User and applications
manual

Mi-Sport 500
Before using the device, Compex recommends that you read this manual carefully.

In particular, we recommend that you read chapter I (“Warnings”) and chapter V (“Programmes and specific applications”).

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1. **Sport** category

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1.2 Table of the **Sport** programmes

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- Preparation for a cyclist training three times a week who wishes to improve endurance performance
- Preparation for a cyclist training three times a week who wishes to improve his power
- Preparation for a runner training three times a week who wishes to progress in endurance (half-marathon, marathon)
- Preparation for a sportsman who wishes to improve the strength of his pectoralis major muscles
- Preparation for a swimmer training three times a week who wishes to improve his swimming power
- Pre-season preparation for a team sport (football, rugby, handball, volleyball, etc.)
- Maintaining results achieved during preparation for team sports during the competitive period (football, rugby, handball, volleyball, etc.)
- Pre-season preparation of lactic capacity for a resistance sport, with three active training sessions per week (800 metres, track cycling, etc.)
- Preparation for a sportsman who wishes to improve the muscular qualities of his abdominal muscles
- Preparation for a sportsman who wishes to improve the efficiency of the muscular reinforcement of his abdomen
- Pre-season preparation of the explosive strength of the quadriceps for an athlete training three times a week (long jump or high jump, sprinting, etc.)
- Use of Potentiation programme to optimise the effects of explosive strength (sprints, jumps, squash, football, basketball, etc.) immediately before specific training or competition

2. Muscle volume for a body-builder

- Muscle volume for a body-builder training three times a week
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I. WARNINGS

1. Counter-indications

1.1 Important counter-indications

- Cardiac stimulator (pacemaker)
- Epilepsy
- Pregnancy (no positioning in the abdominal area)
- Serious arterial circulatory problems in the lower limbs
- Abdominal or inguinal hernia

1.2 Precautions when using the Compex

- After trauma or a recent operation (less than 6 months)
- Muscular atrophy
- Persistent pains
- Need for muscular rehabilitation

In all of the above cases, you are advised to:
- never use the Compex for prolonged periods without medical advice;
- consult your doctor if you are in any doubt whatsoever;
- read this manual carefully, in particular chapter V, which provides information concerning the effects and indications of each stimulation programme.

2. Safety measures

2.1 What you should not do with the Compex and the \textit{M2-SENSEOR} system

- Do not use the Compex or the \textit{M2-SENSEOR} system in water or in a humid atmosphere (sauna, hydrotherapy, etc.).
- Never carry out an initial stimulation session on a person who is standing. The first five minutes of stimulation must always be performed on a person who is sitting or lying down. In rare instances, very highly strung people may have a vagal reaction. This is of psychological origin and is connected with a fear of the muscle stimulation as well as surprise at seeing one of their muscles contract without having intentionally contracted it themselves. This vagal reaction produces a feeling of weakness with a fainting tendency, slowing down of the heartrate and a reduction in arterial blood pressure. If this does occur, all that is required is to stop the stimulation and lie down with the legs raised for the time it takes for the feeling of weakness to disappear (5 to 10 minutes).
- Never allow movement resulting from muscular contraction during a stimulation session. With the exception of the programmes of the \textit{Vascular}, \textit{Massage} and \textit{Pain} categories, and the \textit{Concentric}, \textit{Eccentric}, \textit{Stretching} and \textit{Active recovery} programmes, you should always stimulate isometrically; this means that the extremities of the limb in which a muscle is being stimulated must be firmly fixed so as to prevent the movement that results from contraction.
- Do not use the device or the \textit{M2-SENSEOR} system at less than 1.5 metres from a short-wave device, a micro-wave device or high frequency (H.F.) surgical equipment to avoid the risk of causing skin irritations or burns under the electrodes.
- Do not disconnect the stimulator electrode cables during the session without first switching off the stimulator.

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- Never recharge the stimulator when cables and electrodes are still connected onto the user.
- Never recharge the batteries with another charger than the one supplied with the Compex.
- Do not use the stimulator in the mountains at an altitude higher than 3,000 metres.

2.2 Where you should never apply electrodes...

- To the head.
- Counter-laterally: Do not use the two poles of the same channel (one electrode connected to the positive/red pole and one electrode connected to the negative/black pole) on either side of the body centreline (e.g., right arm and left arm).
- To or in the vicinity of skin lesions of any kind (wounds, inflammations, burns, irritations, eczema, etc.).

\[\text{Current international standards require that a warning be given concerning the} \]
\[\text{application of electrodes to the thorax: increased risk of cardiac fibrillation.} \]

2.3 Precautions when using the \text{mi-sensor} system

- To access the \text{mi} functions of the Compex, the special electrode cable of the \text{mi-sensor system} must be connected before the device is switched on.
- Avoid connecting the special electrode cable of the \text{mi-sensor system} when the Compex is switched on.
- Do not disconnect the special electrode cable of the \text{mi-sensor system} before switching off the device.
- To work correctly, the \text{mi-sensor system} must not be blocked or subjected to pressure.

2.4 Precautions when using the electrodes

- Only use the electrodes supplied by Compex. Other electrodes may have electrical properties that are unsuitable for the Compex stimulator.
- Do not remove or move the electrodes during a stimulation session without first switching off the instrument.
- Do not plunge the electrodes into water.
- Do not apply a solvent of any kind to the electrodes.
- Before applying the electrodes it is recommended to wash and degrease the skin, and then dry it.
- Apply the whole surface of the electrodes to the skin.
- For very important reasons of hygiene, each user must have his own electrode set. Do not use the same electrodes on different people.
- Do not use a set of electrodes for more than fifteen sessions, as the quality of the contact between the electrode and the skin, which is important for the comfort and effectiveness of stimulation, progressively degrades.
- In certain people with very sensitive skin, redness may be observed under the electrodes after a stimulation session. Generally, this redness is completely harmless and disappears after 10 to 20 minutes. However, avoid starting a stimulation session on the same area until the redness is no longer evident.

II. PRESENTATION

1. Reception of equipment and accessories

- Your stimulator is supplied in a very practical case containing:
  A. The stimulator
  B. A battery charger
  C. One set of electrode cables with colour indicators (blue, green, yellow, red)
  D. One special electrode cable for the \text{mi-sensor} system
  E. 4 bags containing the electrodes:
     - 2 bags with 4 small electrodes (5 x 5 cm)
     - 2 bags with 2 large electrodes (5 x 10 cm)
  F. A user and applications manual
  G. A CD-ROM containing the training planner

2. Presentation of the device

- \text{H. LCD display}
- \text{I. “On/Off” switch (✓)}
- \text{J. “+”/“-” keys of the 4 stimulation channels}
- \text{K. Sockets for the 4 electrode cables}
- \text{L. Classical electrode cables}
  - channel 1 = blue
  - channel 2 = green
  - channel 3 = yellow
  - channel 4 = red
- \text{M. Electrode cable for the \text{mi-sensor} system}
- \text{N. Socket for the battery charger}
- \text{O. Compartment for the rechargeable battery}
3. Guarantee

The Compex stimulators are contractually covered with a guarantee of 2 (two) years. The Compex guarantee comes into effect on the date of purchase of the device. The guarantee is valid only on presentation of proof of purchase.

The guarantee covers the stimulator and the special electrode cable for the \textit{Bi-Sensor} system (goods and labour), but does not cover the other cables, the electrodes and the batteries. It covers all the defects resulting from a problem of quality of the material or from a production error. It does not apply if the device was damaged as the result of a shock, an accident, incorrect use, insufficient protection against humidity, plunging into water or a repair not carried out by our after-sales service department.

Legal rights are not affected by this guarantee.

4. Cleaning your unit

To clean your unit, use a soft duster and an alcohol-based cleaning product, which does not contain any solvents. In fact, solvents could damage the plastic parts, especially the panel covering the screen of your Compex.

The user must not attempt any repairs to the device or any of its accessories.

Compex Medical SA declines all responsibility for damages and consequences resulting from any attempt to open, modify or repair the device or any of its components by a person or a service centre not officially approved by Compex Médical SA.

Compex stimulators do not require calibration or verification of performance parameters. The characteristics are systematically verified and validated for each device manufactured. These characteristics are stable and do not vary when used under normal conditions.

If your device seems to not function as expected, regardless of the situation, contact an official Compex service centre for assistance.

Medical and health professionals must refer to local legislation for information related to maintenance. Normally, these laws require verification of certain criteria at regular intervals.

5. Storage conditions

The Compex contains rechargeable batteries and so the storage conditions must not exceed the following figures:
- \textbf{Storage temperature} from -20°C to 45°C
- \textbf{Max. relative humidity} 75%
- \textbf{Atmospheric pressure} from 700 hPa to 1060 hPa

6. Elimination

For environmental protection the device, the battery and its accessories have to be eliminated with special waste.

7. Standards

The Compex is based directly on medical technology.

To guarantee your safety, the design, manufacturing and distribution of Compex are in conformity with the requirements of the European Directive 93/42/CEE.

The device is in conformity with the standard for general safety rules for electromedical devices IEC 60601-1, the standard for electromagnetic compatibility IEC 60601-1-2 and the standard for special safety rules for nerve and muscle stimulators IEC 60601-2-10.

8. Patents

\begin{itemize}
  \item US Patent 6,324,432. Patents pending in the USA, Japan and Europe.
  \item Snap electrode Patent pending.
\end{itemize}

9. Normalised symbols

\begin{itemize}
  \item Important: Under some conditions, the effective figure for the stimulation pulses can exceed 10 mA and 10 V. The information given in this handbook must be strictly observed.
  \item The Compex is a class II device unit with its own internal electric power, with type BF applied sections.
\end{itemize}

The “On/Off” switch is a multi-function key:

\begin{itemize}
  \item \textbf{Functions} \hfill \textbf{Symbol N° (according to CEI 878)}
  \item On/Off (2 positions, stable) \hfill 01-03
  \item Waiting or preparation for part of the unit \hfill 01-06
  \item Stop (switching off) \hfill 01-10
\end{itemize}
10. Technical information

10.1 General points

**Power supply**
NIMH rechargeable battery (NIMH) (7.2 V \( \times \) 1200 mA/h)
The only chargers used for recharging the battery bear the following information:
- **Europe:**
  - Type CP01011120
  - Input 90-264 VAC / 47-63Hz / 0.25A max.
  - Output 12V / 800mA / 11W
- **USA:**
  - Type CP01011120U
  - Input 90-264 VAC / 47-63Hz / 0.25A max.
  - Output 12V / 800mA / 11W
- **UK:**
  - Type CP01011120B
  - Input 90-264 VAC / 47-63Hz / 0.25A max.
  - Output 12V / 800mA / 11W

**Body**
Plastic

**Dimensions**
Length: 142 mm; width: 99 mm; height: 36 mm

**Weight**
350 g

10.2 Neurostimulation

All electrical specifications are given for a charge between 0 and 1000 ohms per channel.

**Channels**
Four independent and individually adjustable channels galvanically insulated from each other and from ground

**Impulse shape**
Constant rectangular current compensated to eliminate any direct galvanic component to avoid any residual skin polarisation

**Maximum current of an impulse**
120 milliamperes

**Maximum manual current increase interval**
1 milliampere

**Impulse duration**
from 30 to 400 microseconds

**Maximum quantity of electricity per impulse**
96 microcoulombs

**Maximum rise time for an impulse**
2 microseconds at 50% of maximum

**Impulse frequency**
from 1 to 150 Hertz

III. USE PRINCIPLES

1. Indications

The Compex was designed...
1) **to stimulate the muscle motor nerves of healthy persons** to improve their muscular performance, to achieve a relaxing effect or to improve circulation exchanges;
2) **to stimulate** – under the supervision of a competent health professional – **the muscles motor nerves degraded by a process of under- or non-utilisation** to restore their functional muscular capacities;
3) **to stimulate certain sensitive nerve fibres**, to obtain recognised analgesic benefits (but this type of stimulation must not be applied for a long period without medical advice).

The electrical impulses generated by the Compex release potentials acting on different types of nerve fibres:
1) **The motor nerves**, with the effect of causing a muscular mechanical response; the characteristics and benefits depend on the stimulation parameters;
2) **Certain types of sensitive nerve fibres**, to achieve “Gate Control” effects (i.e., the excitation of the Aß fibres) or “Endorphinic” effects (i.e., the excitation of the Aδ fibres), which are widely recognised.

2. Practical rules for general use

2.1 Introduction

The use principles presented in this section should be considered general rules. For all programmes, it is recommended that you read carefully the information and advice on use presented in chapter V of this manual (“Programmes and specific applications”).

Consultation of the “Training planner” section of the CD-ROM supplied with the Compex is recommended in particular for users whose aim is to improve their sports performance level (planning training with Sport category programmes).

Note: Specific information on the various Mi technology functions is given later on in this chapter (sections 3, 4 and 5); we strongly recommend that you read this information before use.

2.2 Placement of electrodes

The choice of electrode size (large or small) and the correct positioning of the electrodes on the muscular group to be stimulated are determinant and essential factors for the effectiveness of the technique.

**It is therefore recommended that you always dedicate particular care to this and that you comply with the suggested placements** (see the flaps at the end of the manual and the specific applications in chapter V).

Note: It is important to place the electrodes correctly to the cable connectors; in order to do so, press strongly the connector to the electrode until you hear a double click.

For stimulation with the Mi technology, all the suggested placements represent the optimal positioning of this system. It is therefore recommended that you follow these indications strictly.

If you do not want to use Mi technology, all you need to do is to replace the special electrode cable of the Mi system with another standard electrode cable.
2.3 Stimulation position

The stimulation position depends on the muscular group to be stimulated. The various suggested positions are clearly indicated in pictograms next to the pictures illustrating electrode placement (see the pictures on the flaps at the end of the manual and those accompanying the specific applications in chapter V).

For programmes that trigger significant contractions (tetanic contractions), isometric work is recommended, i.e., the extremities of the limbs should be fixed so that there is no significant movement. For example, when stimulating the quadriceps, the user should be in a seated position with the ankles fixed with straps to prevent extension of the knees.

Working in this way has a dual purpose: on the one hand, to ensure greater safety and, on the other, to limit shortening of the muscle during the contraction, with the risk of sharp cramps under stimulation. As the contraction is particularly strong at the calf when the foot is extended, make sure that you have a sufficiently large load on your shoulders (or using some other means) so that the contraction remains static.

With the exception of specific indications for a particular programme, which you will find in the specific applications in chapter V), dynamic work should not be done without resistance.

For the other types of programmes (for example, the programmes of the Vascular, Massage and Pain categories and the Active recovery programme), which do not involve powerful muscular contractions, position yourself as comfortably as possible.

2.4 Setting the stimulation energy levels

In a stimulated muscle, the number of recruited fibres depends on the stimulation energy. It is therefore absolutely necessary to use maximum stimulation energies so as to involve the greatest possible number of fibres. Below a significant stimulation energy level, it is pointless, for an average user, to do stimulation sessions. In fact, the number of fibres involved in the stimulated muscle is too low for any interesting improvement in the performance of that muscle.

The progress of a stimulated muscle will be all the greater if a high number of its fibres are recruited by the Compex. If only 1/10 of the fibres of a muscle work under stimulation, only that 1/10 can progress. That is obviously much less appreciable than if 9/10 of the fibres work and can therefore progress.

You should therefore take care to work with maximum stimulation energies, i.e., always at the limit of what you can support.

There is obviously no need for you to reach the maximum current strength right from the first contraction of the first session of the first cycle. If you have never used Compex stimulation before, you should do a few sessions of the Muscle starter programme, with sufficient energy to produce powerful muscular contractions to familiarise yourself with the technique of electrostimulation. You can then start your first stimulation cycle with your own specific programme and level. After the warm-up, which must produce very clear muscular twitches, you should raise the stimulation energy progressively, from contraction to contraction, during the first three or four minutes of the work sequence. You should also progress with stimulation energies used from session to session, particularly during the first three sessions of a cycle. A normally prepared person will already reach very significant stimulation energies during the fourth session.

2.5 Scheduling of the stimulation sessions

The question of the scheduling of the stimulation sessions during the week only arises in situations where at least two training sessions are to be done in the same week.

In cases where up to six sessions a week are planned, it is recommended that the sessions be scheduled as far apart as possible. For example, anyone who does three sessions a week should do them at the rate of one session every two days (one rest day twice and two rest days once every week). Anyone who does six sessions should do six consecutive days of stimulation with one rest day.

Above seven sessions a week, it is advisable to group several sessions together on the same day to leave yourself one or two complete rest days without stimulation. Anyone who does seven sessions a week should do five days of stimulation, at the rate of one session per day with one two-session day (with at least a half-hour’s rest between the sessions), leaving one rest day. Anyone who does ten sessions a week should preferably do five two-session days (again with at least a half-hour’s rest between the sessions), leaving two rest days.

2.6 Alternation of stimulation sessions / voluntary training

The stimulation sessions can be done outside or during voluntary training.

When voluntary training and stimulation are done during the same session, it is generally recommended that the voluntary training be done first followed by the stimulation. This means that the voluntary training is not done on muscle fibres which are already tired. This is particularly important for strength and explosive strength training.

However, in resistance training, it can be very useful to proceed in the reverse order. Before the voluntary training, by means of stimulation for resistance, a “specific pre-fatigue session” is carried out on the muscle fibres without general and cardio-vascular fatigue. In this way, the voluntary effort on the “prepared” fibres will push the glycolytic metabolism faster and further.
III. Use principles

2.7 Progression in the levels

In general, it is not advisable to go through the different levels quickly with the intention of reaching level 5 as fast as possible. The different levels correspond to progress in training and you must leave the muscles time to adapt, and time for the overcompensation to be put in place.

The most frequent error is to change from level to level as stimulation occurs at increasingly higher stimulation energies. The number of fibres subjected to stimulation depends on the stimulation energy. The nature and amount of work that these fibres do depend on the programme and level. The aim is, first of all, to progress through the electrical stimulation energies and then through the levels. The more numerous the muscle fibres you stimulate, the more numerous will be the fibres that are going to progress. But the speed of progress of these fibres and their aptitude for operating at a higher rating depend on the programme and level used, the number of sessions per week and the length of these sessions, and also on intrinsic factors particular to each individual.

The simplest and most usual procedure is to raise the level in the programme selected when changing to a new stimulation cycle.

It is also possible to go up a level in the course of the same cycle. In this case, it is advisable not to do so before working a minimum of three weeks at the same level.

Do not change level during an auxiliary or maintenance application. Do not change level either during a short intensive or aggressive cycle of three to four weeks. On the other hand, following the classic approach, during a six-week cycle, after three weeks you can change to the level above. Similarly, in an intensive or aggressive cycle of six to eight weeks, you can go up a level after three to four weeks.

2.8 Warming-up for stimulation

All the programmes involving significant contractions (tetanic contractions) of the stimulated muscles automatically start with a warming-up sequence. This is indicated on the screen by an animated rising convection symbol above the heater symbol.

If no voluntary physical activity has been done in the minutes preceding the stimulation session, it is recommended that you do the warm-up. If the stimulation session is included in a voluntary training session and some voluntary activity immediately precedes the stimulation, it is unnecessary to do the warming-up sequence. You can therefore delete the rising convection symbol (see procedure of chapter IV: “Directions for use and instructions”, section 7: “Personalising a programme”), and the session will start directly with the specific work selected without any prior warm-up.

After the stimulation work sequence, a relaxation sequence starts automatically. This is to allow improvement in the recovery of a muscle after its work under Compex and to limit muscular aches to some extent. Unless you want to go on immediately to voluntary training stages, it is recommended that you let the last sequence go ahead. It is also recommended, even if the stimulation seems to improve your muscular elasticity, that you do some stretching of the muscles that you have just worked with the Compex.

3. What is Mi® technology?

Mi® stands for “muscle intelligence”™ (All items referring to this technology are preceded by the symbol Mi®)

This technology takes into account the specificities of each of our muscles and thus offers stimulation adapted to their characteristics.

It’s simple, as the data is transmitted to the stimulator automatically!

It’s personalised, as each of our muscles is unique!

Mi®-SPORT500

Is the name of the muscular stimulator itself. It is the first device of the Compex range incorporating this technology.

Mi®-SENSOR

This is a little sensor that links the stimulator to the electrodes. Mi®-SENSOR is the key component that enables to measure certain physiological characteristics of a muscle, to analyse them and to adapt the stimulation parameters accordingly.

It is this component that allows the muscle to talk.

Mi®-SCAN

This function adapts the electrostimulation session to the physiology of each user. Just before starting the work session Mi®-SCAN, probes the chosen muscular group and automatically adjusts the stimulator parameters to the excitability of this area of the body. It is a truly personalised measurement.

