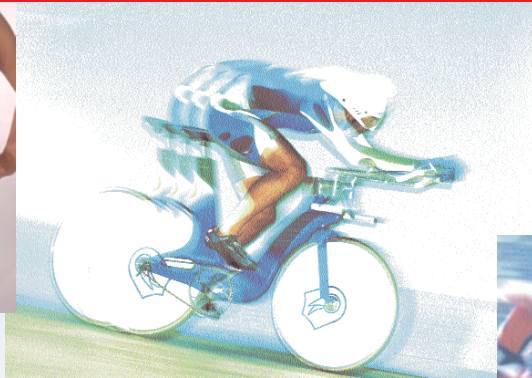




Your recovery our essential



**Dynamic muscle stimulation
your personal masseur**



official partner from the Stephan Roche training centers



The principle of the EMP SPORT technique

4

The principle of the stimulation and the level to be set at an intensity:

6

The principle of the dynamic stimulation

7

PROGRAMME EMP4 SPORT: How is it employed and when?

8

ELECTRODE POSITIONING FOR REGENERATION

12

ELECTRODE POSITIONING FOR PAIN THERAPY

15

**ELECTRODE POSITIONING FOR
MUSCLE TRAINING – CAPILLARISATION – CONTRACTURE**

17

PROGRAMME EMP pocket: How is it employed and when?

20

ELECTRODE POSITIONING FOR REGENERATION

23

ELECTRODE POSITIONING FOR PAIN THERAPY

26

**ELECTRODE POSITIONING FOR MUSCLE TRAINING –
CAPILLARISATION – CONTRACTURE**

28



Above all else, EMP Sport is an application method for stimulating the muscles of sportsmen and women, oriented towards relaxation and pain relief therapy. This handbook has not been conceived as a training planner, because the significant function of this method is not to replace or intensify the training by means of electrical stimulation, but to help the user to integrate EMP Sport technology into preparation and competitive phases of training.

EMP Sport, how and when?

More and more training for increased performance? It is our opinion that you should avoid too much training (overtraining?) and give yourself longer periods of relaxation, to achieve higher levels of performance, because the following principle applies to all sportsmen and women. The body needs to recover after any long period of physical effort. This is the reason why phases of relaxation are currently regarded as the main factor in raising performance in modern sport science.

If you complete 2-3 training units per day or the competition calendar is full, or in the case of problems with time differences at international competitions, a phase of relaxation is necessary.

The EMP Sport Method enables your body to cope with your efforts better and will also help to prepare you for subsequent units of training. The relaxation that is achieved through the EMP Sport 'pocket masseur' will make a personal masseur unnecessary.

We believe that electrostimulation also helps to improve sporting performance, above all because of faster relaxation. This arises from muscular massage, an accelerated removal of lactic acid from the musculature and the stimulation of the muscles and joints, which checks pain. These areas have been medically researched and documented for a long time. As far as the strengthening of muscular power is concerned, electrostimulation merely remains a good complementary method, for example to replace a round of training cancelled due to bad weather, or to avoid muscle loss, e.g. if the legs are not used.

The principle of the SPORÉCUP technique

Our stimulators do not offer an infinite number of programmes, which can often lead to a disappointing, complicated and, in fact, 'restricted' use of a device. Nevertheless, the programmes available are sufficient to enable the sportsman or woman to make a wide, intelligent use of the device.

As this technology can be deployed simply but widely, the number of programmes is limited to 20. Our aim is to provide genuinely advantageous quality for use in the short like in the long term.

Instead of obvious characteristics, such as maximum power up to 150 mA or up to 600 programs, where the user will select the wrong one, EMP Sport has developed new applications using dynamic stimulation. These include relaxing or contraction inhibition massage with a comfort and effectiveness unachieved until now in this area.

This handbook has been conceived for fast and easy application, without giving a complicated advance timetable. You will be able to employ this technology directly after the training or competition, if you need relaxation or if you are suffering from muscular or joint pain.



The principle of the stimulation and the level to be set at an intensity:

Do not attempt to achieve a higher and higher level of intensity. Set the intensity in such a way that you have a comfortable feeling during the treatment with the relaxation and pain and muscle programs. (To do this, carefully raise the intensity to the absolute limit and then reduce it slightly.) You will find that the intensity will change, although you are stimulating the same zone. This is an absolutely normal phenomenon, because different factors influence tolerance to the current and its strength.

