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Issue 01/ 2013

difference
What's behind it?

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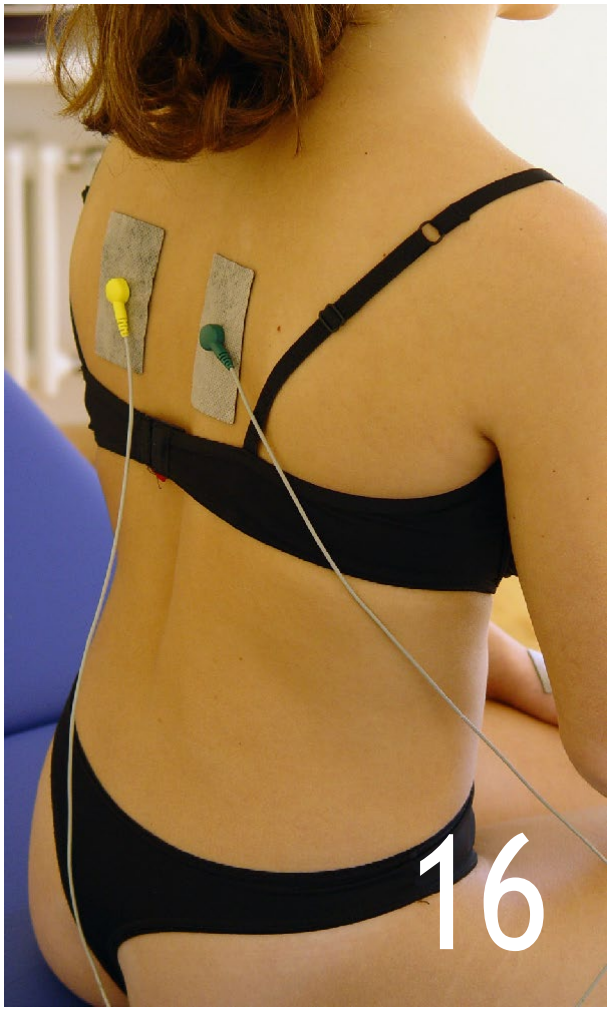
Publications
Overview of scientific papers from Germany and abroad

DEVICES
Manufacturer
Microcurrent device in Germany. What can be found on the market?

Leg length

All TO KNOW

REALLY



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intro/

Medizinpress.de provides reports and news about the field of medicine and health care. We focus especially on the field of complementary medicine applications. We would like to offer you an overview of the various possibilities with reports on the experiences of users and patients. The positive response to our website has encouraged us to also publish a print medium.

This magazine is specifically about microcurrent therapy. This special form of complementary medicine is gaining more and more interest in Europe. In Germany, this form of therapy has been used since the year 2000. In many areas, microcurrent therapy is still confused and/or compared with the classical electrotherapeutic methods. In a confusion of statements by sales organisations, up to the partial misinterpretation of studies and scientific papers, it is not easy for the interested doctor or therapist to filter out the concrete information for him.

Due to the not infrequent astounding therapeutic results of the application of microcurrents, dubious sales companies have also pounced on this "product". The result is that the increasingly transparent health market is becoming unsettled and those (scientists and manufacturers) who are trying to put this form of therapy on a scientifically sound footing are drowning in a flood of information.
In this issue, we would like to focus on those who have ensured and continue to ensure that the statements about microcurrent therapy are backed up with scientific studies. The increasingly strict EU directives (e.g. 93/42/EEC) meanwhile stipulate that statements and indications advertised with a medical product must also be proven.

We hope you enjoy discovering and getting to know microcurrent therapy and its multifaceted application possibilities.

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micro-energy/

Medical microcurrent therapy was described more than 80 years ago by Russian physiologists who used it to treat wound healing processes in soldiers with gunshot wounds. After the end of the Second World War, microcurrent therapy was almost unknown in Europe. In the USA, however, various scientific works and studies were carried out with microcurrent. In the late 1970s, the chiropractor and acupuncturist Dr. Thomas Wing used single-channel microcurrent devices. In 1982, one of the relevant studies on microcurrent therapy was published. This study described that by applying currents of no more than 500 microamperes, ATP production can increase by up to 500%. *(Cheng, N., 1982. The effect of electric currents on ATP generation, protein synthesis, and membrane transport in rat skin. Clinica Orthope- dics 171, 264-272.*)

The study was carried out invitro on rat skin. By means of a very elaborate "enzyme screening" at the time, the amount of more ATP produced was extrapolated. By today's scientific standards, this enormous amount of ATP is questionable and has not yet been confirmed by current studies.

