

4-balance

PARTNER FOR HEALTH

Therapy support at cell level

with micro currents below 2 mA!



Among others in case of rheumatism, pains,
metabolism disorder.

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The electrotherapeutic foot bath

The electrotherapeutic foot bath has been admitted by the European Testing and Certification Institute of medical devices in Graz (CE 0636) according to MDL class II b.

The therapeutic device uses water as an extensive electrode. It is a medical product that makes use of a novel form of application based on the principle of direct current by applying currents of two milliamperes to the human body.

By arranging the innovative electrode system in the bathing element in a particular way, it is ensured that the bio-galvanic low currents flow through the body at 2 mA.

Our product is an innovative medical device which makes a sensible addition to practical offers.

It allows a broad area of application and an efficient support of therapy, especially with:

- rheumatism
- pain
- diseases of peripheral nerves and the central nervous system
- consequences of metabolism disorders

The foot bath is suitable for chrome/nickel allergy sufferers.

The device has been built for permanent operation and offers a high comfort for the user.



Variety of models

Our products are the first electromedical bathing units certified and approved (class II b) by the European Testing and Certifying Institute of Medical Devices in Graz (CE 0636).

All 4-balance products are **CE approved**, manufactured with **ISO certification** to the highest quality standards, easy to use, unmatched in their performance and they fulfil all requirements of the professional user.



To certify a medical device in this category it is necessary to pass a rigorous EC type examination, during which the PMG Graz checks **especially** the safe application of the device. Apart from this the proof of the medical effects has to be furnished.



MFB 04 C

The MFB 04 C provides a highly effective treatment which is caused by our conventional metal electrode system.

With this system the water colour changes during the treatment, mainly because of the oxidation process of the metal coil.



MFB 04

The MFB 04 represents the latest development in the area of medical foot baths. This device uses the unique non-colouring technology, is produced to the highest quality standards and is unmatched in its performance and its comfort of use.

Product features	MFB 04 C	MFB 04
medical product - class II b	●	●
EMV - according to EU regulations	●	●
INDICATIONS	●	●
illuminated display	●	●
program selection	●	●
time selection	●	●
current selection	●	●
electrode consumption display	●	●
GRAPHITE ELECTRODE SYSTEM		●
METAL ELECTRODE SYSTEM	●	
removable bath part	●	●
for allergy sufferers	●	●
contact protection	●	●
water protection	●	●
bath unit ABS	●	●
clinical permanent use	●	●
5 years spare part guarantee	●	●
2 years guarantee	●	●

New electrode system

In order to optimise the effectiveness of the therapeutic device, 4-balance has developed a revolutionary new electrode system. The unique electrode system ensures a special way of electrolysis without discolouration of the water.

With conventional systems (electrodes/converter), the water changes colour because of the oxidation of the metal electrode. These systems have two electrodes made of metal which dissolve when applied in water and cause the strong discolouration of the water. The generated iron oxide is a colourant that has long been used to dye various materials.

The discolouration of the water with conventional metal electrodes is independent of whether the feet of the patient are in the water or not. The different discolourations during application are specified by the quality of the water, the water level in the bathing element, the applied saline solution, the amperage used during treatment, the water temperature, the degree of wear of the metal coils, the strength of material used for the metal coils and the metal alloy.



Water discolouration by traditional metal electrodes



Water after foot bath with the new electrode system by 4-balance

Advantages of the new electrode system

- The use of new materials make the electrode system more resistant so that the water does not change its colour any more.
- During the process of electrolysis, small gas bubbles develop which makes the process visible; by using the new electrode material, small greyish sediments develop in the water.
- A novel arrangement of the electrodes creates a considerably smaller yet more effective current, that stimulates the electrochemical membrane potential of the cells.
- The quality of application is not influenced by the wear of the coil and remains equally effective from the first to the last treatment.
- Metal oxides do not come into contact with the skin of the patient (chrome/nickel), hence there is no risk to allergy sufferers.

The special kind of the electrolysis is caused by our new electrode system without water discoloration.



Working principle

The electrotherapeutic foot bath acts directly on the human organism. It supports the regulating systems of the human body at the smallest level which is important for self regeneration, namely the electrochemical membrane potential of the cell.

Galvanisation is the therapeutic application of a current with constant amperage and direction (direct current). Positively charged cations (Na^+ , Ca^{++} , K^+) move to the cathode under the influence of the galvanic current, the anions (sulphate, chloride) move to the positively charged anode. The device generates a current flow through the human body by creating a sharp decrease of voltage in the water of the foot bath.

Polarisation of the tissue

The ions travel at different velocities depending on the density of the charge. The H^+ ion, for example, moves within the direct current approximately four times faster than the Cl^- ions and about seven times faster than the Na^+ ion. These different travel velocities cause a change in the electrolytic environment.

Changes in the charge condition in the membrane of the cell occur. In each cell, virtual electrodes with anodic and cathodic parts develop.

The permeability of the cell membranes changes under the influence of galvanic current, the processes of diffusion and osmosis increase, the metabolism of the tissue intensifies:

- Diffusion compensates the different concentrations of ions on both sides of the semi-permeable membrane.
- Osmosis causes movement in the solvent (water) in order to even out the different concentrations of dissolved substances within and outside of the cell.