- The resistance of the skin: Dry skin has a lower conductivity than damp skin (due to sweating). The skin does not show any linear resistance to current either; for example, the differential frequency can double between the skin on the soles of the feet and the skin in the hollow of the knee. The nerve supply differs greatly according to the region of the body. This explains differences in sensitivity.
- The muscular mass: The bigger this mass is the greater the intensity that can be applied.
- The state of fatigue of the muscle: The more tired the muscle is, the lower the intensity that it is possible to apply.
- The state of the electrodes: the self-adhesive electrodes do not last for ever (30 to 60 applications, depending on the quality). The older the electrodes are the higher the resistance and therefore the lower conductivity. Remember to replace the electrodes regularly!
- The nerve system adjusts to the current extremely quickly, particularly in the first 5 minutes of a program. If you have an impression that the current strength is falling, this is normal. In this case, regulate the current intensity or the channels needed, to achieve a stronger but still comfortable level of stimulation. (This regulation will not be necessary if a program with dynamic stimulation is used.)

CONTRAINDICATIONS

People with a heart pacemaker, those who are epileptic or suffering from dermatological disease in the region to be simulated or pregnant women should not use these stimulators without consulting their doctor of physiotherapist. Only one person may be stimulated with one device.

REGENERATION

A so-called 'cleansing session' immediately after an intensive muscular effort always leads to greater tiredness in the cardio-vascular and physical area and to an additional strain on the sinews and bones. If you use the EMP Sport-Technology with its dynamic stimulation after a competition or an intensive training session, your musculature will relax because of the accelerated removal of lactic acid, which will in turn make a morning after the competition without heavy legs possible. There is also the factor that the muscular load is lower immediately after a competition. You will be able to achieve your performance potential faster accordingly.

P 1 RECOVERY / STAMINA

This program is used after stamina training or a normal training session. The muscles will be able to regenerate faster because of the accelerated removal of lactic acid. The impulse width and frequency are set to the maximum level during the stimulation, without causing any muscular spasm.

P 2 RECOVERY / COMPETITION

The selection of a lower stimulation frequency after a usual training session will avoid spasm in tired muscles. The circulation of blood, which will have been speeded up during the use of the muscle, is now slowing down automatically. The muscle will relax. The body, above all the muscles, which will reach their performance potential faster because of the accelerated removal of lactic acids, will be able to cope with the strain better.

P 3 DYNAMIC RELAXING MASSAGE (fast wave)

This program is ideal for relaxation. Muscles or chains of muscles are properly massaged. The massage movement takes place extremely quickly. You will feel comfortable during its employment, because of the integrated dynamic stimulation. You will be get used to it very quickly.

P 4 DYNAMIC RELAXING MASSAGE (slow wave)

This program is ideal for relaxation. Muscles or chains of muscles are properly massaged. The massage movement takes place extremely slowly. You will feel comfortable during its employment, because of the integrated dynamic stimulation. You will be get used to it very quickly.

P 13 DYNAMIC VENOUS REFLUX

This program is used to drain the calf muscles. The aim is to reactivate venous reflux in the case of heavy legs, without tiring the muscles. The program is never used directly before a competition, but 2 days before or 1 day after it.



PAIN-INHIBITING PROGRAMMES

This category of program is used medically to relieve pain in joints, muscles and nerves. The body's own pain signals are simply replaced by the comfortable signal of the current (medical theory of Gate Control according to Melzack and Wall). In addition, the vicious cycle of pain is initially interrupted and then treated by the pain-inhibiting electrostimulation. (Vicious cycle = the pain itself causes even higher muscular tension, which leads to heavier pain in its turn.) You will feel comfortable during the stimulation, because of the 'pain programs' with integrated dynamic stimulation. Consequently, the effect of the stimulation also increases. The frequencies used enable an immediate pain-inhibiting effect. The application can be repeated without problems, if the effect does not last long enough.

Both of the programmes described in the following serve to combat muscular pain, especially in the back region (chain of back muscles).

P 5 CONTRACTURE

The stimulation causes the muscle to relax. The positive effect lasts for several hours and creates a natural suppleness in the muscles after contractures.