Mi®-ACTION

This is a work mode in which a voluntary muscular contraction is automatically accompanied by a contraction caused by electrostimulation. The electrostimulation contraction is therefore perfectly controlled, and the working session thus becomes more comfortable (from both the psychological and muscular standpoints), more intensive (the muscle works more and in greater depth) and more complete (improvement of coordination).

Mi®-TENS

The optimal stimulation energy needs to be identified and used throughout the TENS programme (analgesthetic). On the basis of the measurements taken regularly during the session, the device permanently and automatically readjusts the stimulation energy to avoid any onset of muscular contraction, which is strongly counter-indicated for programmes of this type.

Mi®-ENERGY

With the new Mi®-ENERGY measurement scale, the progression of the stimulation energy is linear, producing a more comfortable stimulation.

... as though each session had been programmed for you ...
4. Practical rules of use with the **mi-SENSOR** system

- To access the **mi** technology functions of the Compex, the special electrode cable of the **mi-SENSOR** system must be already connected before switching on the device.
- Avoid connecting the special electrode cable of the **mi-SENSOR** system when the Compex is switched on.
- To work correctly, the **mi-SENSOR** system must not be blocked or subjected to pressure.
- The **mi-SENSOR** system must be already connected before switching on.
- The **mi-SENSOR** system is very sensitive: the smallest contraction or the least movement could disturb the measurement test.

### 4.1 **mi-SCAN** function

- The **mi-SCAN** function is accessible only for programmes requiring the choice of a muscular group.
- The **mi-SCAN** function allows you to adapt the characteristics of the stimulation impulses to the individual specificities of each person and the excitability characteristics of the stimulated muscle. This function is implemented, at the start of the programme, by a short sequence during which measurements are taken (a horizontal bar scans the figurine at the left of the screen).
- Throughout the entire measurement test, you must remain completely still and be perfectly relaxed. The **mi-SENSOR** system is very sensitive: the smallest contraction or the least movement could disturb the measurement test.
- The duration of the **mi-SCAN** test varies depending on the muscle involved and the individual characteristics of each person. The test lasts 12 seconds on average and never more than 21 seconds.
- During the test, an unpleasant tickling sensation may sometimes be felt by certain people.
- Once the test has been completed, the programme can start.

### 4.2 **mi-ACTION** mode

- The **mi-ACTION** mode allows the user to start the muscular contraction phase by voluntarily contracting the stimulated muscle. It thus offers an opportunity to associate voluntary work and stimulation.
- The **mi-ACTION** mode is available only for certain programmes that allow this work mode.
- Programmes using the **mi-ACTION** mode are always preceded by the **mi-SCAN** measurement test (see previous section).
- The **mi-ACTION** work mode is operational during the active rest phases of a work sequence. It is not operational during warming-up and relaxation sequences.
- After the warming-up phase, the first muscular contraction is started automatically.

### 4.3 **mi-TEMPO** function

- The **mi-TEMPO** function allows you to limit considerably the onset of unwanted muscular contractions, thus assuring a maximum of comfort and effectiveness.
- The **mi-TEMPO** function is available only for the Sophisticated TENS, Arthralgia and Epicondylitis.
- For these programmes, the **mi-TEMPO** function allows you to control the stimulation energies while maintaining them at an effective level and considerably limiting the onset of muscular contractions.
- Short measurement tests (lasting 2 to 3 seconds) are carried out regularly throughout the entire programme.
- There is a test phase after each increase of the stimulation energies. To ensure the correct performance of these tests, you must remain perfectly still during this time.
- Depending on the results of the measurement tests recorded by the device, the level of the stimulation energies may be slightly decreased automatically.
- It is important always to adopt the most comfortable possible stimulation position. Also, you should try to remain still and not contract the muscles of the stimulated area.

- The voluntary start of a contraction (during an active rest phase) is possible only within a given time span that varies depending on the programme used. An alternation of sound signals delimits this time span in the following order:
  - An initial sound signal (consisting of increasingly close “bleeps”) indicates that the start of the voluntary contraction phase is possible.
  - The sound signal is continuous: this is the ideal time to start the voluntary contraction phase.
  - The sound signal decreases: the start is still possible and the work rate is still satisfactory.
  - After a certain time – which varies depending on the programmes – during which the “bleeps” are more spaced out, the device automatically goes into the “Pause” mode if no contraction phase has been started (see point 8.3e of chapter IV for instructions on how to restart the session).
- To restart a muscular contraction during the active rest phase, the **mi-SENSOR** system must detect strong muscular twitches. To do this, the device prompts you, if necessary, to increase the stimulation energies during the active rest phase. If, despite that, the **mi-SENSOR** system does not detect sufficient muscular twitches within 20 seconds, the device goes into the “Pause” mode.
5. Practical rules of use in the **Action** mode

To achieve maximum effectiveness, the **Action** work mode requires good muscular qualities. Muscles with poor performance may, in certain cases, prevent the voluntary start of the contraction.

The **Action** work mode, associated with exercises carried out dynamically (i.e., with an associated movement), should be reserved for sportsmen doing voluntary muscular training and already familiar with muscular training by electrostimulation. Some of these exercises (such as squats) are difficult to do in the **Action** work mode, because of the particular order of the specific motor sequences of the exercise.

In the event of repeated failures when using the **Action** work mode, it is recommended that you carry out a complete work cycle in the "classic" mode, before making any new attempt in the **Action** mode.

The electrostimulation carried out with the "classic" type programmes of the Compex gives particularly convincing results. The **Action** technology with which your stimulator is equipped goes even further and offers many additional advantages. The **Action** type programmes of the categories **Sport**, **Fitness**, **Aesthetic** and **Rehabilitation** offer certain undeniable benefits:

- They ensure even more effective work, as they associate voluntary exercises and electrostimulation, which together stimulate the muscular fibres more intensively.
- They leave the user free to choose whether to start a contraction, thus making the use of electrostimulation even more comfortable.
- They require active participation and encourage the user to become fully involved in his treatment.

To make the most of all these advantages, it is particularly important to comply with certain rules of use.

The following table shows the different muscular groups and gives some very useful indications concerning the best stimulation position to adopt and how to start a contraction voluntarily.
### Muscular groups Placement of electrodes Stimulation positions Voluntary start of the contraction phase

#### Quadriceps
- Take up a seated position
- The work can be done in two ways:
  - statically, if you have taken the necessary measures to block the movement of your knees
  - dynamically, if you want to emphasize work with movement, against an object offering resistance created by using heavy weights
- Strongly contract your quadriceps, while trying to extend your legs

#### Buttocks
- Lie down on your stomach or stand up
  - Special recommendations:
    For the buttocks, the **ACTION** mode requires very good muscular qualities and is not compatible with certain morphological configurations
    In the event of repeated failures with the **ACTION** mode, we recommend work on the buttocks in the “classic” mode
- Vigorously contract your buttock muscles, while strongly trying to close your buttocks and trying to bring your thighs behind your trunk

#### Abdominal muscles
- Lie down stretched out on your back, which can be slightly raised
  - The work can be done in two ways:
    - statically, if you are simply trying to voluntarily start the muscular contraction phase
    - dynamically, if you want to associate an exercise with the movement that consists of bringing the trunk towards the thighs; in this case, take care not to accentuate the lumbar region arch (lordosis); to do this, it is essential to work always with your knees well bent
- Strongly contract your abdominal muscles, while strongly trying to raise your head and shoulders from their support

#### Low back muscles
- Take up a seated position
  - Special recommendations:
    Because of the anatomical and morphological specificity of the low back muscles region, it is necessary to have muscles with particularly good performance to work in the **ACTION** mode
  - In the event of repeated failures with this work mode, we recommend work in the “classic” mode or to use the recommended placement for combined stimulation of the low back muscles and erector spinalis (picture n° 14); in this case, always take care to position the **ACTION** system at the level of the dorsal region muscles, as shown in the picture
- Vigorously contract the low back muscles, while making an effort to sit as tall as possible

#### Quadriceps
- Take up a seated position
- Strongly contract your quadriceps, while trying to extend your legs

#### Buttocks
- Lie down on your stomach or stand up
  - Special recommendations:
    For the buttocks, the **ACTION** mode requires very good muscular qualities and is not compatible with certain morphological configurations
    In the event of repeated failures with the **ACTION** mode, we recommend work on the buttocks in the “classic” mode
- Vigorously contract your buttock muscles, while strongly trying to close your buttocks and trying to bring your thighs behind your trunk

#### Abdominal muscles
- Lie down stretched out on your back, which can be slightly raised
  - The work can be done in two ways:
    - statically, if you are simply trying to voluntarily start the muscular contraction phase
    - dynamically, if you want to associate an exercise with the movement that consists of bringing the trunk towards the thighs; in this case, take care not to accentuate the lumbar region arch (lordosis); to do this, it is essential to work always with your knees well bent
- Strongly contract your abdominal muscles, while strongly trying to raise your head and shoulders from their support

#### Erector spinalis
- Take up a seated position
- Vigorously contract the dorsal region muscles, while making an effort to sit as tall as possible

#### Cervical muscles
- Take up a seated position
- Vigorously contract the dorsal region muscles, while making an effort to sit as tall as possible

#### Trapezius
- Take up a seated position
- Strongly contract your trapezius muscles, while vigorously trying to shrug your shoulders
### Muscular groups, Placement of electrodes, Stimulation positions, Voluntary start of the contraction phase

<table>
<thead>
<tr>
<th>Muscular groups</th>
<th>Placement of electrodes</th>
<th>Stimulation positions</th>
<th>Voluntary start of the contraction phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deltoids</td>
<td>Take up a seated position, with your elbows placed inside armrests to create resistance of the arms to their movement away from the body</td>
<td>Vigorously contract your deltoids, while strongly trying to move your elbows away from your body</td>
<td></td>
</tr>
<tr>
<td>Latissimus dorsi</td>
<td>Take up a seated position, with your elbows placed outside armrests to create resistance of the arms to their movement towards the body</td>
<td>Vigorously contract your latissimus dorsi, while strongly trying to move your elbows towards your body</td>
<td></td>
</tr>
<tr>
<td>Pectoralis</td>
<td>Take up a seated position, with the palms of your hands in contact with each other</td>
<td>Vigorously contract your pectoral muscles, while trying to press strongly the palms of your hands against each other</td>
<td></td>
</tr>
<tr>
<td>Triceps</td>
<td>Take up a seated position, with your forearms and hands resting on armrests</td>
<td>Vigorously contract your triceps, while strongly trying to dig the palms of your hands into the armrests</td>
<td></td>
</tr>
<tr>
<td>Biceps</td>
<td>Take up a seated position, with your forearms resting on armrests and the palms of your hands imperatively facing upwards</td>
<td>Use a fixing system to avoid any movement of your elbows during stimulation</td>
<td>Vigorously contract your biceps, while trying strongly to move your arms towards your shoulders</td>
</tr>
<tr>
<td>Hand extensors</td>
<td>Take a seated position, with your forearms and the palms of your hands resting on armrests</td>
<td>Fix your hands solidly to the armrests</td>
<td>Vigorously contract your hand extensors muscles, while trying to raise your hands</td>
</tr>
<tr>
<td>Hand flexors</td>
<td>Take a seated position, with your forearms resting on armrests</td>
<td>Hold a crush-proof object in your hands so that your fingers are slightly bent</td>
<td>Strongly contract your hand flexors muscles, while strongly trying to grip the object that you were holding in your hands</td>
</tr>
</tbody>
</table>

### III. Use principles

Current international standards require that a warning be given concerning the application of electrodes to the thorax: increased risk of cardiac fibrillation.

### IV. DIRECTIONS FOR USE AND INSTRUCTIONS

#### 1. Foreword

Your Compex is equipped with multi-function keys. This means that, in addition to their primary function, these keys can be used for a whole range of other functions.

**“On/Off” key**

- **Primary function:** To switch the stimulator on and off
- **Other functions:**
  - To display the options menu (keep the key pressed for a few seconds when the Compex is switched on)
  - To confirm newly selected parameters/options
  - To return to a previous screen/menu
  - To select a momentary pause/interruption of stimulation

**“+”/”-“ keys of the 4 stimulation channels**

- **Primary function:** To set the stimulation energies during a session
- **Other functions:**
  - To select and set the operating options (language, light intensity, sound volume)
  - To select programmes and parameters for personalisation (category, programme, muscular group, warming-up sequence, level of work)
  - To move on to the following screen/menu
  - To start a programme

Little symbols, representing the various functions controlled by the five keys of the Compex, are displayed at the bottom of the LCD screen. These symbols are located precisely above the keys of the device so as to clearly establish a link between a key and its function.

#### Examples of symbols:

- **Off** To switch off the device
- **Select option** To select an option, a parameter, a programme, etc., from a selection list
- **Volume** To change sound volume
- **Options** To confirm a selection and move on to the next screen
- **Start** To start a programme
- **Pause** To momentarily interrupt stimulation (pause)
2. Connections

The electrical impulses generated by the Compex are transmitted to the muscles by self-adhesive electrodes.

The choice of the size, the connection and the correct positioning of the electrodes are essential factors for ensuring effective and comfortable stimulation. So they require particular care.

To do all this – and for information on the recommended stimulation positions – refer to the pictures and pictograms on the flaps at the end of the manual. The specific applications contained in chapter V also provide useful relevant information.

2.1 Connecting the electrodes and cables

Your Compex comes with twelve electrodes (four pairs of small electrodes and two pairs of large electrodes).

The same electrodes should not be used for more than about fifteen sessions. New electrodes can be easily obtained from your retailer.

The electrodes are connected to the stimulator through the four electrode cables supplied with your Compex, as shown in the following diagram (for one cable).

![Diagram of electrode connection](image)

2.1a Make sure you always "clip" two electrodes to each electrode cable: one electrode to the positive pole of the cable (red connector) and one electrode to the negative pole (black connector).

Note: It is important to place the electrodes correctly to the cable connectors; in order to do so, press strongly the connector to the electrode until you hear a double click.

2.1b The electrode cables themselves are connected to the stimulator through sockets on the back of the device (see point 2.1c below).

In addition to the four classic electrode cables, a fifth electrode cable is supplied with your Compex. This cable is equipped with the miS-SENSOR system giving access to all the mi (muscle intelligence) functions of your stimulator.

Note: Refer to sections 3, 4 and 5 of chapter III to learn about all the possibilities offered by mi technology.

The special cable of the miS-SENSOR System can be connected to any one of the four sockets of the stimulation channels located on the front of the device (see 2.1c) and two electrodes are “clipped” onto it in the same way as for a classic cable (see 2.1a and 2.1b).

2.2 Connecting the charger

The Compex has considerable operating autonomy, as it uses rechargeable batteries. However, you do need to recharge it from time to time. To do this, use the charger supplied with your device and connect it to the back of the device.

Note: For further information on how to do this, refer to section 9 of this chapter ("Electricity consumption and recharging").
3. Preliminary settings and check of the m2-sensor system

Before using the unit for the first time, you are strongly advised to take careful note of the counter-indications and safety measures detailed at the beginning of this manual (see chapter I: "Warnings"), as this powerful equipment is neither a toy nor a gadget!

For the greatest comfort, Compex offers you a number of preliminary setting options (operating language selection, light intensity (contrast) setting, and sound volume setting) as well as a check on the correct operation of the m2-sensor system.

To do this, display the options screen by pressing the “On/Off” switch on the left of the Compex and hold it down for a few seconds.

To select the language of your choice, press the “+”/“−” key of channel 1 (to go up or down), until the required language is displayed in white characters on a black background.

To set the contrast of the display, press the “+”/“−” key of channel 2 (“+” to increase the preferred percentage and “−” to reduce it).

To set the sound volume, press the “+”/“−” key of channel 3 (“+” to increase the preferred percentage and “−” to reduce it).

To check the correct operation of the m2-sensor system, the special electrode cable of the m2-sensor system must be already connected (to one of the four stimulation channels) before switching on the stimulator.

If this is so and everything is working correctly, an appropriate symbol should be displayed (at the bottom right of the screen, above channel 4). It should indicate the number of the channel to which the m2-sensor cable is connected and above it there should be an animated symbol representing an electrical signal ( ).

If the channel number and/or electrical signal symbol are not displayed or are displayed incorrectly (see description above), repeat the procedure. If the problem persists, contact your retailer.

To confirm the parameters selected at points 3a to 3c, press the “On/Off” switch. Your stimulator saves your options and switches itself off. It is now ready for use with the settings you selected.

4. Switching on

Before using the unit for the first time, you are strongly advised to take careful note of the counter-indications and safety measures detailed at the beginning of this manual (see chapter I: "Warnings"), as this powerful equipment is neither a toy nor a gadget!

To switch on your stimulator, briefly press the “On/Off” switch on the left of the Compex. A musical signal can be heard and a screen showing the different programme categories is displayed (see next section: "Selecting a programme category").

Note: If the settings of the LCD screen, the sound volume or the language in which the programme categories is displayed are not to your liking, refer to the previous section: "Preliminary settings and check of the m2-sensor system".

With m2 technology, the Compex can be used in two operating modes: the “classic” mode and the m2-action mode.

However, to access the programmes in the m2-action mode, the special electrode cable of the m2-sensor system must be already connected (to one of the four stimulation channels) so that the device can detect it and operate in this mode for the programmes that can use it. If this is not the case, the Compex will operate in the “classic” mode only.
5. Selecting a programme category

The programmes available on your Compex are divided into seven categories. All the programmes of these seven categories include a “classic” use mode for which voluntary participation is not necessary.

Certain categories also offer programmes that allow voluntary participation to be associated with the work done under muscular electrostimulation (Operating mode).

The programmes that can be used in the  mode can be accessed only if the special electrode cable of the system is already connected.

Before choosing a programme, you should pre-select the required category on the Compex start-up screen.

5a To select the desired category, press the “+”/”–” key (to go up or down) of channel 1 (see 5a'), until the desired category is displayed in white characters on a black background (see 5a").

5b The Compex contains seven categories and the entire list cannot be displayed in full on the LCD screen. A scrolling menu allows you to run through them.

To move between the various categories and to make sure you are always correctly positioned in the selection list, refer to the scroll bar at the right of the display.

A little cursor moves vertically along the bar depending on your position in the selection list.

5c Press the “On/Off” key to switch off the stimulator.

5d To confirm your choice and move on to the programme selection screen (see the next section: “Selecting a programme”), press the “+”/”–” key of channel 4.

6. Selecting a programme

The choice of a programme and, if necessary, the various stimulation parameters is decisive for ensuring the effectiveness of the desired training or treatment! In this regard, it is particularly useful to consult chapter V of this manual (“Programmes and specific applications”) which describes each of the programmes and presents detailed protocols for the most diverse requirements.

Refers to sections 3, 4 and 5 of chapter III which contain very useful information on stimulation in  mode.

Regardless of the category you selected in the previous step, a selection list containing a variable number of programmes appears on the screen.

6a To select the desired programme, press the “+”/”–” key of channel 1 (to go up or down), until the desired programme is displayed in white characters on a black background.

Dependent on the category selected, the complete list of the programmes it contains cannot be displayed on a single screen; in this case, a scrolling menu allows you to run through them.

To move between the various programmes of a category that includes more than five and to make sure you are always correctly positioned in the selection list, refer to the scroll bar at the right of the display.

A little cursor moves vertically along the bar depending on your position in the selection list.

5c Press the “On/Off” key to switch off the stimulator.

5d To confirm your choice and move on to the programme selection screen (see the next section: “Selecting a programme”), press the “+”/”–” key of channel 4.

Note: Depending on the programme, step 6d:

a) starts the stimulation session immediately: you selected a programme with pre-set parameters; you can go directly to section 8.2: “Setting stimulation energies”;

b) displays a parameter setting screen that prompts you to select a certain number of variables (muscular group, operating mode, warming-up, level of work) to personalise the next session (refer to the following section: “Personalising a programme”).
7. Personalising a programme

The programme personalisation screen is not available for all programmes!
Certain programmes have pre-set parameters and the steps described below are not necessary. These programmes start up immediately after selection (go directly to section 8: “During the stimulation session”).

Before really starting a stimulation session and for certain programmes, the Compex prompts you to select different working parameters.

The parameters you may have to define are:

- the muscular group to be stimulated
- the operating mode (ON or “classic”)
- the choice of a warming-up sequence
- the level of work

Note 1: Depending on the programmes, you may perhaps be asked to define only one or two of the parameters indicated above.

Note 2: To help you select the parameters described below, you should consult chapter V of this manual; the many specific applications list the different parameters to be selected depending on the desired training or treatment.

