I-TECH
MEDICAL DIVISION

USER MANUAL

MNPG148 Rev. 0 16/07/14

Electrotherapy model

MIO-CARE PRO

Summary

Summary **3**

Technical Specification **4**
Manufacturer 4
Declaration of Conformity 4
Specifications 4
Purpose 4
Technical features 5
Labels detail 7
Symbols description 8
Kit contents 8

How to use **8**
Warnings 8
Electromagnetic interference 9
Contraindications 9
How to use 9
TENS 10
Programs 11
Programs Technical Specifications 12

Maintenance **29**
Battery charging 29
Battery replacement 29
Cleaning 30
Carriage and storage 30
Disposal 30
Troubleshooting 30
Assistance 30
Spare sparts 31
Warranty 31

Manufacturer

I.A.C.E.R. S.r.l.

Via S. Pertini, 24/a • 30030 Martellago (VE)

Tel. 041.5401356 • Fax 041.5402684

IACER S.r.l. is an Italian medical devices manufacturer (CE medical certificate n° MED24021 issued by Cermet notified body n°0476).

Declaration of Conformity

IACER S.r.l., headquartered in Italy, via S. Pertini 24/A 30030 Martellago (VE), declares on its own responsibility that MIO-CARE PRO is manufactured in conformity with Directive 93/42/EEC (MDD) dated 14 June 1993 (D. Lgs. 46/97 dated 24 February 1997 "Attuazione della Direttiva 93/42/CEE concernente i dispositivi medici), Annex II as modified by Directive 2007/47/CE dated 5 September 2007 (D. Lgs. 37/2010 dated 25 January 2010).

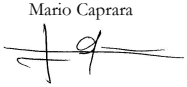
Notified body: Cermet, Via di Cadriano 23 – 40057 Cadriano di Granarolo (BO) Italy.

MIO-CARE PRO is a Class IIa equipment, with reference to Directive 93/42/EEC (MDD), annex IX rule 9 (and following modifications).

Certification Path: Annex II

Martellago, 01/07/2014

Legal Rappresentative
Mario Caprara



Specifications

MIO-CARE PRO has the following specifications:

- Class IIa equipment (Directive 93/42/CEE, Annexed IX, rule 9 and following modifications);
- Class II applied part type BF (Classif. CEI EN 60601-1);
- Equipment not protected against liquid penetration;
- Equipment and accessories not subjected to sterilization;
- Use of the equipment is prohibited close to flammable substances when mixed with air or with oxygen or with nitrous oxide;
- Continuous operating mode equipment;
- Equipment not suited to be used in external.

Purpose

Clinical purpose:	Therapeutic
Use:	Clinic/Hospital and domestic use

MIO-CARE PRO is indicated for the treatment and the functional rehabilitation of the following pathologies and anatomical zones:

- wrist articulation
- hand articulation
- shoulder articulation
- foot articulation
- ankle articulation
- knee articulation
- skeletal motor apparatus
- arthrosis
- atrophies and muscular dystrophy
- bruises
- sprains
- neuralgias
- benign lesions and muscular tears
- tendinitis

Thanks to its TENS protocols, MIO-CARE PRO is particularly indicated for pain therapy.
TENS impulses reduce significantly and eliminate the pain sensation caused by the pathologies above mentioned.

MIO-CARE PRO is provided also with NEMS protocols for muscle rehabilitation and training, for trauma and muscle tropism recovery.

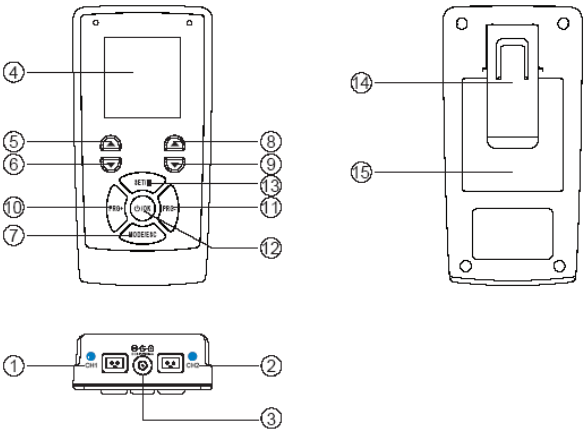
BEAUTY protocols are indicated for modelling, firming up and muscle toning up with aesthetic purposes.