P 6 PAIN THERAPY (SPECIAL JOINT PAIN)

This program is used to alleviate joint pain (shoulder, elbow, knee, ankle joint, wrist, and hips). It is always employed locally; i.e. the electrodes are placed directly on the pain zones.

P 7 DYNAMIC PAIN THERAPY

The pain signals are reduced by the stimulation of the local sensory nerve fibres. You will feel comfortable during the stimulation, because of the integrated dynamic stimulation, and will become accustomed to it very quickly.

MUSCLE TRAINING

Electrostimulation cannot replace any form of active training. It is purely an extremely interesting complementary technology to support active muscle training. It can, however, be used to train muscle groups that the sportsman or woman inadvertently neglects during a usual training session because of this technology. The low frequency electrostimulation by means of muscle contractions can be deployed to strengthen the inter-muscular capillaries. This causes the muscles to become tired less quickly during competition. Apart from this, electrostimulation prevents muscle loss due to immobility.

P 8 WARM UP

This programme is used to increase the proportion of endorphins in the cephalic fluid. This will put the sportsman or woman into a euphoric mood before the competition begins.

P 9 STAMINA

This program is used to train the muscles at medium strength during a longer period. Stamina training is augmented extremely well by this. The slow muscle fibres are able to make a greater contribution, thus improving the oxidizing capacity of the muscle.

P 10 STRENGTH / STAYING POWER

Here, staying power becomes a factor. The level of the working strain to which the muscles are subjected during it must to be considered. The advantage of electro-stimulation is that physical tiredness and cardio-vascular stress are not factors. The muscle will already be completely exhausted following one application. The muscle will have to be trained more intensively to improve the strength staying power. Because of this, muscle contractions are employed between extremely short active relaxation phases for a longer period.

P 11 SPRINGINESS (explosive)

This program is oriented towards forms of sport where high performance is demanded for only a short period of time, e.g. in the case of jumping, where the aim is to achieve a maximum contraction more quickly. The application of this program is only sensible if the muscle is already in active (voluntary) training. You should not use this program during phase of muscle construction under any circumstances. The frequencies and working periods enable the maximum contraction of the fast muscle fibres.

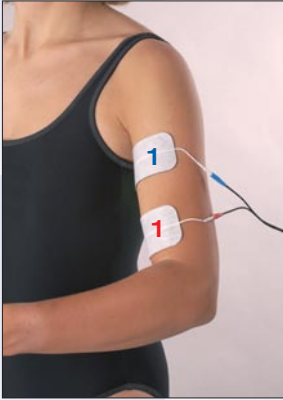
P 12 BLOOD SUPPLY

This program is used to increase the intra-muscular capillaries and improve the energy substrate. Through this, the fibres will be able to maintain a higher commitment for a longer time. This program is employed for 4 to 5 weeks, 5 times a week, in the final training phase shortly before the beginning of the season. Through this, cramps that can arise during the competitions will be avoided.

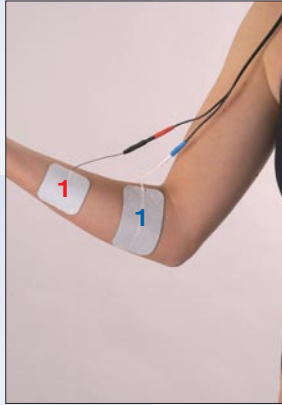
ELECTRODE POSITIONING FOR REGENERATION

How should the electrodes be positioned for the programmes RECOVERY / STAMINA (P 1) – RECOVERY / COMPETITION (P 2)