The programme personalisation screen appears once a programme needing manual definition of the parameters has been selected.

7.1 Muscular group and operating mode

7b′ If the special electrode cable of the m-SENSOR system is not connected to the stimulator, certain programmes require manual selection of the muscular group that you want to stimulate and a figurine is displayed above channel 1.

The “Abdomen and Low back” group is the default selection. To select your desired group, press the “+”/“–” key of channel 1 (to go up or down). The seven muscular groups are displayed in succession in black on the figurine:

- Abdomen and Low back
- Buttocks
- Thighs
- Legs and Feet
- Forearms and Hands
- Shoulders and Arms
- Thorax and Back

Current international standards require that a warning be given concerning the application of electrodes to the thorax: increased risk of cardiac fibrillation.

7b′′ When the device is connected to the m-SENSOR cable – and if the programme you have selected offers the feature ON – you have the possibility of selecting your workout in the “classic” mode or in the m-SENSOR mode.

By default, your Compex device is set to work in the “classic” mode (OFF). If you would like to select the m-SENSOR feature (ON), press the “+”/“–” key of channel 1; to return back to the “classic” version of the programme, press again.

The selected programme will run in the “classic” mode

Regardless of the selected workout mode, muscle group selection will be done automatically. The programme will start with a short sequence known as m-scan, that automatically measures your neuromuscular characteristics (see section 8.1: “m-scan preliminary test” and chapter III, section 4.1).

Before starting the programme (and thus the m-scan test), proceed, if necessary, to regulating other parameters as per the instructions described later in this chapter.

7b′′′ When the device is connected to the m-SENSOR cable – and if the programme you have selected does not offer the feature m-SENSOR – the selection area is not available (the symbol above channel 1 is solid and the corresponding zone above the symbol is empty).

As always, if the selection of a muscle group is appropriate, the programme will start with a short sequence known as m-scan, that automatically measures your neuromuscular characteristics (see section 8.1: “m-scan preliminary test” and chapter III, section 4.1).

Before starting the programme (and thus the m-scan test), proceed, if necessary, to regulating other parameters as per the instructions described later in this chapter.
8. During the stimulation session

In general, the operating principles of the Compex and the screens it displays during stimulation are applicable to a session carried out in the “classic” mode as well as in the \( \text{mi-} \text{ACTION} \) mode. However, the latter type of work offers certain additional functions that will be described case by case. You should be aware, in particular, that, during a \( \text{mi-} \text{ACTION} \) type session, information may be displayed from time to time on the screen to confirm that the device is working in this mode.

Refer to sections 3, 4, and 5 of chapter III which contain very useful information on stimulation in \( \text{mi} \) mode.

8.1 \( \text{mi-SCAN} \) preliminary test

The \( \text{mi-SCAN} \) test is carried out only if the special electrode cable of the \( \text{mi-SENSOR} \) system is already connected to the stimulator?

To avoid any disturbance, you must remain completely still and be perfectly relaxed throughout the entire test!

If the \( \text{mi-SENSOR} \) system is active, the \( \text{mi-SCAN} \) test starts immediately after the selection and personalisation of a programme for which the choice of a muscular group is justified. Using \( \text{mi} \) technology, this choice is made automatically by the Compex, through test measurements of individual neuromuscular specificities and the excitability characteristics of the muscle to be stimulated.

Note: To allow this short sequence to be carried out, the special electrode cable of the \( \text{mi-SENSOR} \) system must be connected and the electrodes must be correctly positioned on the relevant muscular group.

8.1a The small symbol \( \text{mi} \) is displayed above the channel to which the special cable of the \( \text{mi-SENSOR} \) system is connected, indicating that the system is active (in the above example, the \( \text{mi-SENSOR} \) cable is connected to channel 1).

8.1b The “+”/”–” keys of the four stimulation channels are inactive. It is not possible to influence the stimulation energies for the entire duration of the test. However, the numerical representation of the stimulation energy of the channel to which the \( \text{mi-SENSOR} \) cable is connected varies automatically during the test to satisfy the needs of the various measurements taking place.
8.1c For the entire duration of the test, a scroll bar vertically scans the figurine symbolising the function. The duration of the test varies depending on the characteristics of the muscular group and the person being tested. At most it lasts 21 seconds.

8.1d The test can be stopped by pressing the “On/Off” key (symbol). You can then either restart the entire test by pressing the key of a stimulation channel, or press the “On/Off” key a second time (after the stop, the symbol above this key becomes to allow return to the previous screen; see section 6: “Selecting a programme”).

Note: Once the test is completed, you automatically access the standard programme start screen that prompts you to set the stimulation energies (see following section: “Setting stimulation energies”).

8.2 Setting stimulation energies

When the programme starts and, if necessary, after the test, the Compex prompts you to increase the stimulation energies, a key factor for the effectiveness of the stimulation.

8.2a The Compex “bleeps” and the symbols of the four channels flash, changing from “+” to “000”: the four channels are at 0 energy. You must increase the stimulation energies so that the stimulation can start. To do this, press the “+” of the keys of the relevant channels until the required setting is reached.

Note: The small symbol is displayed for the relevant channel, if the cable is connected.

8.2b Remaining time in minutes and seconds.

8.2c The screens represented above are the screens of a programme including a warming-up sequence. If your programme does not include a warming-up sequence before the actual stimulation, it starts immediately with the work sequence and a small animated symbol (symbolising the category to which your programme belongs) is displayed in the place of the animated rising convection symbol shown above (see the symbols at point 8.3b).

8.2d Session progression scale. For details on how it works, see the following section (“Programme progression”).

8.2e By pressing the “On/Off” key, you can return to the previous screen (see the section 6: “Selecting a programme”).

8.3 Programme progression

Stimulation does not really start until the stimulation energies have been increased. The screens that are displayed during stimulation allow you to observe the progression of the stimulation session. These screens may differ from one programme to another and from one work mode to another. The examples reproduced below are sufficient, however, for you to understand the main general rules.

8.3a Remaining time (in minutes and seconds) before the end of the programme.

8.3b A small animated symbol indicating the category to which the programme belongs

8.3b’ Vascular category

8.3b” Sport category

Animated symbols representing categories:

Sport category
Fitness category
Aesthetic category
Vascular category
Massage category
Pain category
Rehabilitation category
8.4 Adjusting stimulation energies

During the session, the Compex “bleeps” and some symbols start to flash above the active channels (over the energy indications): the Compex is prompting you to increase the stimulation energy levels. If you cannot support an increase of the stimulation energies, just ignore this message.

8.4b You can interrupt the programme momentarily by pressing the “On/Off” key. If you wish to restart the session, simply press one of the “+”/”-” keys of the channel.

Caution: After an interruption, the stimulation restarts at 80% of the stimulation energy set before the "STOP".

8.5 End of programme

At the end of the session, you hear a musical signal, and a small flag is displayed.

It is then only necessary to switch off the stimulator by pressing the “On/Off” key (off).
9. Electricity consumption and recharging

Never recharge the stimulator with cables and electrodes still connected to it and in contact with the user and never recharge the batteries with a charger different from the one supplied with the stimulator.

The Compex runs on rechargeable batteries. The discharge time (at least 6 hours) depends on the programmes and stimulation energies used.

9.1 Electricity consumption

The symbol of a small battery indicates the charge level of the batteries.

The battery symbol works like a petrol gauge. When you reach “reserve”, two reference marks on the small battery symbol flash. Stop the session and recharge your stimulator. If the whole battery flashes, you must recharge the Compex urgently (see below).

9.2 Recharging

To recharge the Compex, first disconnect the electrode cables from the device, then plug the charger in a socket and lastly connect the stimulator to the charger: the charge menu illustrated below appears automatically.

9.2a The Compex has been charging for 3 minutes and 8 seconds (a full charge may take more than one and a half hour). The large central battery is animated.

9.2b Charging is in progress and the small battery symbol is not completely full.

9.2c When charging is completed, total charge duration (here, 1 hour, 3 minutes and 10 seconds) flashes and the small battery is completely full. The Compex switches off automatically as soon as you disconnect the charger.

10. Problems and solutions

10.1 Electrode fault

The Compex “bleeps” and alternatively displays the symbol of a couple of electrodes and an arrow pointing to the channel where a problem has been detected. Above, the stimulator has detected an electrode fault on channel 2. This message may mean that:

1) there is no electrode connected to this channel;
2) the electrodes are too old and/or the contact is poor: try using other electrodes;
3) the electrode cable is defective: check it using another cable.

10.2 Charging problems

10.2a Two reference marks on the small battery symbol flash: The batteries are losing their charge. Interrupt the session and recharge the device (see section 9.2: “Recharging”).

10.2b The small battery symbol is empty and flashes: The charge level of the batteries is very low. It is essential to recharge the stimulator if you do not want it suddenly to stop working (see section 9.2: “Recharging”).

10.2c The symbol normally displayed above the “+”/“-” key of channel 4 has disappeared: The batteries are completely flat. It is no longer possible to use the device. Recharge it immediately (see section 9.2: “Recharging”).
1.1 Introduction

Neglected for many years, muscle preparation has today become indispensable for the competitive athlete. In this respect, muscular electrostimulation is a complementary training technique widely used by an increasing number of athletes aiming to improve their level of performance. Increasing the maximum strength of a muscle, developing muscular volume, increasing the explosive strength of muscles or improving the capacity of muscle fibres to sustain effort over long periods of time are objectives that differ according to the sporting discipline being practised. Ensuring optimal muscle preparation immediately before competition, combining electrostimulation with voluntary muscle training, optimising the effects of training techniques such as stretching, reproducing the muscular stress resulting from “plyometric” training or imposing a “restoration” activity on muscles is easily accessible today thanks to the high specificity of the new programmes offered by your Compex. The programmes of the Compex Sport category are designed to improve the muscle qualities of competitive athletes training seriously on a voluntary basis for at least five hours a week.

The protocols that follow are given by way of example only. They provide a better understanding of how electrostimulation sessions can be combined with voluntary training.

Use of programmes of the Sport category is not suitable for atrophied muscles that have suffered any kind of pathological process. For such muscles, it is essential to use programmes of the Rehabilitation category (see this section further on in this chapter).
## 1.2 Table of the Sport programmes

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Effects</th>
<th>Uses</th>
<th>Placement of electrodes</th>
<th>Stimulation energies</th>
<th>Mi-Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potentiation</td>
<td>Increased speed of contraction and power gain</td>
<td>For optimum muscle preparation immediately before competition</td>
<td>Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23</td>
<td>Maximum tolerable energy</td>
<td>No</td>
</tr>
<tr>
<td>Potentiation</td>
<td>Less nervous effort to attain maximum strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endurance</td>
<td>Improved absorption of oxygen by the stimulated muscles</td>
<td>For athletes who wish to improve their performance in long-duration sporting events</td>
<td>Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23</td>
<td>Maximum tolerable energy</td>
<td>No</td>
</tr>
<tr>
<td>Resistance</td>
<td>Improved lactic capacity of muscles</td>
<td>For competitive athletes who wish to increase their capacity to sustain intense and prolonged effort</td>
<td>Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td>Resistance</td>
<td>Improved performance for conscious resistance sports</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strength</td>
<td>Increased maximum strength</td>
<td>For competitive athletes practising a discipline that requires strength and speed</td>
<td>Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td>Strength</td>
<td>Increased rate of muscular contraction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive strength</td>
<td>Increases the speed at which the level of strength is attained</td>
<td>For athletes practising a discipline in which explosive strength is an important factor in performance</td>
<td>Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td>Explosive strength</td>
<td>Improved efficiency of explosive actions (jumping, sprinting, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Programmes**

- **Fartlek**
  - Training and preparation of muscles for all kinds of muscular work (endurance, resistance, strength, explosive strength) through different working sequences
  - At the beginning of the season to "reset" the muscles after a rest period and before more intensive and specific training
  - During the season for those who do not have any preferences for a single kind of performance and prefer to exercise their muscles with different work-out methods
  - Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23
  - The energy must be adapted to weight size during the first five contractions of the programme
  - Maximum tolerable energy
  - Yes

- **Concentric**
  - Improved muscle strength
  - Specific work regime combining electrostimulation with concentric muscle training with weights
  - Combination of voluntary dynamic concentric contractions with weights and electrically induced contractions
  - Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23
  - The energy must be adapted to weight size during the first five contractions of the programme
  - Yes

- **Eccentric**
  - Improved muscle strength
  - Specific work regime combining electrostimulation with eccentric muscle training with weights
  - Combination of voluntary dynamic eccentric contractions with weights and electrically induced contractions
  - Depending on the muscle being stimulated, follow the recommended placement See pictures n° 1-23
  - The energy must be adapted to weight size during the first five contractions of the programme
  - Yes
<table>
<thead>
<tr>
<th>Programmes</th>
<th>Effects</th>
<th>Uses</th>
<th>Placement of electrodes</th>
<th>Stimulation energies</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plyometry</td>
<td>Improved strength/speed</td>
<td>For athletes who, on account of injury, must interrupt or limit their voluntary plyometric training sessions</td>
<td>Depending on the muscle being stimulated, follow the recommended placement</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td>Hypertrophy</td>
<td>Increased muscle volume</td>
<td>For body-building enthusiasts and users who want to increase their muscle mass</td>
<td>Depending on the muscle being stimulated, follow the recommended placement</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td>Stretching</td>
<td>To optimise the effects of the voluntary technique of stretching, by means of a reduction of muscular tonus obtained by specific activation of the antagonist of the stretched muscle (reciprocal inhibition reflex)</td>
<td>For all athletes who wish to maintain or improve their muscular elasticity</td>
<td>You have to stimulate the muscle which is antagonist of the stretched muscle Some examples: - Stretching of the calf: see picture n° 3 - Stretching of the hamstrings: see picture n° 7 - Stretching of the quadriceps: see picture n° 5 - Stretching of the triceps: see picture n° 20</td>
<td>Increase progressively the intensities to obtain a tension that is clearly perceived</td>
<td>No</td>
</tr>
<tr>
<td>Active recovery</td>
<td>Marked increase in blood flow</td>
<td>To improve and accelerate the muscle recovery after an intensive exercise</td>
<td>Depending on the muscle being stimulated, follow the recommended placement</td>
<td>Increase the stimulation energies progressively until marked muscle twitches are obtained</td>
<td>Yes</td>
</tr>
<tr>
<td>Regeneration</td>
<td>Analgesic effect through the release of endorphins</td>
<td>To be used the day after competition as recovery training or as a complement to this type of training, the intensity of which can then be reduced</td>
<td>Depending on the muscle being stimulated, follow the recommended placement</td>
<td>Increase the stimulation energies progressively until marked muscle twitches are obtained</td>
<td>No</td>
</tr>
</tbody>
</table>
1.3 Specific applications of the Sport programmes

Preparation for a cyclist training three times a week who wishes to improve endurance performance

Effort expended over a long period of time makes demands on the aerobic metabolism, for which the decisive factor is the quantity of oxygen consumed by the muscles. To progress in endurance, it is therefore necessary to increase as much as possible the supply of oxygen to the muscles stimulated by this type of effort. Because oxygen is conveyed by the blood, it is essential to have an efficient cardiovascular system, due to voluntary training under certain conditions. However, a muscle capacity to consume the oxygen it receives (oxydative capacity) can also be improved by following a specific work regime.

The Endurance programme of the Sport category leads to a significant improvement in the consumption of oxygen by muscles. Combining this programme with the Capillarization programme, which develops the network of intramuscular capillaries, is particularly beneficial and allows endurance athletes to improve their performance levels.

Recommended programmes
Endurance + Capillarization
To determine the level of the Endurance programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

Muscular group
Without mi-SENSOR
With mi-SENSOR

Duration of treatment
8 weeks

Procedure of treatment
Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>1 session Endurance on thighs</td>
<td>Cycle training 1h30 (moderate speed), then 1 session Capillarization on thighs</td>
<td>1 session Endurance on thighs</td>
<td>Rest</td>
<td>Cycle training 60' (moderate speed), then 1 session Endurance on thighs</td>
<td>Cycling outing 2h30 (moderate speed), then 1 session Capillarization on thighs</td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body
See picture n° 8

Preparation for a cyclist training three times a week who wishes to improve his power

Developing the strength of the thigh muscles is always beneficial for the competitive cyclist. Certain forms of training on the bicycle (hill work) can make a contribution in this respect. However, results will be more spectacular if additional training using Compex muscular stimulation is undertaken at the same time.

The special regime of muscle contractions of the Strength programme and the large amount of work to which the muscles are subjected allow a significant increase of the strength of the thigh muscles.

Moreover, the Active recovery programme, carried out within three hours of the most intensive training sessions, encourages muscular recuperation and makes it possible to follow on with qualitative training under optimum conditions.

The mi-action mode is particularly suitable for the Strength programme.

Recommended programmes
Strength + Active recovery
To determine the level of the Strength programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

Muscular group
Without mi-SENSOR
With mi-SENSOR

Duration of treatment
8 weeks

Procedure of treatment
Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>1 session Strength on thighs</td>
<td>Cycle training 45' (moderate speed), then 5-10 times on a 500-700 m hill (rapidly) Recovery during descent Inactivity 15-20', then 1 session Active recovery on thighs</td>
<td>1 session Strength on thighs</td>
<td>Rest</td>
<td>Cycle training 60' (moderate speed), then 1 session Strength on thighs</td>
<td>Cycling outing 2h30-3h (moderate speed) Muscle strengthening on hills (use of a high gear ratio remaining seated), then 1 session Active recovery on thighs</td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body
See picture n° 8
Preparation for a runner training three times a week who wishes to progress in endurance
(half-marathon, marathon)

Running as many miles as possible is essential in order to improve performance in endurance events. However, the strain on tendons and joints this type of training causes is today universally recognised. Integrating Compex electrostimulation into the training of the long-distance runner offers an excellent alternative that can help to overcome this problem. The Endurance programme, which improves the muscles’ ability to absorb oxygen, and the Capillarization programme, which develops the capillaries in the muscles, allow greater endurance to be achieved while limiting the weekly mileage and therefore the risk of injury.

Recommended programmes
- Endurance + Capillarization

To determine the level of the Endurance programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

Muscular group
- Without mi-SENSOR
- With mi-SENSOR

Duration of treatment
- 8 weeks

Procedure of treatment
Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
</tr>
</thead>
</table>
| Rest         | 1 session     | Voluntary training: warm up 20’, then 1-2 series of 6 x [30” fast / 30” slow]
|              | 1 session     | Slow jogging 10’ at the end of the session, then 1 session Capillarization on thighs | Endurance on thighs |
|              |               | 1 session  | Voluntary training: warm up 20’, then 1-2 series of 6 x [30” fast / 30” slow]
|              |               | Endurance on thighs | Voluntary training: warm up 20’, then 1-2 series of 6 x [30” fast / 30” slow]

Placement of electrodes and position of the body
See picture n° 8

Preparation for a sportsman who wishes to improve the strength of his pectoralis major muscles

During the preparatory pre-season period, it is essential not to neglect specific muscular preparation. In most kinds of sports and physical activities, the qualities of speed and strength make all the difference.

When the discipline practised puts great stress on the upper limbs and, in particular, on the shoulders, the pectoralis major (together with the latissimus dorsi muscle) always has priority and should not be neglected in physical preparation.

The Strength programme involves a specific work sequence that allows the user to develop the muscular qualities of the fast-conducting fibres (increase of maximum strength and speed of contraction).

Recommended programme
- Strength

Muscular group
- Without mi-SENSOR
- With mi-SENSOR

Duration of treatment
- 3 to 6 weeks per cycle (minimum 3 weeks)

Start from level 1 and do not skip any levels between cycles.

Procedure of treatment
- Cycle n° 1: 3-4 sessions Strength level 1 a week
- Cycle n° 2: 3-4 sessions Strength level 2 a week
- Cycle n° 3: 3-4 sessions Strength level 3 a week
- Cycle n° 4: 3-4 sessions Strength level 4 a week
- Cycle n° 5: 3-4 sessions Strength level 5 a week

Placement of electrodes and position of the body
See picture n° 43

Current international standards require that a warning be given concerning the application of electrodes to the thorax: increased risk of cardiac fibrillation.
Pre-season preparation for a team sport

(football, rugby, handball, volleyball, etc.)

Planning example to develop the strength of the quadriceps. Depending on the sport being practised, a different muscle group may be chosen (to determine this muscular group, refer to the training planner on the CD-ROM).

During the preparatory pre-season period for team sports, it is essential not to neglect specific muscle preparation. In most team sports, the qualities of speed and strength make all the difference. Stimulation of the quadriceps (or a different key muscle depending on the sport concerned) by means of the Compex Strength programme will result in increased speed of contraction and muscular strength. The practical benefits will be obvious: improved speed off the mark and during movement, jumping, shooting power, etc.