> Up to 500% more ATP = energy.

These weak currents are in the order of a millionth of an ampere. Compared to the widely known electrotherapeutic procedures such as TENS, this form of electrotherapy is 1000 times weaker!

TENS triggers muscle contractions and is very noticeable. The microcurrents, on the other hand, are usually not felt by the patients. The main difference between these two methods is that microcurrents can influence the cellular metabolism. Classical electrotherapy, on the other hand, works in the so-called "pain gate control" and, for example, in the area of pain therapy, causes at most a dampening of pain, but no positive influence on the cell metabolism.

Another very interesting influencing factor of microcurrent therapy is the regulation of inflammation. In 2002, a study was carried out by the two scientists Dr. Vivienne Reeve and Wayne Reilly at the University of Sydney. The difference between microcurrent therapy with special frequencies and anti-inflammatory drugs was tested.
The scientists triggered inflammation in the mice's ears with arachidonic acid. The mice were treated with a 2-channel microcurrent device with a frequency of 40 Hz for the inflammation on the A channel and 116 Hz for the immune system on the B channel. The results were impressive.
The walls treated with microcurrent already had a 62% reduction in swelling after 4 minutes compared to the control group!

The biological Energy in our Body

“ Since the Sydney Olympics successful in sport

manufacturers in germany/

Since 2000 in Germany and Europe

Walitschek Medizintechnik GmbH, based in southern Lower Saxony, has been a manufacturer of microcurrent devices since 2000. Since then, the Clinic-Master-Professional and the Vital-Master have been used in pain therapy in Germany and now even worldwide. Walitschek has been involved with the scientific side of microcurrent therapy from a very early stage, not only because EU directives now require scientific randomised studies on medical products in Germany.

ATP physiotherapists have been trained on this device in Wimbledon.

The devices impress with their simple and logically structured applications for the doctor or therapist. A randomised clinical study published in 2010 by Thieme-Verlag "*The benefit of microcurrent therapy applied during inpatient follow-up treatment in patients after implantation of a total knee endoprosthesis, a randomised clinical study*" shows both statistically and clinically the high significance of this application. According to our information, this is the first randomised clinical study conducted with a microcurrent device (Clinic-Master-Professional) in Germany.

The very positive outcome of the study encouraged the Walitschek company to pursue further clinical investigations and studies. The result of this is, among other things, the publication of a randomised clinical study on patients with cervical spine syndrome in 2012. The study was carried out at the universities of Madrid and Valencia. In the field of sports physiotherapy, the physiotherapist Meggi Mohr- butter also published a master's thesis on the treatment of chronic achillodynia with the microcurrent device Clinic-Master-Pro- fessional.

> Which microstrom devices are according to the EU data applied clinically. values?

A microcurrent device is characterised by its ability to produce "currents" of less than 1 mA. So far so good, many electrotherapeutic devices have this property. However, the real "secret" lies in the so-called protocol or the pre-programming of the corresponding indications. One of the first microcurrent devices professionally marketed in Germany is the so-called *Clinic-Master MSG1200,* produced by Walitschek Medizintechnik.

The *Clinic-Master MSG1200* had ten permanently programmed indications. This device could be expanded with corresponding programme chip cards. Due to the wave of success triggered at the time, especially for use in physical therapy practices, some freelancers in the medical market jumped on this bandwagon.

Until March 2010, the placing on the market or marketing of medical devices was, compared to other countries in the world, not permitted.
"relatively" simple and with few hurdles.

Now, however, it is generally prescribed that medical devices, which include microcurrent devices, must have a so-called "safety certificate". "clinical evaluation" must be carried out. This applies not only to new medical products placed on the market after 2010, but also to all medical products already on the market. This clinical evaluation must be based on clinical data. This includes, in particular, corresponding studies. According to the risk classification of the product (most microcurrent devices are in risk class 2A), it must be clear from the studies or the clinical evaluation that the respective scientific work is relevant to the medical device. These regulations are laid down in *EU Directive 93/42/EEC*, which also forms the basis for the German Medical Devices Act. Furthermore, in connection with a medical microcurrent device, it must also be clearly defined which is the corresponding area of application. Here, too, the effectiveness must be proven by clinical studies.

in sport/

More energy, faster Regeneration- for many Top athletes indispensable.