Biceps



Hand flexor



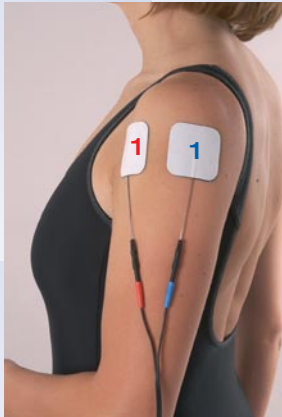
Hand extensor



Triceps



Deltroideus

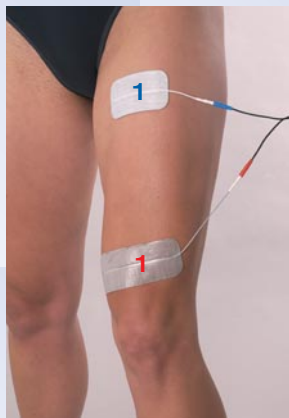


Trapezius



ELECTRODE POSITIONING FOR REGENERATION

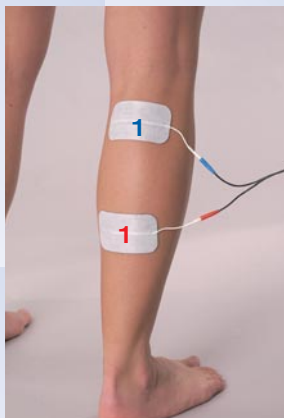
Quadriceps



Leg flexor

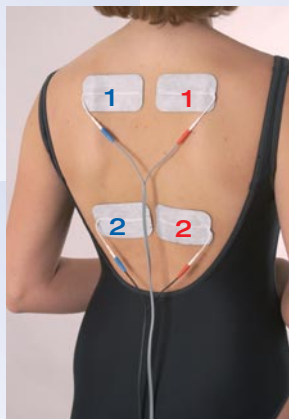


Calf



How should the electrodes be positioned for the programmes dynamic relaxing massage (P 3) – DYNAMIC RELAXING MASSAGE (P 4) – DYNAMIC VENOUS REFLUX (P 13)

Back

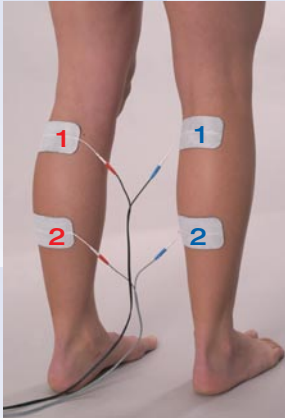


Stomach muscle

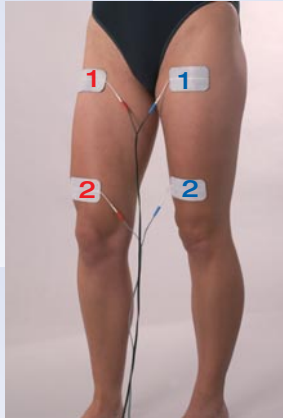


ELECTRODE POSITIONING FOR REGENERATION

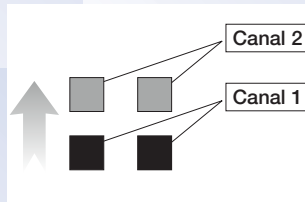
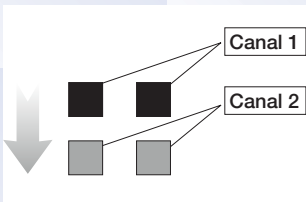
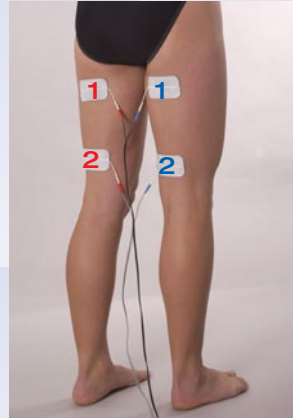
Calf



Quadriceps



Leg flexor



ELECTRODE POSITIONING FOR PAIN THERAPY

How should the electrodes be positioned for the programme PAIN THERAPY (P 6)