Technical features

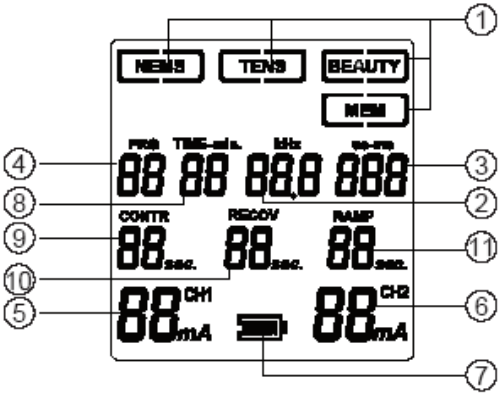
Power supply	Rechargeable batteries 4,8V 800mAh
Charger	Input 100/240VAC 50/60Hz 0.2A, output 6.8VDC 0.3A
Insulation class (CEI EN 60601-1)	II
Applied part (CEI EN 60601-1)	BF
Dimensions (length. x width .x height.) (mm)	140x70x30
Max output current	99mA, 1KΩ load each channel for all programs
Waveform	Biphasic compensated square wave
Frequency (Hz)	From 0.25 to 200
Width impulse (μs)	From 20 to 450
Timer	From 1 to 90 minutes

WARNING. The equipment delivers current in excess of 10 mA.

Labels



(1) CH1 output
(2) CH2 output
(3) Battery charger connector
(4) Display
(5) Increase intensity CH1
(6) Decrease intensity CH1
(7) Mode operation button
(8) Increase intensity CH2
(9) Decrease intensity CH2
(10) Increase program
(11) Decrease program
(12) ON/OFF and OK button
(13) Set programs and therapy pause button
(14) Belt clip
(15) Battery compartment



(1) Mode operation (NEMS, TENS, BEAUTY, MEM)

(2) Wave frequency

(3) Wave impulse width

(4) Program number

(5) CH1 intensity

(6) CH2 intensity

(7) Battery status

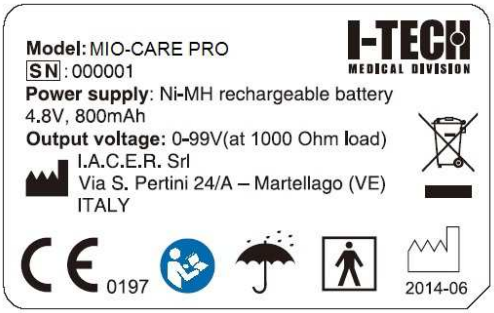
(8) Therapy time

(9) Contraction time

(10) Recovery time

(11) Up/down slope

Labels detail



Symbols description

	Keep dry. Avoid liquid contact.
	Product subject to WEEE regulations concerning separate waste collection of electronic equipment
	Refers to operating instructions
	Internally powered device with type BF applied parts
CE 0476	Produced in compliance with the 93/42/EEC (and following modifications.)
	Manufacturing date (month/year)

Kit contents

n° 1 MIO-CARE PRO device;
n° 1 battery pack;
n° 2 two connection cables, for the transmission of electric impulses;
n° 4 wo splitting leads, for doubling the area covered by the electrodes;
n° 1 packages containing 4 pre-gelled self-adhesive 41x41 mm electrodes (or 48x48mm);
n° 1 packages containing 4 pre-gelled self-adhesive 40x80 mm electrodes (or 50x90mm);
n° 1 belt clip;
n° 1 carriage bag;
n° 1 user manual.