In the field of elite sport, it is a matter of
often very intense. The athletes have to endure enormous physical stress, which is not always without injury. This is where microcurrent therapy became established at a very early stage. The devices from Walitschek Medizintechnik were first used successfully in professional sport at the 2000 Olympic Games in Sydney.
The German Football Association with its head therapist Klaus Eder also relies on the efficient microcurrent device *Clinic-Master-Professi- onal*. In 2011, a training course on the use of microcurrent devices was held at Klaus Eder's therapy centre in Donaustauf.

"A crazy pace ... "Clearly superior in terms of fitness ... " , that's how the Bild-Zeitung described the World Championship
victory of Robert Steglitz in the super middleweight division. Robert Stieglitz relies above all on the very much accelerated regeneration through the use of the *Vital-Master*. "I no longer feel so tired after a hard workout and I can speed up my regeneration.
tion times significantly shorter," said Robert Stieglitz. His sports scientists were able to clearly define the success of the interaction of a specially designed training programme and microcurrent therapy based on a precise training analysis (WESP company).
Microcurrent therapy with the *Vital Master* is not only used in Germany; Petra Kvitova CZ, the 2011 Wimbledon winner, is also regularly treated with this device.

alkaline wrap/

The human body is very resilient, but if the natural balance is disturbed by pollutant-related influences from the environment, our body can almost no longer compensate for this on its own. Precisely because the human organ system is dependent on the correct alkaline balance, fluctuations in the pH values in our blood can quickly become hazardous to our health. But also the many artificially produced organic compounds in our food, too much consumption of stimulants as well as generally unbalanced nutrition can lead to all these harmful substances being deposited in our body and thus over-acidifying the connective tissue and the fatty tissue in the subcutis. Independent purification and detoxification is therefore almost impossible. This leads to an increase in organ skin, hyperacidity and slagging within the body.

It is possible for the body to cleanse itself, but it would have to be 100% healthy to do so. In this case, the independent cleansing and detoxification would take place via the skin, the mucous membranes, the kidneys and lungs or via the intestines. If these excretory organs are no longer able to activate the detoxification process on their own, there are some very helpful methods available, such as the alkaline wrap therapy with biostimulation by microcurrent. This form of therapy is currently on the rise in Germany because the applications are already very successfully established in the USA and are not only used for detoxification and purification, but also as a treatment for the body.

The therapy can also be used positively as a complementary form of pain therapy.

purify&detoxify/

Expel with basic Winding and microcurrent

In such an alkaline-based body therapy with supported biostimulation through microcurrent, a gel, which is alkaline, is applied to the respective body regions. This can be done partially on the arms, legs and abdomen or completely on the whole body. After applying the alkaline gel or salts that have an alkaline structure, the lukewarm wraps are placed around the corresponding parts of the body. The wraps used should be made of natural fibres that are breathable. The electrons necessary for the microcurrent are now placed in the wraps. The current, which now acts on the metabolism through the acid-binding hydrogen ions in the tissue for biostimulation, in combination with the alkaline-based salts or gels, deacidifies the connective tissue and detoxification can start through this biostimulation. Thus, the entire tissue is prepared for detoxification.

The application is also often offered as a body wrap by trained professionals.