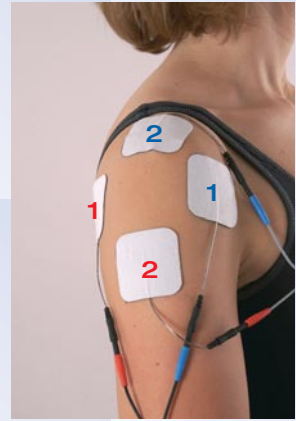
Neck



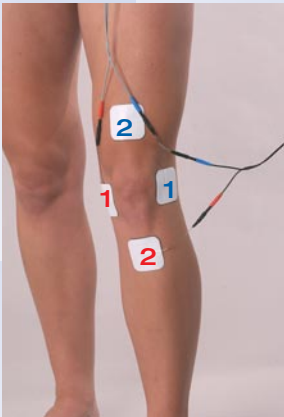
Deltroideus



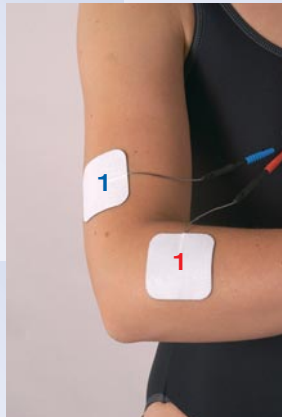
Shoulder



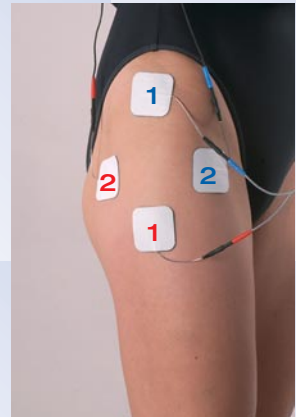
Knee



Elbow



Hips



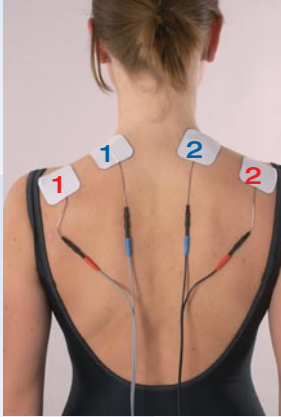
ELECTRODE POSITIONING FOR PAIN THERAPY

How should the electrodes be positioned for the programme DYNAMIC PAIN THERAPY (P 7)

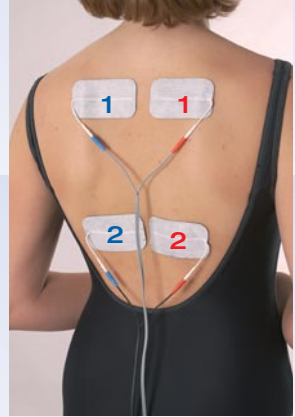
Latissimus



Trapezius



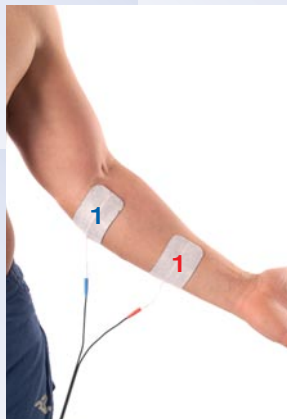
Back



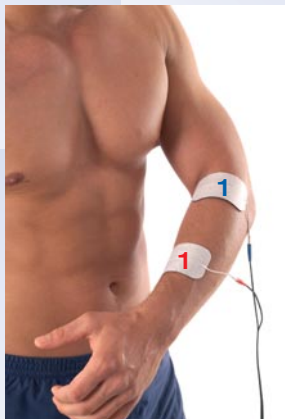
ELECTRODE POSITIONING FOR MUSCLE TRAINING – CAPILLARISATION – CONTRACTURE

How should the electrodes be positioned for the programmes CONTRACTURE (P 5) – WARM UP (P 8) – STAMINA (P 9) – STRENGTH / STAYING POWER (P10) – SPRINGINESS (P 11) – BLOOD SUPPLY (P 12)

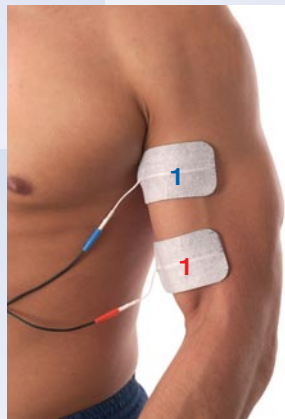
Hand flexor



Hand extensor



Biceps



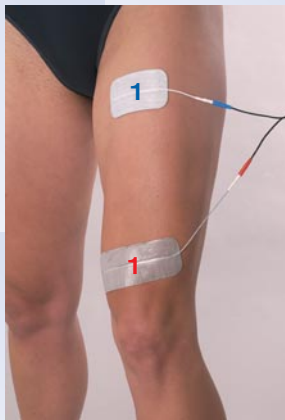
Triceps



Back



Quadriceps



ELECTRODE POSITIONING FOR MUSCLE TRAINING – CAPILLARISATION – CONTRACTURE

Leg flexor



Foot flexor



Foot extensor



Calf