An Active recovery session, carried out after the most intensive training, accelerates muscular recuperation and reduces fatigue that has built up during the season when the workload is high.

Recommended programmes

Strength + Active recovery

To determine the level of the Strength programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

Muscular group

Without Mi-sensor

With Mi-sensor

Duration of treatment

8 weeks

Procedure of treatment

Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>1 session Strength on latissimus dorsi</td>
<td>Swimming training 20-30’ (different styles), then 5-10 times 100 m with pull-bay Recovery 100 m backstroke Inactivity 15’, then 1 session Active recovery on latissimus dorsi</td>
<td>Swimming training 1h including some technical work, then 1 session Strength on latissimus dorsi</td>
<td>Rest</td>
<td>Swimming training 20-30’ (different styles), then 5-10 times 100 m with paddles Recovery 100 m backstroke Inactivity 15’, then 1 session Active recovery on latissimus dorsi</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body

See picture n° 18

Preparation for a swimmer training three times a week who wishes to improve his swimming power

In swimming, developing the propulsive force of the upper limbs is an important factor in improving performance. Certain forms of voluntary training practised in the water can contribute to this. However, integrating Compex muscular stimulation into the voluntary training programme makes it possible to achieve far better results. The special muscular contraction regime of the Strength programme and the large amount of work to which muscles are subjected will allow you to increase significantly the strength of the latissimus dorsi, key muscles for the swimmer.

Moreover, the Active recovery programme, carried out within three hours of the most intensive training, encourages muscular recuperation and makes it possible to follow on with qualitative training under optimum conditions.

The Mi-action mode is particularly suitable for the Strength programme.

Recommended programmes

Strength + Active recovery

To determine the level of the Strength programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

Muscular group

Without Mi-sensor

With Mi-sensor

Duration of treatment

8 weeks

Procedure of treatment

Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>1 session Strength on latissimus dorsi</td>
<td>Swimming training 20-30’ (different styles), then 5-10 times 100 m with pull-bay Recovery 100 m backstroke Inactivity 15’, then 1 session Active recovery on latissimus dorsi</td>
<td>Swimming training 1h including some technical work, then 1 session Strength on latissimus dorsi</td>
<td>Rest</td>
<td>Swimming training 20-30’ (different styles), then 5-10 times 100 m with paddles Recovery 100 m backstroke Inactivity 15’, then 1 session Active recovery on latissimus dorsi</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body

See picture n° 18
Maintaining results achieved during preparation for team sports during the competitive period (football, rugby, handball, volleyball, etc.)

This example concerns only athletes who have completed a full cycle of training by electrostimulation (at least 6 weeks) as part of their pre-season preparation. The weekly session of stimulation with the Strength programme should be carried out on the same muscle groups as those stimulated during the preparation period (in our example, the quadriceps).

During the season, when matches are played regularly, care should be taken not to overtrain the specific musculature. On the other hand, nor should the benefits of preparation be lost by suspending stimulation training for too long a period. During this period of competition, muscle qualities should be maintained by means of one weekly session of stimulation carried out using the Strength programme. It is also essential to leave a sufficiently long interval between this single weekly stimulation session and the day of the competition (3 days minimum).

The Active recovery programme, which must be used during the first three hours after the match, as well as after each session of intensive training, restores muscle equilibrium more quickly.

**Recommended programmes**

**Strength + Active recovery**

To determine the level of the Strength programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

**Muscular group**

- Without mi-SENSOR
- With mi-SENSOR

**Duration of treatment**

During the sport season

**Procedure of treatment**

Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>Collective training, then 1 session <strong>Active recovery</strong> on quadriceps (if training is intensive)</td>
<td>Collective training, then 1 session <strong>Active recovery</strong> on quadriceps (if training is intensive)</td>
<td>Rest</td>
<td>Match, then 1 session <strong>Active recovery</strong> on quadriceps (within the 3 hours that follow the competition)</td>
<td>Rest</td>
<td></td>
</tr>
</tbody>
</table>

**Placement of electrodes and position of the body**

See picture n° 8

Pre-season preparation of lactic capacity for a resistance sport, with three active training sessions per week (800 metres, track cycling, etc.)

Planning example to develop the lactic capacity (resistance) of the quadriceps. Depending on the sport being practised, a different muscle group may be chosen (to determine this muscular group, refer to the training planner on the CD-ROM).

During pre-season preparation for sports that make great demands on the lactic anaerobic system (intense effort sustained over as long as possible), it is essential not to neglect specific muscle preparation. Stimulation of the quadriceps (or a different key muscle group depending on the discipline practised) by means of the Resistance programme results in improved anaerobic power, as well as greater muscle tolerance to high concentrations of lactates. The practical benefits are evident: improved performance thanks to better muscular resistance to fatigue for exercises of the lactic anaerobic type.

In order to optimise the effects of this preparation, you are advised to supplement it with Capillarization sessions, carried out during the week leading up to the competition (see chapter V: “Programmes and specific applications”, “Vascular category”, “Achieving peak form before competition for resistance sports (eg: 800 metres, 1500 metres, etc.)”).

An Active recovery session is recommended after the most intensive training. It accelerates the rate of muscle recovery and reduces fatigue during the period of the season when the amount of training is high.

**Recommended programmes**

**Resistance + Active recovery**

To determine the level of the Resistance programme according to your personal characteristics, refer to the training planner available on the CD-ROM.

**Muscular group**

- Without mi-SENSOR
- With mi-SENSOR

**Duration of treatment**

6-8 weeks
Preparation for a sportsman who wishes to improve the muscular qualities of his abdominal muscles

Rarely considered priority muscles for performance, the abdominal muscles nevertheless play an essential role for the effectiveness of body movements in most physical and sports activities. The improvement of the muscular qualities of the abdominals is all too often neglected by many competitive athletes, at times because of lack of time, but also because of the often tedious nature (or considered to be such) of the voluntary exercises required.

The Resistance programme includes a work routine that is perfectly adapted to the physiological specificity of the muscular fibres that support the abdominal muscles.

The mi-action mode is particularly suitable for the Resistance programme.

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Without mi-sensor</th>
<th>With mi-sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure of treatment</td>
<td>Cycle n° 1: 3 sessions Resistance level 1 a week</td>
<td>Cycle n° 2: 2-3 sessions Resistance level 2 a week</td>
</tr>
<tr>
<td></td>
<td>Cycle n° 3: 2-3 sessions Resistance level 3 a week</td>
<td>Cycle n° 4: 2-3 sessions Resistance level 4 a week</td>
</tr>
<tr>
<td></td>
<td>Cycle n° 5: 2-3 sessions Resistance level 5 a week</td>
<td></td>
</tr>
</tbody>
</table>

| Placement of electrodes and position of the body | See pictures n° 10, n° 11 and n° 44 |

<table>
<thead>
<tr>
<th>Procedure of treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
</tr>
<tr>
<td>1 session Resistance on quadriceps</td>
</tr>
</tbody>
</table>
Preparation for a sportsman who wishes to improve the efficiency of the muscular reinforcement of his abdomen

The low back and abdominal muscles are essential for ensuring the satisfactory support of the low back vertebral region (lumbar spinal column). This applies both to all kinds of everyday activities and to the practice of sports, which are always very stressful for the low back region. The effective support of the low back region also guarantees a high level of mechanical efficiency in the transmission of forces between the lower and upper parts of the body, thus allowing the optimisation of body movement efficiency and, consequently, performance.

The Resistance programme significantly increases the efficiency of the abdominal and low back muscles. It thus considerably improves the support of the low back region, with a positive effect on performance. It also helps to prevent painful episodes affecting the low back region (lumbago), which are very frequent after intensive physical activities.

The mi-Action mode is particularly suitable for the Resistance programme.

Recommended programme

Muscular group

Without mi-SENSOR With mi-SENSOR

Duration of treatment

3 to 6 weeks per cycle (minimum 3 weeks)
Start from level 1 and do not skip any levels between cycles

Procedure of treatment

| Cycle n° 1: | Resistance level 1 a week |
| Cycle n° 2: | 2-3 sessions Resistance level 2 a week |
| Cycle n° 3: | 2-3 sessions Resistance level 3 a week |
| Cycle n° 4: | 2-3 sessions Resistance level 4 a week |
| Cycle n° 5: | 2-3 sessions Resistance level 5 a week |

Placement of electrodes

Use the 4 stimulation channels as follows:

Channels 1 and 2: see picture n° 34; position the mi-SENSOR system as shown in this picture

Channels 3 and 4: see picture n° 12

Position of the body

Sitting, your back should not rest against a chair back

Pre-season preparation of the explosive strength of the quadriceps for an athlete training three times a week

(long jump or high jump, sprinting, etc.)

For other disciplines the choice of muscles to be stimulated may be different (to determine this muscular group, refer to the training planner on the CD-ROM).

For all sports where the essential performance factor is explosive muscle strength, specific muscle preparation is the main factor in pre-season preparation. The explosive strength of muscles may be defined as the capacity of a muscle to attain a high level of maximum strength as quickly as possible. To develop this quality, voluntary training relies on tiring muscle training sessions that often include the risk of injury, since they are necessarily carried out using heavy weights.

Integrating the use of the Explosive strength programme lightens the muscle training sessions while at the same time offering greater benefits and more time for technical work.

The mi-Action mode is particularly suitable for the Explosive strength programme.

Recommended programme

Muscular group

Without mi-SENSOR With mi-SENSOR

Duration of treatment

6-8 weeks

Procedure of treatment

Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 session Explosive strength on quadriceps</td>
<td>Voluntary training in stadium</td>
<td>1 session Explosive strength on quadriceps</td>
<td>Voluntary training including technical work jumping pit</td>
<td>1 session Explosive strength on quadriceps</td>
<td>Rest</td>
<td>Voluntary training in stadium, followed by 1 session Explosive strength on quadriceps</td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body

See picture n° 8
Use of **Potentiation** programme to optimise the effects of explosive strength (*sprints, jumps, squash, football, basketball, etc.*) immediately before specific training or competition

The **Potentiation** programme should be used on the key muscles involved in the discipline practised. In this example, the key muscles of the sprinter (quadriceps) will be stimulated. For other disciplines the choice of muscles to be stimulated may be different (refer if necessary to the training planner in the CD-ROM).

The **Potentiation** programme must not take the place of the voluntary warm-up usually performed before the competition. Activation of the cardiovascular system, short accelerations becoming progressively faster, practice starts and stretching will therefore be carried out by the athlete according to his normal routine. A **Potentiation** session of short duration (approximately 3 minutes) will be applied on the sprinter’s quadriceps immediately before the start of his race (or races, in the event of qualifying events). The specific muscular activation of the **Potentiation** programme allows the maximum level of performance to be attained in the very first seconds of the race.

**Recommended programme**

**Muscular group**

**Potentiation**

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Without mio-Sensor</th>
<th>With mio-SENSOR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration of treatment</strong></td>
<td>1 session</td>
<td></td>
</tr>
<tr>
<td><strong>Procedure of treatment</strong></td>
<td>Always carry out the session as soon as possible before the start and at all events not more than 10 minutes before the start. After 10 minutes, the phenomenon of potentiation of muscle fibres quickly wears off.</td>
<td></td>
</tr>
<tr>
<td><strong>Placement of electrodes and position of the body</strong></td>
<td>See picture n° 8</td>
<td></td>
</tr>
</tbody>
</table>

**Muscle volume for a body-builder**

Despite repeated efforts during their voluntary training, many body-builders encounter difficulties in developing certain muscle groups. The specific stimulation imposed on muscles by the **Hypertrophy** programme significantly increases the volume of the stimulated muscles. In addition, for a similar session time, the Compex **Hypertrophy** programme provides a greater volume gain than voluntary training.

The additional workload imposed by this stimulation programme on muscles not sufficiently receptive to traditional training provides a solution for the harmonious development of all muscle groups without recalcitrant areas.

To obtain optimum progress, you are advised:

1) to precede the **Hypertrophy** sessions with short voluntary training focused on strength; for example 3 series of 5 repetitions at 90% of maximum force;

2) to carry out a **Capillarization** session directly after the **Hypertrophy** session.
Planning the weekly sessions

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>Voluntary training focused on the muscles of the lower limbs, followed by active work on the biceps: 3 series of 5 repetitions at 90% of Fmax., then 1 session Hypertrophy. followed by 1 session Capillarization on biceps</td>
<td>Rest</td>
<td>Voluntary training focused on the muscles of the trunk, followed by active work on the biceps: 3 series of 5 repetitions at 90% of Fmax., then 1 session Hypertrophy. followed by 1 session Capillarization on biceps</td>
<td>Rest</td>
<td>Voluntary training focused on the muscles of the upper limbs, followed by active work on the biceps: 3 series of 5 repetitions at 90% of Fmax., then 1 session Hypertrophy. followed by 1 session Capillarization on biceps</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Muscle volume for a body-builder training three times a week

In this example, we assume that the body-builder wants to work on his biceps, which he considers to be his weak point. It is of course possible to stimulate other muscles as well. Also, the Hypertrophy programme can be used on several muscle groups at the same time, that is to say the same stimulation routine can be applied to both biceps and calves, for instance.

To obtain optimum progress, you are advised to carry out a Capillarization session directly after the Hypertrophy session.

The Mi-action mode is particularly suitable for the Hypertrophy programme.

Recommended programmes

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Hypertrophy + Capillarization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without Mi-sensor</td>
<td>With Mi-sensor</td>
</tr>
</tbody>
</table>

Duration of treatment

8 weeks

Procedure of treatment

<table>
<thead>
<tr>
<th>Week 1:</th>
<th>3 sessions Hypertrophy level 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks 2-3:</td>
<td>3 sessions Hypertrophy level 2 a week</td>
</tr>
<tr>
<td>Weeks 4-5:</td>
<td>3 sessions Hypertrophy level 3 a week</td>
</tr>
<tr>
<td>Weeks 6-8:</td>
<td>3 sessions Hypertrophy level 4 a week</td>
</tr>
</tbody>
</table>

Maintenance

Week 9 and following weeks: 1 session Hypertrophy level 4 a week

Placement of electrodes and position of the body

See picture n° 20
**Muscle volume for a body-builder training six times a week minimum**

In this example, we assume that the body-builder wants to work on his calves that he considers to be his weak point. It is of course possible to stimulate other muscles as well. Also, the Hypertrophy programme can be used on several muscle groups at the same time, that is to say the same stimulation procedure can be applied to both calves and biceps, for instance.

To obtain optimum progress, you are advised to carry out a Capillarization session directly after the Hypertrophy session.

The **mi-action** mode is particularly suitable for the Hypertrophy programme.

**Recommended programmes**

**Muscular group**

Hypertrophy + Capillarization

<table>
<thead>
<tr>
<th>Without mi-sensor</th>
<th>With mi-sensor</th>
</tr>
</thead>
</table>

**Duration of treatment**

12 weeks

**Procedure of treatment**

<table>
<thead>
<tr>
<th>Week</th>
<th>Sessions</th>
<th>Hypertrophy level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>2-3</td>
<td>5</td>
<td>2 a week</td>
</tr>
<tr>
<td>4-5</td>
<td>5</td>
<td>3 a week</td>
</tr>
<tr>
<td>6-8</td>
<td>5</td>
<td>4 a week</td>
</tr>
<tr>
<td>9-12</td>
<td>5</td>
<td>5 a week</td>
</tr>
</tbody>
</table>

**Maintenance**

**Placement of electrodes and position of the body**

See picture n° 4
Preparation for an athlete wishing to combine active dynamic concentric work on the quadriceps with muscular electrostimulation

For all electrostimulation programmes that cause tetanic contractions of the stimulated muscles, it is generally recommended to work isometrically, in order to limit shortening of the muscle during its contraction and thus avoid the onset of an unpleasant sensation of cramp. Dynamic work combined with electrostimulation is however possible, provided the weights used are significant. The Concentric programme is intended to be combined simultaneously with voluntary dynamic concentric contractions (contraction during which the length of the agonist muscle reduces) with additional weights.

It is a strength training programme that combines active work and electrostimulation.

The parameters have been chosen to allow concentric training using weights that increase in size as the user progresses through the levels.

**Level 1** is intended to be used for concentric contractions with a weight representing 60 to 70% of the maximal strength (Fmax.).

**Level 2** is intended to be used for concentric contractions with a weight representing 71 to 80% of the maximal strength (Fmax.).

**Level 3** is intended to be used for concentric contractions with a weight representing 81 to 90% of the maximal strength (Fmax.).

**Level 4** is intended to be used for concentric contractions with a weight representing 91 to 95% of the maximal strength (Fmax.).

**Level 5** is intended to be used for concentric contractions with a weight representing 96 to 99% of the maximal strength (Fmax.).

This programme is intended for sportspersons who regularly practise voluntary muscle trainings and are already familiar with electrostimulation muscle training; this means for sportspersons who have already completed at least one full isometric stimulation cycle with a conventional Compex programme on the muscle group which is going to be stimulated with the Concentric programme.

The Mi-Action mode is particularly suitable for the Concentric programme.

---

**Recommended programme**

**Concentric**

**Muscular group**

<table>
<thead>
<tr>
<th>Without Mi-Sensor</th>
<th>With Mi-Sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle n° 1: 3 sessions <strong>Concentric level 1</strong> a week</td>
<td>Cycle n° 2: 2-3 sessions <strong>Concentric level 2</strong> a week</td>
</tr>
<tr>
<td>Cycle n° 3: 2-3 sessions <strong>Concentric level 3</strong> a week</td>
<td>Cycle n° 4: 2-3 sessions <strong>Concentric level 4</strong> a week</td>
</tr>
<tr>
<td>Cycle n° 5: 2-3 sessions <strong>Concentric level 5</strong> a week</td>
<td></td>
</tr>
</tbody>
</table>

**Placement of electrodes and position of the body**

See pictures n° 10, n° 11 and n° 44
Preparation for an athlete wishing to combine active dynamic eccentric work on the triceps with muscular electrostimulation

For all electrostimulation programmes that cause tetanic contractions of the stimulated muscles, it is generally recommended to work isometrically, in order to limit shortening of the muscle during its contraction and thus avoid the onset of an unpleasant sensation of cramp. Dynamic work combined with electrostimulation is however possible, provided the weights used are significant. The Eccentric programme is intended to be combined simultaneously with voluntary dynamic eccentric contractions (contraction during which the length of the agonist muscle increases).

It is a strength training programme that combines active work and electrostimulation. The parameters have been chosen to allow eccentric training using weights that increase in size as the user progresses through the levels.

**Level 1** is intended to be used for eccentric contractions with a weight representing 80 to 90% of the maximal strength (Fmax.).

**Level 2** is intended to be used for eccentric contractions with a weight representing 91 to 100% of the maximal strength (Fmax.).

**Level 3** is intended to be used for eccentric contractions with a weight representing 101 to 110% of the maximal strength (Fmax.).

**Level 4** is intended to be used for eccentric contractions with a weight representing 111 to 115% of the maximal strength (Fmax.).

**Level 5** is intended to be used for eccentric contractions with a weight representing 116 to 120% of the maximal strength (Fmax.).

This programme is intended for sportspersons who regularly practise voluntary muscle training and are already familiar with electrostimulation muscle training; this means for sportspersons who have already completed at least one full isometric stimulation cycle with a conventional Compex programme on the muscle group which is going to be stimulated with the Eccentric programme. A prior cycle with the Concentric programme is also strongly recommended, to avoid cutting corners.

This type of training is very likely to generate muscular pain such as stiffness, appearing mainly after the first training sessions. The beneficial effects of such training (overcompensation) are only felt several weeks after the end of the training cycle. It is therefore necessary to use the Eccentric programme in the preparation phase and well in advance of the target competition.

The mi-action mode is particularly suitable for the Eccentric programme.
Preparation for a thrower (javelin, shot put) or tennis player (service, smash) who wishes to increase explosive strength through plyometric training

Plyometric training consists in combining an eccentric contraction with tensioning of elastic structures, followed by a rapid and explosive concentric contraction. During a sequence such as this, the rate of discharge of motor neurones is very distinctive and occurs with a very high frequency during the explosive concentric contraction. The Plyometry programme reproduces the sequence of nervous discharges during plyometric training, leading to development of the muscular structures as a result of this nervous stimulation. This high level of stimulation with the Compex increases the explosive strength of muscles, without the usual risk of injury connected with voluntary plyometric training.

Depending on the sport being practised, a different muscle group may be chosen (to determine this muscular group, refer to the training planner on the CD-ROM). In this example, it will be beneficial for the javelin thrower and tennis player to stimulate the latissimus dorsi using the Plyometry programme. The shot put thrower or boxer, on the other hand, will work on the triceps.