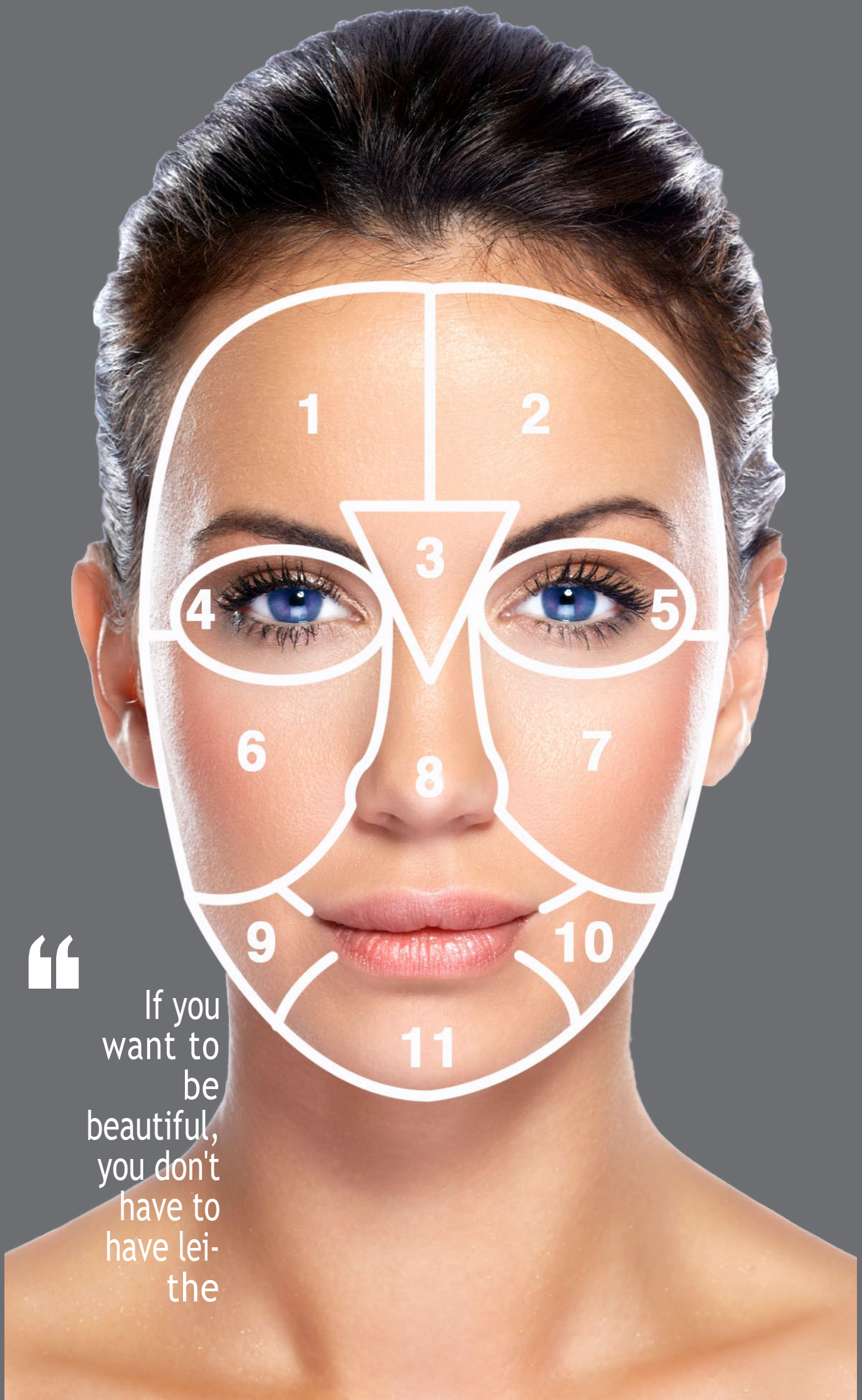
The application of biostimulation with microcurrent is not harmful to health, as the supplied current amounts are in the microampere range. The application should last approx. 50 minutes so that the body can relax completely and the detoxification can take place through the metabolism.

In addition to the positive effects of the bathing wraps with the microcurrent as purification and detoxification, biostimulation is also often used successfully for chronic diseases, general hyperacidity and joint pain.

> “A healthy mind - in a healthy body.

The organs are also automatically very stressed by the pollutants. This often has the consequence that the body's immune system inevitably collapses and can no longer produce natural antibodies against pathogens.

With the alkaline wrap therapy in connection with the microcurrent, excreted harmful substances have been detected in the urine by laboratory tests (heavy metal test). In addition, the tissue of the skin is compacted and a measurable reduction of the circumference can be achieved due to the purification.



“

If you want to be beautiful, you don't have to have lei-the

www. **medizinpress.de**

cosmetic

s/

Microcurrent in cosmetics - Biofacelift Cellulite Wrinkle treatment

Mode of action

In the field of cosmetic treatments, the metabolism-promoting properties of microcurrent therapy are clearly advantageous. The application can improve blood circulation by up to 35%, lymph drainage by up to 28%, elastin fibres by up to 45% and collagen formation by up to 10%.