These changes in the concentration of ions and the electrolytic environment, respectively, are used to influence the functional states of the separate tissues of the organism.

An increased cell activity and cell division of the epithelium and the connective tissue is triggered. This causes an improvement of the nutrition of the tissue as well as an increased ATP production and protein synthesis.

Moreover, galvano-therapy means more than just a symptomatic therapy for pain relief. It normalises, depending on the initial condition, the function of the nerves as a whole. As a consequence of membrane potential changes, the stimulus threshold of motor nerves is harmonised.



Supportive areas of application

- pain-relieving
- activation of metabolism
- increased blood flow
 - vasodilation, supporting blood flow
 - increased vascular response time
 - improved dermal and vascular blood circulation
 - release of dermal and vascular blood circulation
- regulation of tissue tension
- tonus-regulating
- improvement of microcirculation
- stimulation of immune system
- stimulation of central nervous system
- anti-inflammatory
- supporting regeneration process
 - stimulation of protein synthesis
 - ATP – increase
 - improvement of amino acid transport system
- increased reflexes in motor nerves
 - catelectrotonus at irritable membrane
 - depolarisation (alleviation of arbitrary contractions)
- supporting resorption

Indications / Contra-Indications

Indications

- neuralgia (neural pain not triggered organically)
- pretreatment of peripheral limb paralysis
- hypoesthesia and paraesthesia after injuries
- arthritis
- myalgia (muscle pain)
- diseases of rheumatic nature
 - degenerative deformation of joints
 - muscular rheumatism
- arterial peripheral circulatory disorder – additionally
 - M. Sudek
 - functional vascular diseases
- discomforts caused by menopause
- hyperirritability (stress)
- sensory disturbance in the legs
- cellulitis

Contra-Indications

- cardiac pacemaker and other electronic implants
- epilepsy
- organic transplantations
- pregnancy / nursing mothers
- metallic implants in area of the legs
- open wounds on the legs must be covered with vaseline.

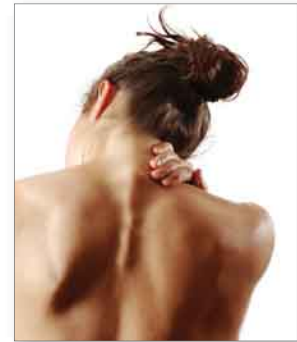
Rheumatic and joint diseases

About a fifth of the western European population suffers from rheumatism.

Diseases of rheumatic nature include more than 450 different diseases of the muscular and skeletal apparatus with chronically painful and permanent restrictions of physical movement.

These are:

- inflammatory-rheumatic diseases (e.g.: arthritis)
- degenerative spinal and joint diseases (e.g.: arthrosis)
- soft part rheumatism (e.g.: fibromyalgia)
- diseases of metabolism with rheumatic discomforts (e.g.: gout)



The electrotherapeutic foot bath helps relieve pain, stimulate the metabolism, reduce swellings and stimulate the blood flow even in deeper tissue layers.



Vegetative disorders / Chronic fatigue

Vegetative disorders (e.g.: sleep- or panic disorders)

Vegetative disorders show themselves in blood pressure fluctuations, dizziness, troubles with breathing, hyperventilation and shortness of breath, anxiety, numbness, Raynaud's syndrome, migraine, irritable bowels, irritable stomach, irritable bladder, sweating/freezing, drop in blood sugar, sudden feeling of faintness, tinnitus, blurred vision and sleep disorders.

The electrotherapeutic foot bath helps harmonise the nervous systems and increase enzyme activity.

Chronic fatigue

More and more people suffer from exhaustion. Therefore, it is about time to give more attention to a hitherto rather vague disease pattern.

For people affected, life often becomes a misery. The reasons and interactions of this rather unspecific disease pattern are not well known up to today.

Symptoms along with the disease are: Lasting fatigue, depressed moods, lack of concentration, night sweats and sensitivity disorders.



The electrotherapeutic foot bath helps patients relax (tone regulation), stimulate the immune system and alleviate stress.

Device operation in practice

The patient puts the feet in water that has been brought to a comfortable temperature and to which a particular saline solution has been added. From the middle of the device the electrode system brings the ions naturally occurring in the body into motion.

For preventive health care, we recommend 10 treatments. A session takes between 10 and 30 minutes. The interval between treatments should be about a week. For causal therapy, the intervals of treatment can be scheduled individually.

During the entire cycle of treatment, the patient is supposed to drink about 3 litres of non-sparkling water daily.

The electrotherapeutic foot bath is especially suited for serving as an additional measure for the medical treatment of the aforementioned diseases.



Application areas in practice

The foot bath is used supportively for...

- effects of metabolic diseases such as gout, rheumatism, etc.
- chronic fatigue, burn-out syndrome
- vegetative disorders
- pain therapy, e.g. with headache and migraine
- heavy metal burden
- skin diseases
- liver and kidney diseases
- dysmenorrhoea (period pain)
- therapy blockades
- allergies like asthma, hay fever, etc.
- diseases by which drains are necessary



The foot bath is suitable for chrome/nickel allergy sufferers.

4-balance

PARTNER FOR HEALTH



4-balance Handels GmbH

develops and distributes medical devices for practical and preventive purposes.

Our research and development conforms to the needs of doctors, therapists and patients.

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