Recommended programme

**Eccentric**

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Without mi-SENSOR</th>
<th>With mi-SENSOR</th>
</tr>
</thead>
</table>

**Duration of treatment**

Since the Eccentric programme is intended to be combined with voluntary strength training of the muscles, the duration of the treatment is that of the cycle of this active strength work (usually, 3-8 weeks)

**Procedure of treatment**

Depending on the muscle training technique used, the Eccentric programme may be combined with voluntary contractions in a number of ways. Always consider the percentage of the Fmax. for which each level of the programme is intended. Below is an example of combining the Eccentric programme with voluntary work of “pyramidal” type

Application of a strength session on the triceps (“dips”) of “pyramidal” type, combined with the Eccentric programme:
The session includes 5 series; the Fmax. of the triceps of this athlete is 80 kg. For each serie, the movement performed is a “dips”, combined with electrostimulation of the triceps with the Eccentric programme

<table>
<thead>
<tr>
<th>Weight used</th>
<th>Level of the programme</th>
<th>Number of repetitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>66 kg (85% Fmax.)</td>
<td>Level 1</td>
<td>10</td>
</tr>
<tr>
<td>76 kg (95% Fmax.)</td>
<td>Level 2</td>
<td>8</td>
</tr>
<tr>
<td>84 kg (105% Fmax.)</td>
<td>Level 3</td>
<td>7</td>
</tr>
<tr>
<td>89,6 kg (112% Fmax.)</td>
<td>Level 4</td>
<td>5</td>
</tr>
<tr>
<td>93,6 kg (117% Fmax.)</td>
<td>Level 5</td>
<td>3</td>
</tr>
</tbody>
</table>

**Placement of electrodes**

See picture n° 19

As is always necessary for this type of exercise, ensure that you adopt the correct position in the low back region

Recommended programme

**Plyometry**

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Without mi-SENSOR</th>
<th>With mi-SENSOR</th>
</tr>
</thead>
</table>

**Duration of treatment**

9 weeks

**Procedure of treatment**

Week 1: 3 sessions **Plyometry level 1**

Weeks 2-3: 3 sessions **Plyometry level 2** a week

Weeks 4-5: 3 sessions **Plyometry level 3** a week

Weeks 6-7: 3 sessions **Plyometry level 4** a week

Weeks 8-9: 3 sessions **Plyometry level 5** a week

**Maintenance**

Week 10 and following weeks: 1 session **Plyometry level 5** a week

**Placement of electrodes and position of the body**

See picture n° 18
Resuming activity after a break in training: variable muscle preparation

In this example, we assume that the sportsman wants to work above all on the latissimus dorsi. It is of course possible to stimulate other muscles as well. Also, the Fartlek programme can be used on several muscle groups at the same time, that is to say the same stimulation procedure can be applied to both quadriceps and calves, for instance.

The fartlek comes from Scandinavia. It involves diversified training carried on in a natural setting. During training, different work-out routines are alternated and different muscles are stimulated. For example, after a few minutes of slow jogging, the trainee does a series of accelerations followed by some jumps, before resuming a slower jog, and so on. The objective is to work on different muscular qualities without however emphasising any one in particular. This activity is frequently done either at the beginning of the season, for general muscular reactivation, or done regularly by leisure-time sports enthusiasts who do not want to emphasise any particular kind of muscular performance, but rather want to stay fit and reach the right level in all kinds of muscular work.

At the beginning of the season or after a significant break in training, the resumption of physical and/or sports activity should be done progressively and become increasingly specific. It is thus normal to perform a few initial sessions with the aim of making the muscles do all kinds of work to prepare them for later training that will be more intensive and more oriented towards a specific kind of performance.

Through these eight sequences that automatically follow each other, the Fartlek programme imposes different kinds of work to the stimulated muscles and thus makes them used to all kinds of effort.

The mi-action mode is particularly suitable for the Fartlek programme.

Recommended programme

Muscular group

Fartlek

Without mi-sensor

With mi-sensor

Duration of treatment

4-6 sessions spread out over 1-2 weeks

Procedure of treatment

If 4 sessions are spread out over 1 week:

Week 1:

4 sessions

sessions 1-2: Fartlek level 1

sessions 3-4: Fartlek level 2

If 6 sessions are spread out over 2 weeks:

Week 1:

3 sessions Fartlek level 1

Week 2:

3 sessions Fartlek level 2

Placement of electrodes and position of the body

See picture n° 18

Preparation for a sportsman who wants to adopt a variable muscle training approach

In this example, we assume that the sportsman wants to work above all on his buttocks. It is of course possible to stimulate other muscles as well. Also, the Fartlek programme can be used on several muscle groups at the same time, that is to say the same stimulation procedure can be applied to both quadriceps and calves, for instance.

The fartlek comes from Scandinavia. It involves diversified training carried on in a natural setting. During training, different work-out routines are alternated and different muscles are stimulated. For example, after a few minutes of slow jogging, the trainee does a series of accelerations followed by some jumps, before resuming a slower jog, and so on. The objective is to work on different muscular qualities without however emphasising any one in particular. This activity is frequently done either at the beginning of the season, for general muscular reactivation, or done regularly by leisure-time sports enthusiasts who do not want to emphasise any particular kind of muscular performance, but rather want to stay fit and reach the right level in all kinds of muscular work.

Most sportsmen want to improve their muscle qualities and, with this aim in mind, pursue objectives that may be different: improved muscle tone, increased endurance, greater muscle volume, etc. The means used to achieve these different objectives involve different kinds of voluntary training and the use of specific electrostimulation programmes.

Other sportsmen prefer to develop all their muscular qualities, without any emphasis on any one of them in particular. In this case, it is useful to subject the muscles, during the same session, to various kinds of stimulation, such as those produced by the Fartlek programme through its 8 routines that automatically form a sequence.

The mi-action mode is particularly suitable for the Fartlek programme.

Recommended programme

Muscular group

Fartlek

Without mi-sensor

With mi-sensor

Duration of treatment

3-6 weeks per cycle (minimum 3 weeks)

Procedure of treatment

Start from level 1 and do not skip any levels between cycles
Preparation for a footballer wishing to optimise the effects of active stretching of the hamstrings muscles

The Stretching programme consists in stimulating the antagonist (i.e. opposite) muscle of the muscle subjected to stretching in order to exploit a well-known physiological mechanism: reciprocal inhibition reflex. This reflex, based on the proprioceptive sensitivity of muscles, consists of a very marked muscular relaxation. This allows more efficient stretching, since it is carried out on a more relaxed muscle.

Stimulation is therefore performed on the muscle opposing the muscle being stretched. This stimulation consists of a progressive appearance and disappearance (slowly and lasting a long time) of contractions, with complete rest between contractions. It is during the contraction (which increases with each new level) that the athlete stretches the chosen muscle group by means of a traditional voluntary stretching technique.

In this example, the stimulation is carried out on the quadriceps in order to facilitate stretching of the hamstrings muscles during the contraction phases.

Recommended programme

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Stretching</th>
<th>With μSens</th>
<th>Without μSens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placement of electrodes</td>
<td>See picture n° 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and position of the body</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Planning the weekly sessions

Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 session Fartlek on buttocks</td>
<td>Usual voluntary training</td>
<td>1 session Fartlek on buttocks</td>
<td>Usual voluntary training</td>
<td>1 session Fartlek on buttocks (optional)</td>
<td>Usual voluntary training</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Maintenance

At the end of a cycle, you may either start a new cycle at the next level up or do some maintenance at the rate of 1 session Fartlek per week at the last level reached.

Duration of treatment

Throughout the season, according to the frequency of voluntary stretching sessions

Procedure of treatment

According to the normal duration of stretching (this depends on schools of physical training and each person’s feelings), choose the level that seems most appropriate

The proposed duration of stretching is:

- 10 seconds for level 1
- 12 seconds for level 2
- 14 seconds for level 3
- 16 seconds for level 4
- 18 seconds for level 5

Placement of electrodes

See picture n° 8

Position of the body

Adopt the starting position for the active stretching exercise.
Use of the **Regeneration** programme to eliminate muscle fatigue more quickly (cross-country running, football, basketball, tennis, etc.) and restore good muscular sensations more quickly

The **Regeneration** programme, known also as the “day-after programme” must be used on key muscles for the discipline being practised. In this example, key muscles for the cross-country runner (quadriceps) will be stimulated. Depending on the sport being practised, a different muscle group may be chosen (to determine this muscular group, refer to the training planner on the CD-ROM).

Note that this type of programme is particularly beneficial for all sports where competitions are repeated at frequent intervals, during tournaments and cups.

The stimulation session using the **Regeneration** programme must be carried out the day after a competition to replace or supplement so-called “restoration” training, which can therefore be less intensive. Contrary to the **Active recovery** programme, which provokes no tetanic contractions and which must be used during the three hours after the competition or intensive training, the **Regeneration** programme is a form of light training which, in addition to an analgesic effect and an increased blood flow, aims to impose a small degree of anaerobic training and likewise to provoke slight tetanic contractions that are not tiring, making it possible to reactivate the proprioceptive pathways. Energy pathways are also gently stimulated, allowing their metabolic equilibrium to re-establish itself.

The session is composed of 6 stimulation sequences that follow on automatically:

1st sequence: analgesic effect

2nd sequence: marked increase in blood flow

3rd sequence: tetanic contractions to restore muscular sensation

4th sequence: activation of the oxidative metabolism

5th sequence: marked increase in blood flow

6th sequence: relaxing effect

---

**Note:** The **Mi-ACTION** mode is particularly suitable for the **Regeneration** programme.

---

### Recommended programme

**Regeneration**

**Muscular group**

Without **Mi-SENSOR**

With **Mi-SENSOR**

**Duration of treatment**

To be used throughout the season, according to the frequency of competitions

**Procedure of treatment**

1 session **Regeneration** the day after each competition

**Placement of electrodes and position of the body**

See picture n° 8

### 2. **Fitness** category

#### 2.1 Introduction

Today there are more fitness enthusiasts than ever before, and their number is rising. Apart from some rare individuals who have real competitive targets, the vast majority have only one aim: to restore their body to peak physical condition or maintain it at that level.

Cardio training therefore alternates with more specific exercises to develop or maintain a good quality musculature.

With this in mind, the sought-after aims may differ according to who is doing the training: increasing muscle volume to achieve an imposing stature (body-building) or better muscle endurance to improve physical comfort during sustained efforts. Combined with a voluntary physical activity (aerobic exercises in the fitness facility, footing, cycling, swimming, etc.), which becomes more pleasant and therefore more effective, the programmes of the **Fitness** category enable users to obtain a toned and harmonious figure.

The programmes of the **Fitness** category are intended to make healthy muscles work, they are not suitable for atrophied muscles or muscles that have suffered from any kind of pathological process. For such muscles, it is necessary to use the programmes of the **Rehabilitation** category (see this section further on in this chapter).
2.2 Table of the Fitness programmes

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Effects</th>
<th>Uses</th>
<th>Placement of electrodes</th>
<th>Stimulation energies</th>
<th>Mi-ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Muscle starter</strong></td>
<td>Improvement of the contractile qualities of insufficiently used muscles</td>
<td>To reactivate the muscles of a sedentary person and restore physiological muscular qualities</td>
<td>Depending on which muscle is to be stimulated, follow the recommended placement</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Restoration and/or improvement of cellular exchanges at the level of the stimulated muscles</td>
<td></td>
<td>See pictures n° 1-23</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Muscle building</strong></td>
<td>Hypertrophy, Increased diameter of muscle fibres</td>
<td>For those who wish to gain muscle volume and mass</td>
<td>Depending on which muscle is to be stimulated, follow the recommended placement</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See pictures n° 1-23</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aerobic</strong></td>
<td>Increased muscle ability to sustain long-lasting efforts, Improved consumption of oxygen of the stimulated muscles</td>
<td>To improve physical comfort during aerobic activities, To delay the onset of muscle fatigue during long-duration activities, To improve well-being during daily life activities</td>
<td>Depending on which muscle is to be stimulated, follow the recommended placement</td>
<td>Maximum tolerable energy</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>See pictures n° 1-23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.3 Specific applications of the Fitness programmes

Reconditioning of the abdominal muscles for a sedentary person

The muscles of the abdomen carry out many functions: movements of the trunk, maintenance of organs, protection of the low back region, transmission of forces of the lower limbs, expiration of air contained in the lungs, etc. Inactivity, unless the consequence of a pathological problem (in which case it is necessary to use the programmes of the Rehabilitation category), will result in the abdominal muscles being progressively less able to carry out their functions. The Compex programmes will allow these "sedentary" muscles to regain their essential qualities and become functional again, which will quickly give rise to a feeling of "well-being".

The Mi-ACTION mode is particularly suitable for the Muscle starter programme.

**Recommended programme**

**Muscle builder**

**Muscular group**

Without Mi-Sensor

**Duration of treatment**

- 3 weeks

**Procedure of treatment**

- 3 sessions Muscle starter a week

**Maintenance**

- Week 4 and following weeks: 1 session Muscle starter a week

**Option:** From week 4 and depending on your objectives, you can use a programme of another category, referring to the tips given in this manual

**Placement of electrodes and position of the body**

See picture n° 10
Improve well-being and appearance: BUTTOCKS AND ABDOMEN

Integrate electrostimulation into two weekly sessions of physical activity

Two weekly sessions of voluntary physical activity will enable you to improve your physical condition or to keep your body in good shape. Some muscles, like the buttocks, are however difficult to isolate in terms of the work they do; other muscles, such as the abdominals, require fastidious exercises to be carried out every day.

The Muscle starter programme applied to the abdomen and buttocks is the ideal supplement to voluntary exercise. It enables these muscles effectively to improve their tone and their supporting role.

The mi-ACTION mode is particularly suitable for Muscle starter programme.

Recommended programme
Muscular groups

Muscle starter
Without mi-sensor

With mi-sensor

for the buttocks

for the abdominal muscles

Duration of treatment
At least 4 weeks

Procedure of treatment
Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>45'-1h of voluntary</td>
<td>Rest</td>
<td>Rest</td>
<td>45'-1h of</td>
<td>Rest</td>
<td>1 session</td>
<td>Rest</td>
</tr>
<tr>
<td>physical activity</td>
<td></td>
<td></td>
<td>voluntary</td>
<td></td>
<td>Muscle</td>
<td></td>
</tr>
<tr>
<td>(jogging, swimming,</td>
<td></td>
<td></td>
<td>physical</td>
<td></td>
<td>starter</td>
<td></td>
</tr>
<tr>
<td>cycling, fitness</td>
<td></td>
<td></td>
<td>activity,</td>
<td></td>
<td>on</td>
<td></td>
</tr>
<tr>
<td>activity, etc.), then</td>
<td></td>
<td></td>
<td>etc.),</td>
<td></td>
<td>buttocks</td>
<td></td>
</tr>
<tr>
<td>1 session Muscle</td>
<td></td>
<td></td>
<td>1 session</td>
<td></td>
<td>starter</td>
<td></td>
</tr>
<tr>
<td>starter on buttocks</td>
<td></td>
<td></td>
<td>on</td>
<td></td>
<td>on</td>
<td></td>
</tr>
<tr>
<td>or abdominal muscles</td>
<td></td>
<td></td>
<td>buttocks</td>
<td></td>
<td>muscles</td>
<td></td>
</tr>
</tbody>
</table>

Maintenance
Week 5 and following weeks: 1 session Muscle starter a week

Option: From week 5 and depending on your objectives, you can use a programme of another category, referring to the tips given in this manual

Placement of electrodes and position of the body
See picture n° 9 for the buttocks
See picture n° 10 for the abdominal muscles

Improve physical comfort and pleasure during long-lasting activity

(eg: jogging, biking, leisure swimming)

Many people, even on a non-competitive basis, regularly practice an aerobic type physical activity involving moderate intensity but long-lasting effort. This method is today unanimously considered to be the healthiest approach: it enables the person to improve and maintain cardio-vascular and muscle qualities. Using the Aerobic programme (possibly combined with the Capillarization programme), these enthusiasts can develop the ability of their muscles to use efficiently the oxygen provided by the organism. More pleasure, a better physical comfort during leisure activities and the supplementary benefit of achieving objectives are thus obtained.

The mi-ACTION mode is particularly suitable for the Aerobic programme.

Recommended programmes
Muscular group

Aerobic + Capillarization
Without mi-sensor

With mi-sensor

Duration of treatment
8 weeks

Procedure of treatment
Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest</td>
<td>1 session</td>
<td>45'-1h of</td>
<td>Aerobic</td>
<td>Rest</td>
<td>45'-1h</td>
<td></td>
</tr>
<tr>
<td>1h of voluntary activity</td>
<td></td>
<td>aerobic</td>
<td>on thighs</td>
<td></td>
<td>of aerobic</td>
<td></td>
</tr>
<tr>
<td>(jogging, cycling,</td>
<td></td>
<td>type</td>
<td>on thighs</td>
<td></td>
<td>activity</td>
<td></td>
</tr>
<tr>
<td>swimming, etc.), then</td>
<td></td>
<td>(footing,</td>
<td></td>
<td></td>
<td>of aerobic</td>
<td></td>
</tr>
<tr>
<td>according to your</td>
<td></td>
<td>cycling,</td>
<td></td>
<td></td>
<td>type</td>
<td></td>
</tr>
<tr>
<td>possibilities and</td>
<td></td>
<td>swimming,</td>
<td></td>
<td></td>
<td>(footing,</td>
<td></td>
</tr>
<tr>
<td>optionally, 1 session</td>
<td></td>
<td>etc.),</td>
<td></td>
<td></td>
<td>cycling,</td>
<td></td>
</tr>
<tr>
<td>Capillarization</td>
<td></td>
<td>1 session</td>
<td></td>
<td></td>
<td>swimming,</td>
<td></td>
</tr>
<tr>
<td>on thighs</td>
<td></td>
<td>Capillarization</td>
<td></td>
<td></td>
<td>etc.)</td>
<td></td>
</tr>
</tbody>
</table>

Placement of electrodes
See picture n° 8

and position of the body
Developing and shaping the abdominal muscles

To develop muscle mass and volume, the muscles must be subjected to a large amount of work. However, to achieve the sought-after goal, this work needs to be intensive. Voluntary exercises of the abdominal muscles are generally fastidious and often dangerous for the low back if not correctly carried out. The Compex Muscle starter and Muscle building programmes make it possible to reactivate and tone the abdominal muscles before the more intense work of the Muscle building programme. To develop volume and achieve a harmonious abdominal muscles, the Compex offers a specific mode of stimulation that is highly effective and without risk for the low back region.

The M1-ACTION mode is particularly suitable for the Muscle starter and Muscle building programmes.

Recommended programmes
Muscle starter, then Muscle building
Muscular group
Without M1-SENSOR  With M1-SENSOR
Duration of treatment 6 weeks
Procedure of treatment
Weeks 1-2: 3 sessions Muscle starter a week
Weeks 3-6: 3 sessions Muscle building a week
Placement of electrodes and position of the body
See picture n° 8

Preparing the thighs prior to a week skiing for a sedentary person

Seasonal physical activity, such as skiing, even if practised as a leisure activity, will subject the organism of sedentary persons to unusual stresses. The thigh muscles (quadriceps) are the muscles that are most used, and these play an essential role in protecting the knee joints. It is for this reason that the pleasure of the first few days’ skiing is frequently spoilt by severe muscle sores, and even knee trauma, which can sometimes be serious. The Compex Muscle starter and Muscle building programmes offer ideal muscular preparation for the thigh muscles. You can then go skiing without fear of overdoing things, with enhanced pleasure and safety.

The M1-ACTION mode is particularly suitable for the Muscle starter and Muscle building programmes.

Recommended programmes
Muscle starter, then Muscle building
Muscular group
Without M1-SENSOR  With M1-SENSOR
Duration of treatment 6 weeks
Procedure of treatment
Weeks 1-2: 3 sessions Muscle starter a week
Weeks 3-6: 3 sessions Muscle building a week
Placement of electrodes and position of the body
See picture n° 8
Developing and shaping the shoulders for an active person

Most voluntary physical activities, such as jogging or cycling, do not make intensive use of the shoulder muscles. That is why it is particularly beneficial to offset this under-utilisation by combining Compex sessions with your voluntary training programme. The Muscle building programme imposes a very large quantity of work specifically on muscles of the upper body, bringing about an increase in volume and harmonious development of the shoulders. As opposed to voluntary exercises carried out with heavy weights, that are liable to damage joints and tendons, stimulation with the Compex causes few, if any, strains to joints and tendons.