"Rejuvenation of the skin"

One of the main reasons for the rejuvenating effect of the skin is that the muscles are built up more quickly through the application and cell division increases. However, this application does not only have an effect on the face, other body regions can also be cosmetically treated with it.

Application / Experts

The alternative practitioner and beautician Radoj- ka Flöer has developed a special application and training procedure for the use of microcurrent therapy in the field of cosmetics. In 2012, she published the book "*Beauty Wellness with Biological Cell Regulation*". The book was published by Windsor Verlag. ISBN (978-1- 938699-23-8)

Device + Distribution

The company *Partners in Health* markets the microcurrent device "*Vital-Master BCR Cosmetics*" especially for cosmetic applications. The device stands out due to its frequency bandwidth of 0.1-10,000 Hz. After years of research, Ms Flöer has adapted special cosmetic programmes to the *Vital-Master.*

Cosmetics

The *VitaCELLnetic* cosmetic range, specially developed for cosmetic application with microcurrents, complements the concept of Ms Flöer and *Partners in Health*. The products contain highly dosed active ingredients such as gold, gemstones and plant extracts and

are free of undesirable chemical additives. The range includes tailor-made care products for face, body and hair. For more information, visit http://www.vitacellnetic.ch.

Special cosmetic products complement the application of microcurrents.

studies/

Scientific work, publications, Randomised clinical trials

There are already a number of publications and studies on microcurrent therapy, and in the USA in particular a large number of clinical studies have been carried out since the 1970s.
studies. But which ones are actually representative of the
"digital" microcurrent therapy?

1

Clinical Study Dresden

Randomised clinical trial on the patient-related benefit of BCR therapy (microcurrent) in patients after total knee arthroplasty. - *Die Rehabilitation* 2010-49th year - pp. 173-179; G. Rockstroh, W. Schleicher,
F. Krummenauer - Performed with *Clinic-Master-Professional*

2

Valencia Clinical Trial

Pain relief in cervicalgia by microcurrent therapy - *Fundacion Universidad-Empresa*, Universidad de Valencia, Spain. R. Torres, R. Gonzalez-Pena, F. Arrizabalaga, J. Casana-Granell, Y. Alakhdar-Mohamara and J.C. Benitz-Martinez. 18 February 2012 - conducted with *Clinic-Master-Professional*

3

MAS Physiotherapy

Effects of biological cell regula- tion therapy / BCR (microcurrent) in chronic achillodynia - a double-blinded and randomised pilot study, for the award of the *title Master of advanced Studies in Sportsphysiotherapy (MAS)*. University of Salzburg, Meggi Mohrbutter, 04.03.2011. Conducted with *Clinic-Master-Professional.*

4

Bachelor Physiotherapy

Dual Bachelor's degree programme in Phy- siotherapy leading to the degree of "*Bachelor of Science*" . Microcurrent therapy in patients with chronic back pain. University Medical Centre Hamburg-Eppendorf; first examiner: Prof. Dr. Erwin Scherfer; Winifried Backhaus; 30.06.2010 Buxtehude; carried out with the Clinic-Master professional.

5

Clinical trial

Cytokine alteration with microcurrent in fibromyalgia associated with cervical spine trauma. - Carolyn R. McMakin; Walter M. Gregory; Terry M. Phillips - Fibromyalgia and Myofascial Pain Clinic of Portland USA, University College London, Portland USA - 14.12.2004; We are not aware of the device used to conduct the study.

6

Clinical observation

Observation of neurological patients during therapy with the *Clinic Master Professional* and *Vital Master*. - In the period from August 2008 to April 2010, 99 patients with the diagnoses Mb. Parkinson's disease, multiple sclerosis, amyotrophic lateral sclerosis and restless legs problems were specially treated with the *Clinic Master Professional / Vital Master* under inpatient and/or outpatient clinical conditions. Kiel Municipal Hospital - Inge Metag, physiotherapist; 04.09.2010

Vor Behandlung - Zustand nach entzündeten Mücken-stichchen.

