the parameter, both verum groups with andullation showed clear reductions (5.4% to 8.8%) in the harmful LDL level. With use of the andullation belt, these desirable changes were clearly more pronounced. The reduction in harmful LDL cholesterol ultimately also improves the LDL/HDL ratio and provides a better lipid-metabolism situation.

For HDL values, even clearer differences appeared between the subgroups. While the placebo group showed a slight decrease in the parameter (-2.6%), both verum groups with andullation showed clear increases in the health-promoting HDL level (+8.1% to +14.7%). With use of the andullation belt, these desirable changes were very clearly visible. The increase in “good” HDL cholesterol ultimately also improves the LDL/HDL ratio and provides a better lipid-metabolism situation. The lower this ratio, the healthier the cholesterol situation is described as being.

The results for the inflammatory marker blood sedimentation rate show clear differences between the three subgroups Pla, AndI, and AndII. The placebo group (Pla - without application of andullation) shows hardly any changes in the before-and-after comparison. The slight increase in ESR lies within the range of variation and requires no further discussion. The two other subgroups, AndI and AndII, however, show a

clearly reduced ESR. This suggests that andullation therapy leads to a reduction in ESR, more strongly and statistically significantly when the visceral belt is used. Apparently, through the increased coupling of stochastic frequency patterns according to the andullation principle directly in the visceral region, a reduction in inflammatory processes of abdominal fat is registered.

The results for the inflammatory marker CRP also show a clear picture in the before-and-after comparison among the three subgroups Pla, AndI, and AndII. In this parameter as well, the placebo group (Pla - without application of andullation) showed small changes. In subgroup AndI, only a minimal reduction of the already slightly elevated CRP was determined. In direct comparison with the placebo group, the difference is not significant.

In group AndII with the andullation belt, a slightly elevated initial CRP value was first observed. However, in statistical comparison with the other two subgroups, this represented comparable starting conditions. Thus, the clear reductions in the CRP parameter after use of the andullation belt, taking into account the variations in the placebo group, are attributed in the source to the effect of the andullation belt (-23.3%). The inflammatory marker CRP shows the inflammation-reducing effect of the andullation belt even more clearly than the blood sedimentation rate. In summary, the presented investigation shows a positive influence of targeted andullation therapy with the visceral belt on the inflammation-triggering effect of dangerous abdominal fat.

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Stress study

As part of a large-scale stress study of 500 spa guests, the effects of mechanical andullation massage on stress indicators of the autonomic nervous system were investigated at the beginning of the spa stay. The travel time and unfamiliar environment left the examined people with a clearly increased stress status.

This was demonstrated in more than 83% of the examined clientele. On the basis of this finding, it was logical to reduce the stress factor with therapeutic means in order to improve the positive effect of a spa stay. The use of an active massage system appeared appropriate for this purpose.

Methodology

The main focus of this investigative approach was on the influences that a stress-reducing andullation massage (program 5, hhp, Karlsruhe) has on sympathetic and parasympathetic status. The average age of the spa guests of both sexes was 62.4 years.

Stress and recovery markers were determined before and after treatment from the frequency spectrum of heart-rate variability. These represent the activities of the sympathetic and parasympathetic nervous systems.

High sympathetic activity combined with reduced parasympathetic status represents an increased stress factor.

For registration of the electrocardiogram (ECG), the telemedical measurement system Cluemedical from Telovital, Vienna, was used. The raw ECG recorded over a period of 2 minutes was then examined for heart-rate variability and subsequently subjected to frequency analysis.

The original states: "The medical massage couch switches off stress."

Figure 1: Reduction of the stress marker after use of the medical massage couch.

Figures 2a and 2b: Analysis of the stress parameters sympathetic and parasympathetic nervous system. Example: 55-year-old manager before stimulation with program P5, and after 15 minutes of stimulation with program P5.

Result

Of the 500 spa guests examined, 415 showed elevated stress parameters during the initial examinations. Spa guests with low stress indicators did not participate in the analysis. The spa guests with an elevated stress factor participated voluntarily in the study and gave their consent.

The stress parameters were shown on the basis of the ratio of the area portions of low (LF) and high (HF) frequencies in the total frequency spectrum, and can also be seen from the height of the deflections. An additional positive effect of the stress-reducing massage is already visible in the analysis of heart-rate variability immediately after application.

Heart-rate variability increased on average by 28%. In the source, this alone is described as indicating a considerable gain in health from a cardiological perspective, because the higher the variability, the more adaptable the cardiovascular system.

When the spectral components of both indicators before and after application are compared, highly significant stress reductions of 44% can be determined. Such a rapid and clear reduction had not been expected. It is therefore described as encouraging that a 15-minute andulation massage leads to stress reduction.

Further investigations with andulation massage are recommended in the source in order to clarify the full range of effects.

Effect of the massage couch on the ability to relax

Dr. Uwe Gerlach is 60 years old and formerly worked as a physicist specializing in materials science. He worked as a scientist at research institutes and as a practitioner in industry.

Twenty years earlier, he overcame a severe illness and since then has been interested in methods that promote health outside conventional medicine and thereby strengthen the immune system in the long term.

From his own experience, he knew that daily relaxation is key. Since he considered previous methods insufficiently effective, he turned to neurotechnology, audiovisual stimulation, and neurofeedback (EEG biofeedback). In both fields, he is described in the source as the most important European pioneer.

Experimental procedure

Dr. Uwe Gerlach and Elke Sparkuhle, Taunusstein/Wiesbaden.

Study period: May to August 2004; planning and experimental implementation.

Effective informative value was ensured by the competence of the study leaders, who, according to the source, belong to the elite of EEG biofeedback in Europe.

The EEG diagrams were created using three different U.S. two-channel EEG neurofeedback systems. Each subject was continuously measured before and after use with a one-channel montage on a two-channel EEG.

The measurements were evaluated in a frequency-band progression diagram documenting the six essential brain-wave ranges as a function of the experimental time.

Summary of the study

Massage on the hhp massage couch acts directly on general well-being. It can be seen, according to the source, that massage trains the ability to relax over the long term when used continuously.

Stimulation of the musculature and skin is one of the important conditions for successful bodily relaxation.

Bodily relaxation, in turn, is a basis for combating negative stress - distress - and thus for creating the basis for healthy aging.