The mi-ACTION mode is particularly suitable for the Muscle building programme.

Recommended programme
Muscular groups

Muscle building

Duration of treatment
4 weeks minimum

Procedure of treatment
Follow the planning example for 1 week outlined below:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>45'-1h of voluntary</td>
<td>Rest</td>
<td>1 session</td>
<td>45'-1h</td>
<td>1 session</td>
<td>Rest</td>
<td>1 session</td>
</tr>
<tr>
<td>physical activity</td>
<td></td>
<td>Muscle</td>
<td>of voluntary</td>
<td>Muscle</td>
<td></td>
<td>Muscle</td>
</tr>
<tr>
<td>(jogging, swimming,</td>
<td></td>
<td>building</td>
<td>physical</td>
<td>building</td>
<td></td>
<td>building</td>
</tr>
<tr>
<td>cycling, fitness</td>
<td></td>
<td>on deltoids</td>
<td>activity</td>
<td>on deltoids</td>
<td></td>
<td>on latissimus dorsi</td>
</tr>
<tr>
<td>activity, etc.)</td>
<td></td>
<td></td>
<td>(jogging,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>swimming,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>cycling,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>fitness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>activity,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body

See picture n° 17 for the deltoids
See picture n° 18 for the latissimus dorsi

3. Aesthetic category

3.1 Introduction

Thanks to their great diversity and their high specificity, the Compex Aesthetic programmes provide the solution for everyone who wants to regain and keep the benefits of intense muscular activity. These programmes allow you to restore and maintain a firm body, shapely figure and toned skin.

Indeed a sedentary life-style is very bad for the figure, especially if you have a poorly balanced diet. The muscles which are not used much lose their qualities: loss of strength, reduced tone, slackness. They can no longer carry out their tasks of supporting the body and holding the organs in place. The body becomes soft and loose, with clear consequences on body shape.
To firm and sculpt the body: **ABDOMEN**

Together with the high-quality electric impulses produced by the device, the Compex **Aesthetic** programmes impose perfectly adapted and progressive work on the muscles. This very intensive muscular activity (hundreds of seconds of sustained contractions) first tones and firms your muscles, then redefines their contours to sculpt your body.

The **Mi-ACTION** mode is particularly suitable for the **Muscle tone**, **Muscle firming** and **Shaping** programmes.

### Recommended programmes

**Muscle tone**, **Muscle firming**, then **Shaping**

### Muscular group

- **Without Mi-Sensor**
- **With Mi-Sensor**

### Duration of treatment

12 weeks, then maintenance

### Procedure of treatment

- **Week 1**: 2 sessions **Muscle tone**
- **Week 2**: 3 sessions **Muscle tone**
- **Weeks 3-7**: 3 sessions **Muscle firming a week**
- **Weeks 8-12**: 3 sessions **Shaping a week**

### Maintenance

- **Week 13 and following weeks**: 1 session **Shaping a week**

### Placement of electrodes and position of the body

- **See picture n° 10**
To firm and sculpt the body: **BUTTOCKS**

Together with the high-quality electric impulses produced by the device, the Compex **Aesthetic** programmes impose perfectly adapted and progressive work on the muscles. This very intensive muscular activity (hundreds of seconds of sustained contractions) first tones and firms your muscles, then redefines their contours to sculpt your body.

The **mi-action** mode is particularly suitable for the **Muscle tone**, **Muscle firming** and **Shaping** programmes.

**Recommended programmes**

**Muscle tone, Muscle firming, then Shaping**

**Muscular group**

Without **mi-sensor**

With **mi-sensor**

**Duration of treatment**

12 weeks, then maintenance

**Procedure of treatment**

- **Week 1:** 2 sessions **Muscle tone**
- **Week 2:** 3 sessions **Muscle tone**
- **Weeks 3-7:** 3 sessions **Muscle firming** a week
- **Weeks 8-12:** 3 sessions **Shaping** a week

**Maintenance**

- **Week 13** and following weeks: 1 session **Shaping** a week

**Placement of electrodes and position of the body**

See picture n° 9

---

To firm and sculpt the body: **THIGHS**

Together with the high-quality electric impulses produced by the device, the Compex **Aesthetic** programmes impose perfectly adapted and progressive work on the muscles. This very intensive muscular activity (hundreds of seconds of sustained contractions) first tones and firms your muscles, then redefines their contours to sculpt your body.

The **mi-action** mode is particularly suitable for the **Muscle tone**, **Muscle firming** and **Shaping** programmes.

**Recommended programmes**

**Muscle tone, Muscle firming, then Shaping**

**Muscular group**

Without **mi-sensor**

With **mi-sensor**

**Duration of treatment**

12 weeks, then maintenance

**Procedure of treatment**

- **Week 1:** 2 sessions **Muscle tone**
- **Week 2:** 3 sessions **Muscle tone**
- **Weeks 3-7:** 3 sessions **Muscle firming** a week
- **Weeks 8-12:** 3 sessions **Shaping** a week

**Maintenance**

- **Week 13** and following weeks: 1 session **Shaping** a week

**Placement of electrodes and position of the body**

See picture n° 8
To firm and sculpt the body: **ARMS**

Together with the high-quality electric impulses produced by the device, the Compex Aesthetic programmes impose perfectly adapted and progressive work on the muscles. This very intensive muscular activity (hundreds of seconds of sustained contractions) first tones and firms your muscles, then redefines their contours to sculpt your body.

The **mi-ACTION** mode is particularly suitable for the Muscle tone, Muscle firming and Shaping programmes.

**Recommended programmes**

- **Muscle tone, Muscle firming, then Shaping**

  **Muscular group**
  - **Without mi-SENSOR**
  - **With mi-SENSOR**

  **Duration of treatment**
  - 12 weeks, then maintenance

  **Procedure of treatment**
  - Week 1: 2 sessions Muscle tone
  - Week 2: 3 sessions Muscle tone
  - Weeks 3-7: 3 sessions Muscle firming a week
  - Weeks 8-12: 3 sessions Shaping a week

  **Maintenance**
  - Week 13 and following weeks: 1 session Shaping a week

  **Placement of electrodes and position of the body**
  - See picture n° 21

---

To firm and sculpt the body: **BUTTOCKS AND THIGHS**

*(example of simultaneous treatment of two areas)*

Together with the high-quality electric impulses produced by the device, the Compex Aesthetic programmes impose perfectly adapted and progressive work on the muscles. This very intensive muscular activity (hundreds of seconds of sustained contractions) first tones and firms your muscles, then redefines their contours to sculpt your body.

The **mi-ACTION** mode is particularly suitable for the Muscle tone, Muscle firming and Shaping programmes.

**Recommended programmes**

- **Muscle tone, Muscle firming, then Shaping**

  **Muscular groups**
  - **Without mi-SENSOR**
  - **With mi-SENSOR**

    **for the buttocks**
    - 3 sessions Muscle firming a week
    - 3 sessions Muscle firming a week
    - 3 sessions Shaping a week

    **for the thighs**
    - 3 sessions Muscle firming a week
    - 3 sessions Muscle firming a week
    - 3 sessions Shaping a week

  **Duration of treatment**
  - 12 weeks, then maintenance

  **Procedure of treatment**
  - Week 1: 2 sessions Muscle tone on the buttocks
  - 2 sessions Muscle tone on the thighs
  - Week 2: 3 sessions Muscle tone on the buttocks
  - 3 sessions Muscle tone on the thighs
  - Weeks 3-7: 3 sessions Muscle firming a week on the buttocks
  - 3 sessions Muscle firming a week on the thighs
  - Weeks 8-12: 3 sessions Shaping a week on the buttocks
  - 3 sessions Shaping a week on the thighs
Planning the weekly sessions

Below are two examples of the 6 weekly sessions planned for week 4:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 session Muscle firming on buttocks</td>
<td>Rest</td>
<td>1 session Muscle firming on buttocks, followed by 1 session Muscle firming on thighs</td>
<td>Rest</td>
<td>1 session Muscle firming on buttocks, followed by 1 session Muscle firming on thighs</td>
<td>Rest</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Example 2

1 session Muscle firming on buttocks
1 session Muscle firming on thighs
1 session Muscle firming on thighs
1 session Muscle firming on thighs
1 session Muscle firming on thighs
Rest

Maintenance

Week 13 and following weeks: 1 session Shaping a week on the buttocks
1 session Shaping a week on the thighs

Placement of electrodes and position of the body

See picture n° 9 for the buttocks
See picture n° 8 for the thighs

To firm and sculpt the body: ABDOMEN AND ARMS
(example of simultaneous treatment of two areas)

Together with the high-quality electric impulses produced by the device, the Compex Aesthetic programmes impose perfectly adapted and progressive work on the muscles. This very intensive muscular activity (hundreds of seconds of sustained contractions) first tones and firms your muscles, then redefines their contours to sculpt your body.

The mi-action mode is particularly suitable for the Muscle tone, Muscle firming and Shaping programmes.

Recommended programmes

Muscle tone, Muscle firming, then Shaping

Muscular groups

Without mi-sensor

With mi-sensor

Duration of treatment

12 weeks, then maintenance

Procedure of treatment

Week 1:
2 sessions Muscle tone on the abdomen
2 sessions Muscle tone on the arms

Week 2:
3 sessions Muscle tone on the abdomen
3 sessions Muscle tone on the arms

Weeks 3-7:
3 sessions Muscle firming a week on the abdomen
3 sessions Muscle firming a week on the arms

Weeks 8-12:
3 sessions Shaping a week on the abdomen
3 sessions Shaping a week on the arms
To improve the tone and appearance of the waist and buttocks region

For its role in maintaining or restoring a satisfactory body image, the stimulation of the abdominal and buttock muscles deserves particular attention. The muscular fibres of these muscles, because of their tone, normally play their part in supporting and containing organs (in the case of the abdominal muscles). When their tone becomes insufficient, as is generally the case when these muscles are not adequately stimulated due to lack of appropriate physical activity, their supporting role is no longer correctly performed, with negative repercussions on the figure.

The Muscle tone and Muscle firming programmes of the Aesthetic category initially enable the user to regain satisfactory muscular firmness. This initial benefit is, however, spectacularly enhanced by the Shaping programme.

The Mi-Action mode is particularly suitable for the Muscle tone, Muscle firming and Shaping programmes.

Recommended programmes
Muscle tone, Muscle firming, then Shaping

Muscular group

<table>
<thead>
<tr>
<th>Without Mi-sensor</th>
<th>With Mi-sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Muscle tone" /></td>
<td><img src="image2" alt="Muscle firming" /></td>
</tr>
</tbody>
</table>

Duration of treatment
12 weeks, then maintenance

Procedure of treatment

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1:</strong></td>
<td>2 sessions Muscle tone on the abdomen and the buttocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Week 2:</strong></td>
<td>3 sessions Muscle tone on the abdomen and the buttocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weeks 3-7:</strong></td>
<td>3 sessions Muscle firming a week on the abdomen and the buttocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weeks 8-12:</strong></td>
<td>3 sessions Shaping a week on the abdomen and the buttocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maintenance

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 13 and following weeks:</strong></td>
<td>1 session Shaping a week on the abdomen and the buttocks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Placement of electrodes and position of the body

Use the 4 stimulation channels as follows:

Channels 1 and 2: see picture n° 34; position the Mi-sensor system as shown in this picture

Channels 3 and 4: see picture n° 31

Planning the weekly sessions

Below are two examples of the 6 weekly sessions planned for week 4:

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 1</td>
<td>1 session Muscle firming on abdomen, followed by 1 session Muscle firming on arms</td>
<td>Rest</td>
<td>1 session Muscle firming on abdomen, followed by 1 session Muscle firming on arms</td>
<td>Rest</td>
<td>1 session Muscle firming on abdomen, followed by 1 session Muscle firming on arms</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Example 2

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 session Muscle firming on abdomen</td>
<td>1 session Muscle firming on arms</td>
<td>1 session Muscle firming on abdomen</td>
<td>1 session Muscle firming on arms</td>
<td>1 session Muscle firming on abdomen</td>
<td>1 session Muscle firming on arms</td>
<td>Rest</td>
</tr>
</tbody>
</table>

Maintenance

Week 13 and following weeks: 1 session Shaping a week on the abdomen and arms

Placement of electrodes and position of the body

See picture n° 10 for the abdomen
See picture n° 21 for the arms
4. Vascular category

4.1 Introduction

The low frequency current used for the Vascular category of Compex programmes significantly improves blood circulation in the stimulated area.

Many people, more particularly women who remain standing for long periods, suffer from circulatory problems. These mainly affect the legs and are caused by stagnation of the blood and the lymph and are manifested by a feeling of “heavy legs”, swelling, or the dilatation of surface veins. The consequences are multiple: fatigue, tension, pain, lack of oxygenation of tissue and the appearance of varicose veins and oedemas.

According to the programme used, the muscular twitches are more or less rapid, separate, and adopt different rhythms. The result is a specific action for each programme, and for this reason you are advised to follow closely the indications of the different treatments so that optimum results can be obtained.

If the symptoms are serious and/or persistent, you are advised to consult a doctor. Only a doctor can make an accurate diagnosis and adopt all therapeutic measures required to cure the disorder.
4.2 Table of the Vascular programmes

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Effects</th>
<th>Uses</th>
<th>Placement of electrodes</th>
<th>Stimulation energies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capillarization</td>
<td>Very marked increase in blood flow</td>
<td>In the period before competition, for those participating in endurance or resistance sports</td>
<td>Depending on the muscle being stimulated, follow the recommended placement</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained</td>
</tr>
<tr>
<td></td>
<td>Development of capillaries</td>
<td>As a supplement to a programme of the Aesthetic category</td>
<td>See pictures n° 1-23</td>
<td></td>
</tr>
<tr>
<td>Lymphatic drainage</td>
<td>Deep massage of the stimulated area</td>
<td>To contrast occasional swelling of the feet and ankles</td>
<td>Depending on the muscle being stimulated, follow the recommended placement</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained</td>
</tr>
<tr>
<td></td>
<td>Activation of return lymphatic circulation</td>
<td>As a supplement to pressure therapy or manual lymphatic drainage</td>
<td>See pictures n° 1-23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Do not use without medical advice in case of oedemas that are the side effect of a pathological problem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cramp prevention</td>
<td>Improved circulation to prevent the onset of nocturnal cramp or cramp after strains</td>
<td>Cramp mainly affects muscles of the lower limbs, in particular the calf muscles</td>
<td>Always keep to the placement indicated and the colour of the connections</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained</td>
</tr>
<tr>
<td></td>
<td></td>
<td>See picture n° 25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy legs</td>
<td>Increased venous return</td>
<td>To remove the feeling of heaviness in the legs arising in unusual situations (standing for long periods, heat, hormonal imbalance linked to the menstrual cycle, etc.)</td>
<td>See picture n° 25</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained</td>
</tr>
</tbody>
</table>

4.3 Specific applications of the Vascular programmes

Preparation for seasonal endurance activity (e.g.: hiking, bicycle touring)

Sporting physical activities that last a long time (walking, cycling, cross-country skiing, etc.) require strong muscles with a good capillary circulation so that the muscle fibres can be properly oxygenated. When a long-duration physical activity is not practised, or not practised regularly enough, the muscles lose their capacity to effectively consume oxygen and the capillary system becomes rarefied. This lack of muscular quality makes exercising uncomfortable and limits the speed of recuperation, and is responsible for many unpleasant side effects such as drowsiness, contractures, cramp and swelling.

To restore to muscles their endurance and ensure full activation of the capillary system, the Compex offers a very efficient mode of stimulation.

Recommended programme: Capillarization

Muscular groups

Without Mi-Sensor

For the thighs

With Mi-Sensor

For the calf muscles

Duration of treatment: 6-8 weeks

Procedure of treatment: 6-8 weeks before starting the hike, each week carry out 3 sessions Capillarization on the thighs and 3 sessions on the calf muscles, alternating every other day.

Placement of electrodes

See picture n° 8 for the thighs

See picture n° 25 for the calf muscles

Position of the body: Sit comfortably
Supplement to the programmes of the **Aesthetic** category

Voluntary muscle work or work carried out with electrostimulation can be supplemented to good effect by the **Capillarization** programme. Indeed, the marked increase in blood flow in the muscle capillaries produced by the **Capillarization** programme allows maximum oxygenation of the muscles and surrounding tissue. Muscle fibres are thus correctly oxygenated and obtain maximum benefit from the exercise they have just carried out. In addition, drainage and oxygenation of the surrounding tissue restores equilibrium and rounds off the work.

**Recommended programme**

<table>
<thead>
<tr>
<th>Muscular group</th>
<th>Capillarization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without mi-SENSOR</td>
<td>With mi-SENSOR</td>
</tr>
<tr>
<td>Same muscular group as the programme of the <strong>Aesthetic</strong> category used previously</td>
<td></td>
</tr>
</tbody>
</table>

**Duration of treatment**

12 weeks

**Procedure of treatment**

Follow each session **Muscle tone, Muscle firming** or **Shaping** with 1 session **Capillarization** on the same muscle group

**Placement of electrodes**

See pictures n° 1-23 (according to the muscle being treated)

**Position of the body**

Adopt the position that feels most comfortable for you, according to which muscles are being stimulated

---

**Achieving peak form before competition for resistance sports**

*(eg: 800 metres, 1500 metres, mountain biking, mountain stage in cycling, cycling pursuit on track, 200 metres swimming, slalom)*

Sports that require maximum effort lasting from 30 seconds to 5 minutes are the so-called resistance sports. Rapid fibres must work at a capacity close to their maximum and be capable of maintaining this intensive work throughout the event without weakening, in other words the rapid fibres must be resistant.

The **Capillarization** programme, which produces a very significant increase in the blood flow in the muscles, brings about development of the intramuscular capillary system (capillarization). This growth of the capillaries works best if it occurs around the rapid fibres. In this way, the latter’s exchange surface with the blood increases, allowing an improved supply of glucose, better diffusion of oxygen and quicker evacuation of lactic acid. Capillarization therefore allows the rapid fibres to be more resistant and to maintain their optimum capacity over a longer period.

However, prolonged or too frequent use of this programme may induce a modification of rapid fibres into slow fibres, thereby risking a decline in performance for strength and speed sports. It is therefore important to follow closely the recommendations below concerning the specific application in order to benefit from the positive effects of this treatment.

**Recommended programme**

<table>
<thead>
<tr>
<th>Capillarization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without mi-SENSOR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Muscular group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without mi-SENSOR</td>
</tr>
</tbody>
</table>

**Duration of treatment**

1 week before competition, carry out 2 sessions

**Procedure of treatment**

1 week before competition on the quadriceps with a 10 minute break between the 2 sessions

**Placement of electrodes**

See picture n° 8

**Position of the body**

Adopt a comfortable position, either seated or lying down
Prevention of contractures in the muscles of the back of the neck for cyclists

During voluntary training or competitions, some athletes experience the problem of contractures in support muscles (for example, the back of the neck for cyclists). Use of the Capillarization programme reduces, and may resolve, this problem. The marked increase in blood circulation and development of the capillary system improve the oxygenation of fibres and their exchanges with the blood. The muscle therefore becomes less prone to contractures.

**Recommended programme**

**Muscular group**

Without \( \text{mi-SENSOR} \)  
With \( \text{mi-SENSOR} \)

**Duration of treatment**

3 weeks

**Procedure of treatment**

Weeks 1-3: 1 session Capillarization a day on the muscles of the back of the neck

**Maintenance**

Week 4 and following weeks: 2 sessions Capillarization a week on the muscles of the back of the neck

**Placement of electrodes**

See picture n° 15

**Position of the body**

Adopt a seated position with the head resting comfortably on a cushion

Prevention of occasional swelling of the feet and ankles

Insufficient blood circulation in the veins in unusual circumstances frequently gives rise to an accumulation of blood and lymph in the extremities of the lower limbs.

This phenomenon, which results in swelling of the ankles and feet, brings with it an unpleasant sense of heaviness and tension in the areas concerned. The deep massage caused by the Lymphatic drainage programme will effectively activate lymph return circulation and thus encourage the elimination of this disorder.