2 Wochen nach der ersten Behandlung. Die Behandung wurde täglich durchgeführt.

wound healing/

After 14 days and daily treatment

In 1843, Dubois-Reymond reported that in the wound areas on the skin of humans a kind of healing current can be measured in an intensity of less than 1-mA. Later, it became known that an electromagnetic field exists in the vicinity of wounds, which is also called the "wound healing current". The current spreads in a radius of 2 -3 mm around the wound. The gradingent falls from 140 mV/mm to 0 mV/mm.

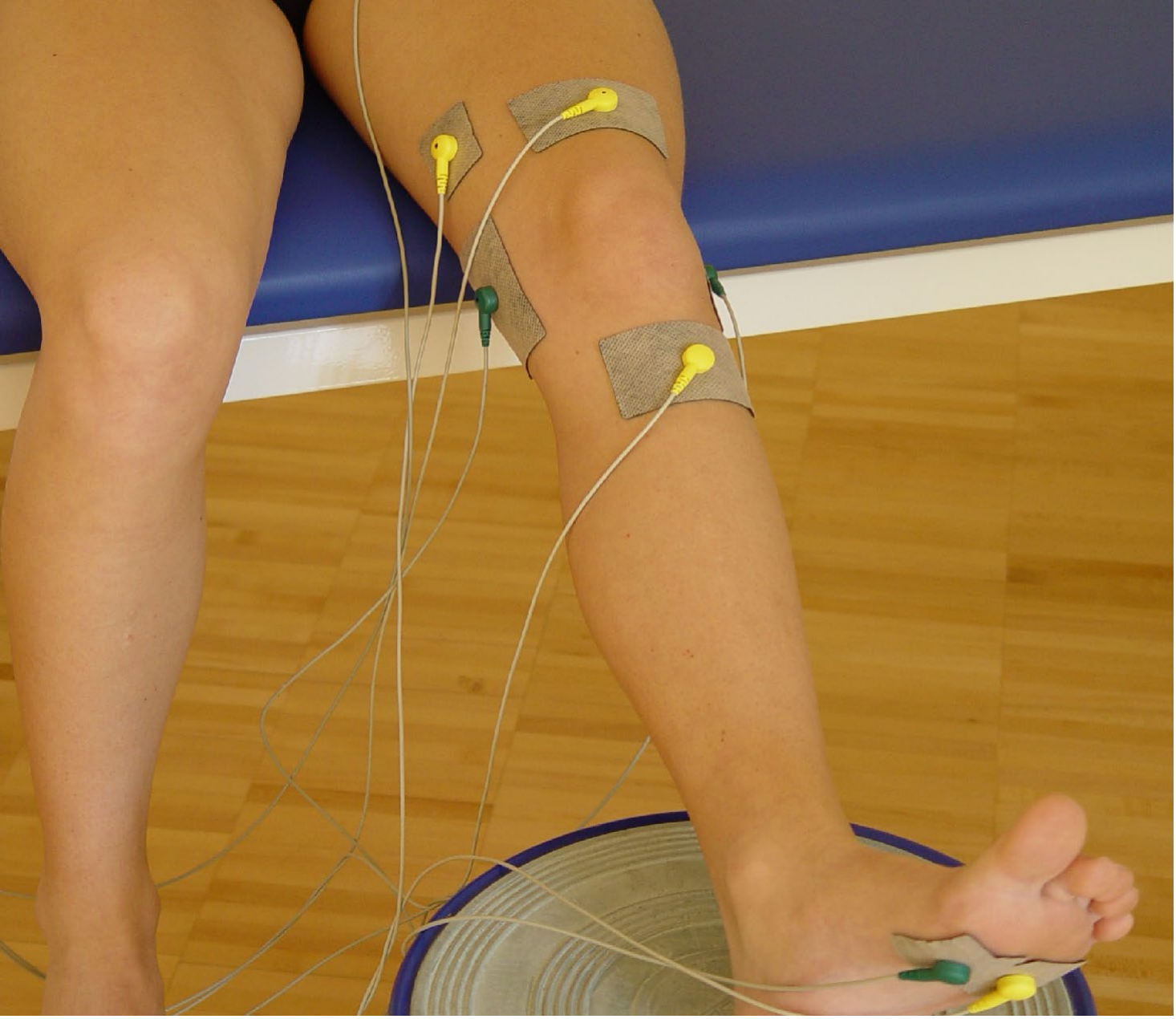
Wood et al. conducted a double-blind wound healing study with the application of currents between 300-600 microamperes in 74 patients. The patients suffered from stage II and stage III decubitus ulcers. Patients were randomised into 2 groups - the treat- ment group (n=43) and the placebo group (n=31), which received the standard treatments.
got.