**Recommended programme**

**Muscular group**

Without \( \text{mi-SENSOR} \)  
With \( \text{mi-SENSOR} \)

**Duration of treatment**

Use this treatment whenever you experience occasional swelling of the feet and ankles

**Procedure of treatment**

Weeks 1-8: 3 sessions Lymphatic drainage a week on the calf muscles

**Maintenance**

Week 9 and following weeks: 1 session Lymphatic drainage a week on the calf muscles

**Placement of electrodes**

See picture n° 25

**Position of the body**

Lay on your back with feet raised by about 30 centimetres and knees slightly bent
Prevention of the feeling of heaviness in the legs

The feeling of heaviness in the legs is due to a temporary deficiency in the venous return, and not to major organic lesions. Stagnation of the blood mass in the legs is encouraged in certain situations: prolonged periods in a standing position, long periods continuously seated, intense heat, etc. The insufficient supply of oxygen to the tissue, and in particular the muscles, that results from this situation, causes the feeling of heaviness and discomfort in the legs. Use of the Heavy legs programme accelerates the return of blood to the veins and has an important relaxing effect on the painful muscles.

Recommended programme: Heavy legs
Muscular group
Without mi-SENSOR
With mi-SENSOR
Duration of treatment
5 weeks
Procedure of treatment
Weeks 1-5: 1 session Cramp prevention a day, to be carried out at the end of the day or at night
Maintenance
Week 6 and following weeks: 1 session Cramp prevention a week
Placement of electrodes
See picture n° 25
Position of the body
Seated or lying down with the legs outstretched

Prevention of cramp in the calf muscles

Many people suffer from cramp in the calf muscles, which can appear spontaneously during rest at night or as a result of prolonged muscular effort. The phenomenon of cramp may in part be caused by a disequilibrium of blood flow in the muscles.

To improve the blood circulation and prevent the onset of cramp, the Compex offers a specific stimulation programme. Use of this programme in accordance with the procedure below will allow you to obtain positive results and limit the occurrence of cramp.

Recommended programme: Cramp prevention
Muscular group
Without mi-SENSOR
With mi-SENSOR
Duration of treatment
5 weeks
Procedure of treatment
Weeks 1-5: 1 session Cramp prevention a day, to be carried out at the end of the day or at night
Maintenance
Week 6 and following weeks: 1 session Cramp prevention a week
Placement of electrodes
See picture n° 25
Position of the body
Seated or lying down with the legs outstretched
5. **Massage** category

5.1 Introduction

The programmes of the Compex **Massage** category subject the muscles of the stimulated region to moderate activity, which produces beneficial effects that help to improve physical comfort and well-being.

Remaining in the same working position for a long time (for example, sitting in front of a computer screen), conditions of stress, repeated jostling, insufficient muscular conditioning before physical activity are all very frequent situations that are often responsible for uncomfortable bodily sensations.

The automatic progression of the various stimulation sequences, specific to each programme of the **Massage** category, allows each user to adapt the effects of stimulation to his own needs and objectives.

**If strong pain persists, the programmes of the Massage category should never be used for long periods without first seeking medical advice.**
5.2 Table of the **Massage** programmes

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Effects</th>
<th>Uses</th>
<th>Placement of electrodes</th>
<th>Stimulation energies</th>
</tr>
</thead>
</table>
| **Relaxing massage** | Decreased muscular tension  
Drainage of the toxins responsible for the exaggerated increase of muscular tone  
Effect of well-being and relaxation | To eliminate uncomfortable or painful sensations, following an exaggerated increase of muscular tone | Depending on the muscle being stimulated, follow the recommended placement  
See pictures n° 1-23 | Increase the stimulation energies progressively until marked muscle twitches are obtained |
| **Reviving massage** | Considerable increase of blood flow in the stimulated region  
Improvement of tissue oxygenation  
Elimination of free radicals | To contrast effectively sensations of fatigue and localized heaviness | Depending on the muscle being stimulated, follow the recommended placement  
See pictures n° 1-23 | Increase the stimulation energies progressively until marked muscle twitches are obtained |
| **Toning massage** | Activation of blood circulation  
Recovery of muscular contractile properties  
Invigorating effect | To prepare the muscles in an ideal manner before an unusual/one-time physical activity | Depending on the muscle being stimulated, follow the recommended placement  
See pictures n° 1-23 | Increase the stimulation energies progressively until marked muscle twitches are obtained  
Make sure that the stimulation energy is sufficient in order to impose significant muscle contractions |

5.3 Specific applications of the **Massage** programmes

**Treatment of uncomfortable muscular tensions in the back of the neck**

Remaining in a seated position for long periods, associated with repetitive movements of the upper limbs (as is frequently the case in front of a computer screen), is often responsible for an uncomfortable - or even painful – increase of muscle tension of the back of the neck muscles.

Any other condition of stress may also create situations leading to a state of excessive muscular tension, which is often responsible for painful or uncomfortable sensations.

The in-depth effects produced by the **Relaxing massage** programme enable to contrast effectively such painful sensations, with a particularly significant result in terms of relaxation.

**Recommended programme**

Relaxing massage

**Muscular group**

- Without **m-SENSOR**
- With **m-SENSOR**

**Duration of treatment**

Use this treatment whenever an occasional sensation of painful muscular tension is felt.

**Procedure of treatment**

1 session **Relaxing massage** on the back of the neck muscles, to be repeated, if necessary, in cases of particularly strong muscular tension.

**Placement of electrodes**

See picture n° 15

**Position of the body**

Adopt a seated position with the head resting comfortably on a cushion.
Muscular and circulation conditioning before physical activity

People who regularly practise sports are well aware of the transition, which is often painful, between a rest activity and an occasional physical effort.

The objective of the usual warming-up techniques is to respond to this need to activate progressively the physiological functions involved in one-time physical activity. This physiological need is also very desirable for moderate but unusual physical efforts, as is frequently the case for most of us (treks, biking, jogging, etc.).

The Toning massage programme offers an ideal benefit in the form of optimal muscular and circulation conditioning before any type of physical effort. It allows us to avoid the uncomfortable sensations – usually experienced during the first few minutes of unusual physical efforts – and to limit the secondary consequences of insufficient preparation (aches, etc.).

Recommended programme
Muscular group
Without mI–SENSOR
With mI–SENSOR

Duration of treatment
Use this treatment in the last thirty minutes preceding physical activity

Procedure of treatment
1 session Toning massage on the muscles most subject to stress in the physical activity involved (in this example: the quadriceps)

Placement of electrodes and position of the body
See picture n° 8

Treatment of a localised sensation of heaviness or an occasional state of fatigue

The many stresses of everyday life are often responsible for uncomfortable, or even painful, physical sensations. A circulation slowdown is often the result of insufficient physical activity, frequently aggravated by the need in one's working life to remain in the same position for many hours (in a seated position, for example).

Although not serious, this simple “vascular slowdown” is, however, frequently the cause of unpleasant sensations (for example: a sensation of heaviness, often localised in the lower limbs, but also, at times, in another region of the body).

The Reviving massage programme produces, in the greatest comfort, a reactivation of the blood circulation that allows an acceleration of tissue oxygenation and the elimination of painful sensations, due to insufficient physical effort.

Recommended programme
Muscular group
Without mI–SENSOR
With mI–SENSOR

Duration of treatment
Use this treatment whenever an occasional sensation of heaviness is felt

Procedure of treatment
1 session Reviving massage on the calf and thigh muscles, to be repeated, if necessary, in cases of persistent discomfort

Placement of electrodes and position of the body
See picture n° 25
6. **Pain category**

6.1 Introduction

Physical pain is an abnormal and unpleasant sensation caused by an injury, a disorder or incorrect functioning of a part of our organism. It is a signal sent to us by our body, which should not be ignored, and that in all cases requires us to consult a doctor if it does not disappear quickly.

The approach to pain adopted by the medical profession has changed considerably in recent years. Treatment of the cause is always fundamental, however the pain as such must be otherwise removed or at least considerably reduced and made bearable for the patient. The means to combat pain have developed greatly, and there is no longer any hesitation today in using powerful analgesics to improve the quality of life of patients.

It is within this context that recourse to electrotherapy has developed. Excitation of the nerve fibres of sensation by means of electrical micro-impulses is often the preferred method of combating pain. Today, such analgesic electrotherapy is widely used, particularly in rehabilitation medicine and in specialist pain treatment centres.

The precision of electrical currents allows the analgesic action to be accurately targeted according to the type of pain. It is up to the user to choose the most appropriate programme for the type of pain and to follow practical recommendations in order to obtain maximum effect.

**If the pain is great and/or persistent, you are advised to consult a doctor. Only a doctor can make an accurate diagnosis and put in place therapeutic actions designed to encourage the disappearance of the disorder.**
### 6.2 Table of the pathologies

<table>
<thead>
<tr>
<th>Pathologies</th>
<th>Programmes</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuralgia of the upper limb (brachial neuralgia)</td>
<td>Sophisticated TENS</td>
<td>See application page 120</td>
</tr>
<tr>
<td>Chronic muscular pain (polymyalgia)</td>
<td>Endorphinic</td>
<td>See application page 121</td>
</tr>
<tr>
<td>Contracture (eg: localized contracture in external side of the calf)</td>
<td>Tonomysis</td>
<td>See application page 122</td>
</tr>
<tr>
<td>Chronic muscular pain in the back of the neck (cervical pain)</td>
<td>Cervical pain</td>
<td>See application page 123</td>
</tr>
<tr>
<td>Muscular pain in the thoracic region (thoracic back pain)</td>
<td>Thoracic back pain</td>
<td>See application page 124</td>
</tr>
<tr>
<td>Muscular pain in the low back region (low back pain)</td>
<td>Low back pain</td>
<td>See application page 125</td>
</tr>
<tr>
<td>Muscular pain in the low back region associated with pain in the buttocks and at the back of the thighs (lumbosciatica)</td>
<td>Lumbosciatica</td>
<td>See application page 126</td>
</tr>
<tr>
<td>Sharp and recent muscular pains affecting a muscle in the low back (lumbago)</td>
<td>Lumbago</td>
<td>See application page 127</td>
</tr>
<tr>
<td>Chronic pain in the joints (eg: arthrosis of the knee = gonarthrosis)</td>
<td>Arthralgia</td>
<td>See application page 128</td>
</tr>
<tr>
<td>Chronic elbow pain (epicondylitis = tennis elbow)</td>
<td>Epicondylitis</td>
<td>See application page 129</td>
</tr>
</tbody>
</table>

### 6.3 Table of the Pain programmes

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Effects</th>
<th>Uses</th>
<th>Placement of electrodes</th>
<th>Stimulation energies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sophisticated TENS</td>
<td>Blocks transmission of pain by the nervous system The different treatment sequences avoid the onset of the tolerance phenomenon</td>
<td>All acute or chronic localized pain</td>
<td>On the painful area Try to cover as much of the painful area as possible with the electrodes Depending on the extent of the painful area, generally 2 small electrodes will be used (very localized pain), or 2 large electrodes (more extensive pain), or 4 large electrodes (more diffuse pain) If the automatic transition to the following sequence triggers off tetanic contractions of the stimulated muscles, it is recommended to slightly decrease the stimulation energies</td>
<td>Progressively increase the stimulation energies until a pronounced tickling sensation can be felt under the electrodes</td>
</tr>
<tr>
<td>Endorphinic</td>
<td>Analgesic action through the release of endorphins Increased blood flow</td>
<td>To combat chronic muscular pain</td>
<td>Place 1 small electrode (connected to the positive/red pole) on the most painful point of the muscle and 1 large electrode (connected to the negative/black pole) at the extremity of the muscle See, for example, picture n° 24</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained</td>
</tr>
<tr>
<td>Tonomysis</td>
<td>Reduced muscular tension Relaxing effect</td>
<td>To combat recent and localized muscular pain</td>
<td>Place 1 small electrode (connected to the positive/red pole) on the most painful point of the muscle and 1 large electrode (connected to the negative/black pole) at the extremity of the muscle See, for example, picture n° 24</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained</td>
</tr>
<tr>
<td>Programmes</td>
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<td>Uses</td>
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</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------</td>
<td>-------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Cervical pain</td>
<td>Analgesic action through the release of endorphins</td>
<td>Increased arterial flow</td>
<td>The electrodes connected to the positive poles (red connections) must be placed on the most painful points. The electrodes connected to the negative poles (black connections) must always be placed as shown in the pictures. See picture n° 15.</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained.</td>
</tr>
<tr>
<td>Thoracic back pain</td>
<td>Analgesic action through the release of endorphins</td>
<td>Increased arterial flow</td>
<td>The electrodes connected to the positive poles (red connections) must be placed on the most painful points. The electrodes connected to the negative poles (black connections) must always be placed along the spine above or below the electrodes connected to the positive poles (according to how the pain is spread). See picture n° 13.</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained.</td>
</tr>
<tr>
<td>Low back pain</td>
<td>Analgesic action through the release of endorphins</td>
<td>Increased arterial flow</td>
<td>The electrodes connected to the positive poles (red connections) must be placed on the most painful points. The electrodes connected to the negative poles (black connections) must always be placed along the spine above or below the electrodes connected to the positive poles (according to how the pain is spread). See picture n° 12.</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained.</td>
</tr>
<tr>
<td>Lumbosciatica</td>
<td>Analgesic action through the release of endorphins</td>
<td>Increased arterial flow</td>
<td>The electrode connected to the positive pole (red connection) must be placed on the most painful point. The electrode connected to the negative pole (black connection) must always be placed along the spine above or below the electrode connected to the positive pole (according to how the pain is spread). See picture n° 33.</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained.</td>
</tr>
<tr>
<td>Lumbago</td>
<td>Reduced muscular tension</td>
<td>Relaxing effect</td>
<td>The electrode connected to the positive pole (red connection) must be placed on the most painful point. The electrode connected to the negative pole (black connection) must always be placed along the spine above or below the electrode connected to the positive pole (according to how the pain is spread). See picture n° 32.</td>
<td>Progressively increase the stimulation energies until pronounced muscle twitches are obtained.</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>Blocks transmission of pain by the nervous system</td>
<td></td>
<td>On the painful joint. Try to cover as much of the painful area as possible with the electrodes. Depending on the extent of the painful area, generally 2 small electrodes will be used (small joint, ex: thumb) and 2 large electrodes (ex: wrist) or 4 large electrodes (large joint, ex: knee). See, for example, picture n° 26.</td>
<td>Progressively increase the stimulation energies until a pronounced tickling sensation can be felt under the electrodes.</td>
</tr>
<tr>
<td>Epicondylitis</td>
<td>Blocks transmission of pain by the nervous system</td>
<td>Analgesic current specifically adapted to persistent pain in the elbow</td>
<td>Always keep to the indicated placement and the colour of the connections. See picture n° 36.</td>
<td>Progressively increase the stimulation energies until a pronounced tickling sensation can be felt under the electrodes.</td>
</tr>
</tbody>
</table>

**Programmes Effects Uses Placement of electrodes Stimulation energies**

<table>
<thead>
<tr>
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<th>Effects</th>
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<tr>
<td>Cervical pain</td>
<td>Analgesic action through the release of endorphins</td>
<td>Increased arterial flow</td>
<td>The electrodes connected to the positive poles (red connections) must be placed on the most painful points. The electrodes connected to the negative poles (black connections) must always be placed as shown in the pictures. See picture n° 15.</td>
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<td>Lumbosciatica</td>
<td>Analgesic action through the release of endorphins</td>
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<td>The electrode connected to the positive pole (red connection) must be placed on the most painful point. The electrode connected to the negative pole (black connection) must always be placed along the spine above or below the electrode connected to the positive pole (according to how the pain is spread). See picture n° 33.</td>
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<td>The electrode connected to the positive pole (red connection) must be placed on the most painful point. The electrode connected to the negative pole (black connection) must always be placed along the spine above or below the electrode connected to the positive pole (according to how the pain is spread). See picture n° 32.</td>
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<td>Progressively increase the stimulation energies until a pronounced tickling sensation can be felt under the electrodes.</td>
</tr>
</tbody>
</table>
6.4 Specific applications of the Pain programmes

Neuralgia of the upper limb (brachial neuralgia)

Some people suffer from arthritis in the joints of the vertebrae at the back of the neck, or from arthritis or periartthritis of the shoulder. These situations often give rise to pain that runs down one arm and is known as “brachial neuralgia”. These arm pains that start in the shoulder or the back of the neck can be reduced with the Compex Sophisticated TENS programme by following the practical recommendations outlined below.

Recommended programme
Sophisticated TENS

Muscular group
Without m4-SENSOR  With m4-SENSOR
Selecting this programme automatically activates the muscular group to be treated

Duration of treatment
1 week, then adapt according to how the pain develops
The pain is diminished: continue the treatment until the pain completely disappears
The pain stays the same or gets worse: you are advised to ask for medical advice

Procedure of treatment
1 session Sophisticated TENS a day minimum
According to requirements, the Sophisticated TENS programme can be repeated a number of times during the same day

Placement of electrodes
See picture n° 35
Adapt the position of the electrodes to the area causing the pain
The electrodes must cover as much of the painful area as possible

Position of the body
Settle yourself as comfortably as possible

Chronic muscular pain (polymyalgia)

Some people suffer from muscular pain that affects several muscles or parts of different muscles at the same time. The localization of this chronic pain can vary over time. These continual and diffuse muscle pains are the result of chronic contractures in which acids and toxins accumulate, irritating the nerves and causing pain. The Endorphinic programme is particularly effective against such pain since, in addition to its pain-reducing effect, it increases the blood flow to the contractured muscular groups and removes from them accumulations of acids and toxins.

Example below: localized pain in the biceps.

However, the pain may affect other muscular groups. The practical application illustrated below remains valid, but it is then necessary to place the electrodes on the muscular group concerned.

Recommended programme
Endorphinic

Muscular group
Without m4-SENSOR  With m4-SENSOR

Duration of treatment
4 weeks
You are advised to consult your doctor if no improvement is observed after the first week of use

Procedure of treatment
2 consecutive Endorphinic sessions a day with a 10 minute break between the 2 sessions over the 4 weeks of the treatment

Placement of electrodes
See picture n° 20
The small electrode joined to the red connection is placed on the point of the muscle that is most sensitive to touch; the large electrode joined to the black connection is placed at one extremity of the painful muscle

Position of the body
Settle yourself as comfortably as possible
Contracture

(eg: localized contracture in external side of the calf)

After tiring muscle work, intense training or a sporting competition, certain muscles or certain parts of muscles often remain tense and slightly painful. These are known as muscular contractures which should disappear after a few days with rest, good rehydration, a balanced food intake with mineral salts and application of the Tonolysis programme. The phenomenon of contracture frequently affects the calf muscles, but can also occur with other muscles. In this case, simply follow the same practical recommendations as below, but place the electrodes on the muscular group concerned.

**Recommended programme**

**Tonolysis**

Muscular group

<table>
<thead>
<tr>
<th>Without</th>
<th>With mi-SENSOR</th>
</tr>
</thead>
</table>

*For example calves (select the muscular group affected if the site of the contracture is different)*

Duration of treatment

1 week

You are advised to consult your doctor if no improvement is observed after the first week of use

Procedure of treatment

1 session Tonolysis each day for 1 week

Placement of electrodes

See picture n° 24

The small electrode joined to the red connection is placed on the point of the muscle that is most sensitive to touch; the large electrode joined to the black connection is placed at one extremity of the painful muscle

Position of the body

Settle yourself as comfortably as possible

Chronic muscular pain in the back of the neck

(cervical pain)

Positions in which the muscles of the back of the neck remain tense for long periods of time, for example working in front of a computer screen, may be responsible for the onset of pain in the back of the neck or on either side of the base of the neck, in the upper back. These pains are due to a contracture of the muscles, of which the prolonged tension crushes the blood vessels and prevents the blood from supplying and oxygenating the muscle fibres. If this phenomenon is prolonged, there is an accumulation of acid and the blood vessels atrophy. The pain then becomes continuous or appears after only a few minutes spent working in an unfavourable position.

These chronic pains in the back of the neck can be treated effectively with the Cervical pain programme, which reactivates the circulation, drains accumulations of acid, oxygenates the muscles, develops the capillaries and relaxes the contractured muscles.

**Recommended programme**

**Cervical pain**

Muscular group

| Without | With mi-SENSOR |

*Selecting this programme automatically activates the muscular group to be treated*

Duration of treatment

4 weeks

You are advised to consult your doctor if no improvement is observed after the first week of use

Procedure of treatment

2 consecutive Cervical pain sessions a day with a 10 minute break between the 2 sessions over the 4 weeks of the treatment

Placement of electrodes

See picture n° 15

The small electrodes joined to the red connections are placed on the points of the muscles that are most sensitive to touch; the small electrodes joined to the black connections are placed along the cervical vertebrae

Position of the body

Settle yourself with your head resting comfortably on a cushion
Muscular pain in the thoracic region
(Thoracic back pain)

Vertebral arthritis and positions in which the muscles of the spinal column remain under tension for long periods of time are often responsible for the onset of pain in the middle of the back, which is accentuated with fatigue. Pressure of the fingers on the muscles on either side of the spinal column can often trigger a sharp pain.