After 8 weeks, 58% of the ulcers in the treatment group were cured, while only 1 ulcer in the placebo group was cured! The remaining ulcers in the placebo group worsened.

Another study was conducted by *Junger et al on* Ulce- ra on the legs of 15 patients who had experienced no improvement over 79 months with standard treatment. Junger placed the cathode directly on the wound for 14 days and the anode directly on the wound for another 10 days. The treatment

was given daily for 30 minutes. With the result that the main wound reduced by 63% (P<.01).

the wounds were closed!



applications/

"Many ways lead to Rome."

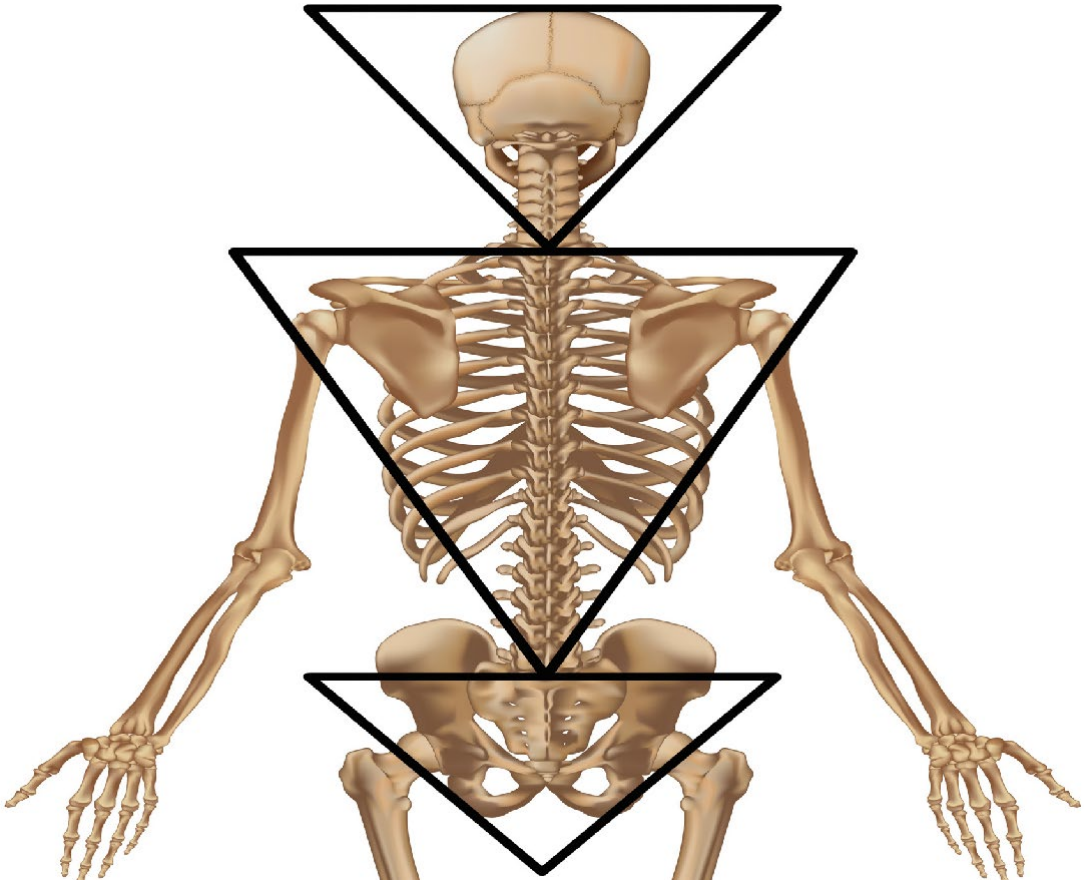
Microcurrent therapy can be applied in different ways. According to the motto "*many roads lead to Rome*", the therapy is carried out by means of adhesive electrodes, rod electrodes, battery wraps and various other possibilities. The most commonly used method is probably the application with adhesive electrodes. These are usually adhesive pads that can be inserted several times and are connected to the microcurrent device via an electrode cable. In the basic application, the pain area is surrounded with the electrodes and a lymph drainage is also applied.