These pains are due to a contracture of the muscles, of which the prolonged tension crushes the blood vessels and prevents the blood from supplying and oxygenating the muscle fibres. If the phenomenon is prolonged, there is an accumulation of acid and the blood vessels atrophy. The pain then becomes continuous or can appear after only a few minutes spent working in an unfavourable position.

These chronic back pains can be effectively treated with the Thoracic back pain programme which reactivates the circulation, drains accumulations of acid, oxygenates the muscles, develops the capillaries and relaxes the contracted muscles.

**Recommended programme**

**Muscular group**

- Without M-i-SENSOR
- With M-i-SENSOR

Selecting this programme automatically activates the muscular group to be treated.

**Duration of treatment**

4 weeks

You are advised to consult your doctor if no improvement is observed after the first week of use.

**Procedure of treatment**

2 consecutive Thoracic back pain sessions a day with a 10 minute break between the 2 sessions over the 4 weeks of the treatment.

**Placement of electrodes**

See picture n° 13

The small electrodes joined to the red connections are placed on the points of the muscles that are most sensitive to touch; the small electrodes joined to the black connections are placed along the spinal vertebrae, above the painful spots if the pain is spreading upwards, below the painful spots if the pain is spreading downwards.

**Position of the body**

Settle yourself comfortably in a seated position.

---

Muscular pain in the low back region
(Low back pain)

Low-back pain is the most frequently encountered pain. In a standing position, the entire weight of the trunk is concentrated on the joints between the last vertebrae and the sacrum. The low back region is therefore under particular strain. The discs between the vertebrae are crushed and the low back muscles contractured and painful.

There are very many treatments for the relief of low back pain sufferers; among these, the specific currents of the Compex Low back pain programme provide an appreciable improvement and can even resolve the problem if it is essentially muscular in origin.

**Recommended programme**

**Muscular group**

- Without M-i-SENSOR
- With M-i-SENSOR

Selecting this programme automatically activates the muscular group to be treated.

**Duration of treatment**

4 weeks

You are advised to consult your doctor if no improvement is observed after the first week of use.

**Procedure of treatment**

2 consecutive Low back pain sessions a day with a 10 minute break between the 2 sessions over the 4 weeks of the treatment.

**Placement of electrodes**

See picture n° 12

The small electrodes joined to the red connections are placed on the points of the muscles that are most sensitive to touch; the small electrodes joined to the black connections are placed along the lumbar vertebrae, above the painful spots if the pain is spreading upwards, below the painful spots if the pain is spreading downwards.

**Position of the body**

Settle yourself as comfortably as possible.
Muscular pain in the low back region associated with pain in the buttocks and at the back of the thighs (lumbosciatica)

Low back pain is the most frequent pain. When standing, the entire weight of the trunk is concentrated on the joints between the last vertebrae and the sacrum. The low back region is therefore placed under particular strain. The discs between the vertebrae are crushed and the low back muscles are contracted and painful.

The discs between the last two vertebrae or between the last vertebra and the sacrum frequently become damaged as a result of the pressure of the vertebrae. This damage can give rise to an irritation, or compression, of the nerve roots which exit the spinal column and continue down the buttocks and legs. The pain not only affects the low back, but also runs down the side of one buttock, the back of the thigh and sometimes into the leg. In this case the condition is known as lumbosciatica, for which it is always necessary to consult a doctor, so that the degree of compression of the nerve roots can be assessed and a suitable treatment prescribed.

The specific currents of the Compex Lumbosciatica programme provide an effective treatment against pain, but must always be used as a supplement to other treatments prescribed by your doctor.

<table>
<thead>
<tr>
<th>Recommended programme</th>
<th>Lumbosciatica</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscular group</td>
<td>Without m1-SENSOR</td>
</tr>
<tr>
<td>Selecting this programme automatically activates the muscular group to be treated</td>
<td></td>
</tr>
<tr>
<td>The selection of this programme automatically starts the m1-scan test</td>
<td></td>
</tr>
<tr>
<td>Duration of treatment</td>
<td>4 weeks</td>
</tr>
<tr>
<td>You are advised again to consult your doctor if no improvement is observed after the first week of use</td>
<td></td>
</tr>
<tr>
<td>Procedure of treatment</td>
<td>3 sessions Lumbosciatica a week over the 4 weeks of the treatment</td>
</tr>
<tr>
<td>Placement of electrodes</td>
<td>See picture n° 32</td>
</tr>
<tr>
<td>Always place the electrodes as shown in the picture and follow the colour of the connections (red or black)</td>
<td></td>
</tr>
<tr>
<td>Position of the body</td>
<td>Settle yourself as comfortably as possible</td>
</tr>
</tbody>
</table>

Sharp and recent muscular pains affecting a muscle in the low back (lumbago)

During back movement, for example when lifting something, when turning or when standing up straight after bending down, a sudden pain can be triggered in the low back. Those who suffer from this problem present a contracture of the low back muscles and feel a sharp pain in this region; because they cannot stand completely straight, they remain bent over on one side. All of these symptoms indicate what is known as lumbago, which is principally the result of a sharp and intense contracture of the low back muscles (lumbar region).

In a situation such as this, it is always necessary to consult a doctor to receive appropriate treatment.

In addition to such treatment, the specific Compex Lumbago programme can help effectively to relax the muscles and remove the pain.

<table>
<thead>
<tr>
<th>Recommended programme</th>
<th>Lumbago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscular group</td>
<td>Without m1-SENSOR</td>
</tr>
<tr>
<td>Selecting this programme automatically activates the muscular group to be treated</td>
<td></td>
</tr>
<tr>
<td>The selection of this programme automatically starts the m1-scan test</td>
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<td>Duration of treatment</td>
<td>4 weeks</td>
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<tr>
<td>You are advised again to consult your doctor if no improvement is observed after the first week of use</td>
<td></td>
</tr>
<tr>
<td>Procedure of treatment</td>
<td>3 sessions Lumbago a week over the 4 weeks of the treatment</td>
</tr>
<tr>
<td>Placement of electrodes</td>
<td>See picture n° 33</td>
</tr>
<tr>
<td>The small electrode joined to the red connection is placed on the point of the muscle that is most sensitive to touch; the small electrode joined to the black connection is placed along the lumbar vertebrae, above the painful spot if the pain is spreading upwards, below the painful spot if the pain is spreading downwards</td>
<td></td>
</tr>
<tr>
<td>Position of the body</td>
<td>Settle yourself as comfortably as possible</td>
</tr>
</tbody>
</table>
Chronic pain in the joints
(*eg: arthritis of the knee = gonarthrosis*)

Various factors, such as age, knocks, incorrect body positions, compressions, etc., are bad for the joints. Under the action of these unfavourable factors, the joints deteriorate, and become inflamed and painful. This is known as arthritis, mostly affecting the large joints, such as the hip, the knee or the shoulder. The pain in these joints is called “arthralgia”.

The Compex Arthralgia programme supplies specific currents to combat this type of pain.

The Arthralgia programme does not lead to regeneration of the joint but can be used to supplement treatment prescribed by the doctor, who must always be consulted for this type of pain.

**Recommended programme**

**Muscular group**

Without \textit{Mi-Sensor} & With \textit{Mi-Sensor}  

Selecting this programme & The \textit{Mi-Term} function is active  

automatically activates the muscular group to be treated  

**Duration of treatment**

1 week, then adapt according to how the pain develops  

The pain is diminished: continue the treatment and adapt the frequency of sessions in relation to painful episodes  

The pain stays the same or gets worse: you are advised to ask for medical advice  

**Procedure of treatment**  

**Week 1:**  

1 session Arthralgia a day minimum  

According to requirements, the Arthralgia programme can be repeated a number of times during the same day  

**Week 2 and following weeks:**  

Adapt the number and frequency of Arthralgia sessions in relation to painful episodes  

**Placement of electrodes**

See picture n° 26  

Try to cover as much of the painful joint as possible with the electrodes  

**Position of the body**

Settle yourself as comfortably as possible  

Chronic elbow pain
(*epicondylitis = tennis elbow*)

All tendons of the muscles that allow us to stretch our hand, wrist and fingers end at the small external bone mass of the elbow (epicondyle). Hand and finger movements therefore transmit tensions that are concentrated in the tendon endings at this bone mass.

When hand movements are repetitive, as is the case for painters, tennis players or even those who constantly use the mouse of a computer system, small injuries, accompanied by inflammation and pain, develop in the region of the epicondyle. This is known as “epicondylitis”, which is characterised by pain around the external bone mass of the elbow when pressure is applied or when the forearm muscles are contracted.

The Compex Epicondylitis programme supplies specific current to combat this type of pain. It acts effectively as a supplement to rest.

However, it is necessary to consult your doctor if the pain gets worse or does not disappear quickly after a few sessions.

**Recommended programme**

**Muscular group**

Without \textit{Mi-Sensor} & With \textit{Mi-Sensor}  

Selecting this programme & The \textit{Mi-Term} function is active  

automatically activates the muscular group to be treated  

**Duration of treatment**

1 week, then adapt according to how the pain develops  

The pain is diminished: continue the treatment and adapt the frequency of sessions in relation to painful episodes  

The pain stays the same or gets worse: you are advised to ask for medical advice  

**Procedure of treatment**  

**Week 1:**  

2 sessions Epicondylitis a day minimum  

According to requirements, the Epicondylitis programme can be repeated a number of times during the same day  

**Week 2 and following weeks:**  

1 session Epicondylitis a day  

**Placement of electrodes**

See picture n° 36  

Always place the electrodes as shown in the picture  

**Position of the body**

Place the elbow and forearm comfortably and effectively supported, to relax all the arm muscles
7. Rehabilitation category

7.1 Introduction

The muscular consequences of any pathological problem must be treated by means of specific programmes. Indeed, improving the qualities of a healthy muscle or restoring the potential of a “convalescent” muscle require appropriate work regimes. In order to “redevelop” a convalescent muscle, it is necessary to use the programmes of the Rehabilitation category.

Muscle volume is quickly reduced after trauma to a bone or a joint, particularly if the injury is treated by immobilisation and/or surgical intervention. This muscular atrophy can be much more progressive in the case of a degenerative injury (such as arthrosis, for example), since the reduction of muscle activity then often increases slowly and is superimposed on the developing pathology. The phenomenon of atrophy is accompanied by a reduction of muscle strength; however, these disturbances are the consequence of various alterations at the level of the muscle fibres.

In a rehabilitation process, it is essential, initially, to treat the atrophy (i.e. regain normal muscle volume) before attempting to increase the strength of the muscle using the Reinforcement programme.

The use of programmes of the Rehabilitation category must under no circumstances replace rehabilitation sessions carried out in the presence of the physiotherapist. Although the restoration of initial muscular qualities is a key factor in the process of rehabilitation, other aspects (joint mobility, vigilance, residual pain, etc.) can only be dealt with effectively by a competent health professional.

Some pathologies and some post-operative rehabilitations require special precautions during use; you are therefore always advised to seek the opinion of your doctor or physiotherapist before using any of the programmes of the Rehabilitation category.

Note: Osteosynthesis equipment

The presence of osteosynthesis equipment (metallic equipment in contact with the bone: pins, screws, plates, prostheses, etc.) is not a contra-indication for the use of Compex programmes. The electrical current of the Compex are specially designed to have no harmful effect with regard to osteosynthesis equipment.
Atrophy of the quadriceps as a result of trauma

The quadriceps is a voluminous muscle located in the anterior part of the thigh. It is the main muscle that allows you to stretch the knee; its role is therefore essential for walking, running, climbing stairs, etc. Any trauma affecting a lower limb therefore results in a wasting of this muscle, the reduction of muscle volume being more or less serious depending on the duration of the period of inactivity.

This atrophy is normally spectacular when it occurs after trauma to the knee, particularly if the trauma was treated by means of surgical intervention.

The programmes of the Rehabilitation category are specifically designed to treat the deterioration of muscle fibres that results from such a process. The progressiveness of the work imposed by the different recommended programmes is decisive in obtaining optimum results.

**Recommended programmes**

**Disuse atrophy.**

- **Muscle growth**
  - Increased diameter and capacity of muscle fibres damaged during under-activity or inactivity imposed by some kind of pathological problem
  - Restoration of muscle volume

**Muscle growth**

- Increased diameter and capacity of muscle fibres damaged during under-activity or inactivity imposed by some kind of pathological problem
- Restoration of muscle volume

**Reinforcement**

- Increase the strength of a muscle previously atrophied
- Increase the strength of a muscle affected by a pathological process, but not atrophied

**Placement of electrodes and position of the body**

- See picture n° 7

**Recommended programmes**

**Disuse atrophy.**

**Muscle growth**

**Reinforcement**

**Duration of treatment**

**Procedure of treatment**

- **Weeks 1-2:** 1 session **Disuse atrophy** a day
- **Weeks 3-8:** 1 session **Muscle growth** a day
- **Weeks 9-10:** 1 session **Reinforcement** a day

**Placement of electrodes and position of the body**

- See picture n° 7
Atrophy of the gluteus as a result of arthrosis of the hip (coxarthrosis)

The pain and stiffening that result from osteoarthrosis of the hip normally lead to under-utilisation of the buttock muscles, causing a reduction of the volume and quality of these muscles.

The main effect of this atrophy is to produce instability of the pelvis, which causes limping and accentuates the pain by increasing the pressures supported by the joint. Lesions affecting the cartilage unfortunately remain irreversible. However, a remedy for atrophy of the gluteus makes it possible to improve the stability of the joint and therefore make the hip less painful by allowing it to maintain a satisfactory mechanical function.

Recommended programmes

Muscular group
Without m-SENSOR With m-SENSOR

Duration of treatment
10 weeks

Procedure of treatment
Weeks 1-2: 1 session Disuse atrophy a day
Weeks 3-8: 1 session Muscle growth a day
Weeks 9-10: 1 session Reinforcement a day

Maintenance
Week 11 and following weeks: 1 session Reinforcement a week

Placement of electrodes and position of the body
See picture n° 9

Development of the latissimus dorsi to treat and prevent tendinous shoulder pain (rotator cuff syndromes)

The shoulder is a complex joint enabling us to make broad gestures (for example, raising our arms in the air). During some of these movements, the tendons in the shoulder can rub against or be compressed against bony fragments of the joint. When this phenomenon is repeated, or occurs in certain people who have an unfavourable anatomic constitution, such damage to the tendons causes them to become inflamed and thicker, resulting in a considerable increase in their degree of compression. The pain often then becomes very severe, preventing all movement of the shoulder; it can even set in at night and cause serious sleep deprivation.

Appropriate medical treatment can only be put in place by consulting a doctor. However, electrostimulation of the latissimus dorsi by means of specific Compex programmes can reduce the distress to which tendons are subjected by increasing their freedom of movement around the shoulder joint.

Recommended programmes

Muscular group
Without m-SENSOR With m-SENSOR

Duration of treatment
6 weeks

Procedure of treatment
Weeks 1-2: 1 session Disuse atrophy a day
Weeks 3-6: 1 session Muscle growth a day

Maintenance
Week 7 and following weeks: 1 session Muscle growth a week

Placement of electrodes and position of the body
See picture n° 18
Development of the abdominal muscles to prevent pain in the lumbar region

(low back pain)

Low back pain arises most frequently among persons who do not have sufficient musculature in the abdominal region.

These muscles in fact represent a veritable natural “corset”, the role of which is to protect the low back region from excessive stress of all kinds. This is why it is referred to as the abdominal “belt”. After a bout of lumbago, when the pain has stopped (see section “Pain category” in chapter V of this manual), a common recommendation is to improve the efficiency of the abdominal and back muscles to prevent any recurrence. The Disuse atrophy programme imposes a large amount of work on the abdominal muscles, without requiring the harmful or even dangerous positions often adopted when voluntary exercises are carried out incorrectly. Abdominal muscles that have greater strength and endurance can then satisfactorily fulfil their role of protecting the low back region.

The Mi-ACTION mode is particularly suitable for the Disuse atrophy programme.

**Recommended programme**

**Muscular group**

Without Mi-sensor | With Mi-sensor

**Duration of treatment**

4 weeks

**Procedure of treatment**

Weeks 1-4: 1 session Disuse atrophy a day

**Maintenance**

Week 5 and following weeks: 1 session Disuse atrophy a week

**Placement of electrodes and position of the body**

See picture n° 10

Development of the low back muscles to prevent pain in the lumbar region

(low back pain)

Like the muscles of the abdominal region, the muscles of the low back (lumbar muscles) also play a role in protecting the low back region. Persons whose low back muscles are inadequately effective are particularly prone to low back pain. Once the pain in the low back has disappeared, persons are often advised to strengthen the low back muscles with a view to preventing the recurrence of painful episodes. However, carrying out voluntary back exercises often presents serious difficulties for persons who suffer from low back pain. That is why electrostimulation of the low back muscles using the Disuse atrophy programme is one of the preferred methods to improve the efficiency of these muscles.

The Mi-ACTION mode is particularly suitable for the Disuse atrophy programme.

**Recommended programme**

**Disuse atrophy**

**Muscular group**

Without Mi-sensor | With Mi-sensor

**Duration of treatment**

4 weeks

**Procedure of treatment**

Weeks 1-4: 1 session Disuse atrophy a day

**Maintenance**

Week 5 and following weeks: 1 session Disuse atrophy a week

**Placement of electrodes and position of the body**

See picture n° 14
Strengthening of the lateral peroneus muscles after ankle sprain

The purpose of the lateral peroneus muscles is to maintain the stability of the ankle joint and prevent it from rotating inwardly. After a sprain, these muscles lose their reflex-contraction capacity together with much of their strength. Regaining competent lateral peroneal muscles after a sprain is a fundamental step, without which recurrence is very probable. To do their job correctly, the lateral peroneals must be strong enough to prevent the foot twisting inwards, but they must also contract reflexively at the precise moment when the heel tilts inwards. To develop both of these aspects, strength and speed of contraction, you should use the Reinforcement programme, which produces efficient lateral peroneal muscles and therefore helps to prevent recurrence.

The mi-Action mode is particularly suitable for the Reinforcement programme.

### Recommended programme

**Muscular group**

- Without mi-sensor
- With mi-sensor

**Duration of treatment**

4 weeks

**Procedure of treatment**

Weeks 1-4: 1 session Reinforcement a day

**Maintenance**

If you take part in a dangerous sporting activity:

Week 5 and following weeks: 1 session Reinforcement a week

**Placement of electrodes and position of the body**

See picture n° 2

1. Placements of electrodes

A stimulation cable consists of two poles:

- a positive pole (+) = red connection
- a negative pole (-) = black connection

A different electrode must be connected to each of the two poles.

**Note:** It is important to place the electrodes correctly to the cable connectors; in order to do so, press strongly the connector to the electrode until you hear a double click.

Depending on the characteristics of the current used for each treatment, the electrode connected to the positive pole (red connection) is more effective when placed in a "strategic" position, specified for each application in this manual.

For all muscle electrostimulation treatments, i.e., treatments involving muscle contractions, it is important to place the positive polarity electrode on the muscle motor point.

For the Tonolysis and Endorphinic programmes in the Pain category (with the exception of TENS type treatments), the preferential location of the positive polarity electrode is the most painful point (trigger), which should be located through palpation of the painful muscle.

In all cases, always keep to the size (large or small) of electrodes shown in the pictures. Unless you have other specific medical instructions, always follow the placement directions in the pictures. If necessary, find the best position by slightly moving the positive polarity electrode so as to obtain the best muscle contraction or the position that seems most comfortable.

The mi-sensor system of the specific electrode cable corresponds to the positive polarity (red connection). To obtain the best results, the mi-sensor system should always be positioned according to the indications of the pictures in the specific applications and at the end of the manual. The position of the mi-sensor system is clearly indicated by a circle (  ).

Compex Group disclaims all responsibility for electrodes positioned in any other manner.
2. Stimulation positions

Position yourself comfortably in the position shown in the pictograms next to the electrode placement pictures at the beginning of the specific applications and at the end of the manual.

For most of the programmes involving powerful muscular contractions, the muscle, which must not be in a shortened position, should always be stimulated in an isometric fashion. Otherwise, a contraction on a shortened muscle will cause cramp pains and serious stiffness after the session. For these programmes and to work comfortably and safely, you should fix the extremities of your limbs firmly. In this way, you provide maximum resistance to the movement and prevent any shortening of the muscle during the contraction.

For the other types of programmes (for example, the programmes included in the Vascular, Massage and Pain categories and the Active recovery programme), which do not involve powerful muscular contractions, position yourself as comfortably as possible.