The advantage of adhesive electrodes is that in most cases the application is fully automatic during the treatment period. In the field of physiotherapy in particular, however, the application with the sta- ble electrodes is preferred. Here, the therapist can focus individually on the pain points, scars, tendons or the affected muscles. A combination of application with adhesive electrodes and rod electrodes is also frequently seen.

Due to the very wide range of applications of microcurrent therapy and the complexity of its application, so-called training specialists or further training institutes have concentrated on the training of special application concepts with microcurrent therapy. In particular, this involves the combination of different complementary medical procedures, such as acupuncture or medical therapeutic procedures. In most cases, the training consists of training blocks that build on each other. Most training providers follow the same approach of considering the person and his or her illness holistically and as a unit.
Those interested in such training events should make sure that the content offered is also based as far as possible on scientifically sound knowledge. In some cases, courses can also be found that are conducted by doctors or are at least under medical supervision.

One of the best-known training institutions for microcurrent therapy is the Academy for Biological Cell Regulation, which has been offering regular training courses on this topic since 2004. In the meantime, training courses and workshops are held worldwide (Germany, Austria, Switzerland, Italy, Spain, Vietnam, Malaysia ...). The focus is specifically on the area of myofascial muscle chains. The training leaders use the tensegrity model as a model. This is a geometric form that describes the relationship between tensile and tension forces while taking gravity into account. As a result, the interaction of the various tissue organs in the body is explained and it is shown how microcurrent therapy can be integrated into a therapeutic concept.

All cells in the human body are subject to the same biophysical and biochemical laws. In the case of pain, this quickly becomes apparent in the biomechanics, which fixes and moves the osteo-articular system and thus provides a projection surface for any systemic disorder (chronic diseases). Biomechanics should therefore not be neglected in treatment with microcurrent.



“Complex tensegrity structures are similar to images of the Spine and the chest cor-bes.

leg length difference/

What is behind it? What are the causes? What can be the consequences?

Medicine describes a *leg length difference* as a difference in the length of the lower extremities from the foot to the hip. In the case of the real leg length difference, which is anatomically conditioned, a difference in the length of the bones is to be determined. In addition, there is also the functional form, which arises due to malpositions of individual joints or contractures (loss of length) the capsular ligament apparatus and the muscles.
The anatomical leg length difference is caused by accelerated, delayed or absent growth. The shape of the pelvis may be altered or the lower or upper thighs may be shortened. Congenital congenital malformations can be the cause of an anatomical leg length difference. These congenital growth disorders are called osteochondrodysplasias.

These groups of diseases can be localised in the metaphyses, epiphyses, endostal or periosteal. Overall, there is increased or decreased growth of the bone.
But also tumour-related diseases of the lower extremities can result in an anatomical leg length difference. Bacterial and non-bacterial inflammations are also possible causes. This also applies to neuro-orthopaedic diseases associated with paralysis, which influence the bone supply and thus growth. Trauma to the lower extremity, however, was considered the most frequent cause. Radiation as a result of cancer treatment or a systemic disease in which altered metabolic processes occur would also be considered as triggers.

In the case of a functional and anatomical leg length difference different therapies are used. For example, in the case of the functional form, no surgical lengthening of the extremities can be considered. In addition to a possible surgical soft tissue intervention, intensive treatment of the soft tissues is the most important thing. Minimal leg length differences are rarely associated with discomfort, as they can be easily compensated. A slight pelvic obliquity is hardly noticeable. However, even a slight pelvic obliquity should not be underestimated.

Microcurren
t therapy for
leg length
differences
An
alternativ
e?

A leg length difference of less than 1 cm is common. About two out of three people are affected. Greater leg length discrepancies could have serious consequences for the skeletal and muscular system and can lead to lumbar scoliosis and a considerable pelvic obliquity. At a later stage, the cervical spine and thoracic spine may be curved in the opposite direction. In 90% of the cases, this incorrect curvature of the vertebral column becomes fixed and therefore remains. The severe bending of the hips can lead to a permanent bending of the knee on the longer side and a pointed foot posture on the shorter side. The incorrect loading of the hip joint and the spine can lead to arthritis of the vertebral joints, osteophyte formation and increased wear and tear of the intervertebral discs.

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