How to use

Warnings

- Take care of position and meaning of the labels on MIO-CARE PRO;
- Do not damage the connection cables and avoid to roll up the cables around the device;
- Check the device and its accessories before use. Avoid the use in case of damage to the case or to the accessories (damaged cables): contact the manufacturer as mentioned in "Assistance" paragraph;
- Avoid the use of MIO-CARE PRO to people not educated through the reading of the manual;
- Avoid the use of MIO-CARE PRO in damp environments;
- Do not wear metallic objects during therapy;
- It is forbidden to position the electrodes in such a way that the current crosses the heart area (e.g. a black electrode on the chest and a red electrode on the shoulder blade);
- Use of the device is prohibited with electrodes positioned on or close to injuries or cuts;
- The electrodes must not be positioned on the carotid sinuses (carotid) or genitals;
- The electrodes must not be positioned close to the eyes; make sure that the current delivered does not cross the eyeball (one electrode diametrically opposite to the other in relation to the eye); keep a distance of at least 3 cm. from the eyeball;
- Insufficiently sized electrode sections can cause skin reactions or burns;
- Do not use electrodes when damaged, even if they stick to the skin well;
- Use only cables and electrodes supplied by device manufacturer;
- Electrodes must not be used when they no longer stick to the skin. Repeated use of the same electrodes can compromise the safety of the stimulation, in fact it can cause skin redness that can last for many hours after stimulation.

The manufacturer is responsible of the performances, safety and integrity of the device only if:

- Eventual additions, modifications and/or reparations are performed by authorized personnel;
- The electrical system is in compliance with the national laws;
- The device is used in compliance with the instructions of the user manual.

Electromagnetic interference

The device does not produce and receive any interferences from others equipment. However it is recommended the use of the device at least 3 metres away from televisions, monitors, mobile phones or any other electronic equipment.

Contraindications

Patient in pregnancy, tuberculosis, juvenile diabetes, viral (in acute phase) illnesses, mycosis, dermatitis, cardiopathic subjects, tumours, serious arrhythmias or pacemaker carriers, children, metallic prosthesis carriers, acute infections, open wounds, epileptics (different medical prescriptions excepted).
No significant side effects are known of. Some particularly sensitive people could report skin redness in the area where the electrodes were positioned: the redness usually disappears a few minutes after the end of the treatment. Should the redness persist please consult a doctor.
In rare cases, evening stimulation carried out in the evening can cause some people to experience difficulty in falling asleep. If this occurs, suspend the evening treatment.

How to use

MIO-CARE PRO is a portable and battery-powered device that generates TENS and NEMS currents. It is particularly indicated for daily treatments of the most commons muscle diseases. MIO-CARE PRO is provided with two independent and adjustable intensity channels.
MIO-CARE PRO has 14 preadjusted TENS programs, 21 preadjusted NEMS programs, 15 preadjusted BEAUTY programs and 12 free memories adjustable by the user to create programs according to his needs. The program MEM 13 is a battery test.

PRELIMINARY INSTRUCTIONS

1. CABLES AND ELECTRODES CONNECTION
   Position the electrodes on the skin (see the following paragraph), connect the electrostimulation cable jacks to the self-adhesive electrodes and then connects the cables to the outputs on the upper side of MIO-CARE PRO;
2. SWITCHING ON OF THE DEVICE
   Turn MIO-CARE on using the ⏻/OK button;

PREADJUSTED PROGRAMS

Read the follow instructions to use the preadjusted programs of MIO-CARE PRO.

1. MENU AND PROGRAM SELECTION
   Select the menu by pressing MODE button (TENS, REHA, MEM).
   Select the program using PRG+ and PRG+ buttons (please make reference to "Programs list" to get all technical specifications);
2. INTENSITY SELECTION
   You can increase current intensity using CH1 and CH2 buttons (up-arrow). The value can be adjusted with stepping of 1 mA. Press CH1 and CH2 buttons (down-arrow) to decrease the intensity.
   MIO-CARE PRO recognize the electrodes connection: in case of faulty connection, when the intensity reaches 10 mA the value is resetted to zero.
   The remaining time is showed on the display of MIO-CARE PRO. An acoustic signal advises the user when the treatment is completed.

Press the SET/II button to pause the treatment. To restart the program press ⏻/OK button.

Turn off the device keeping pressed the ⏻/OK button for at least two seconds.
The device automatically switches off when no button is pressed for 2 minutes.

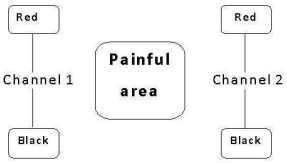
FREE MEMORIES (ADJUSTABLE PROGRAMS)

With MIO-CARE PRO you can set the parameters according to your needs using the MEM programs. Read the following instructions to adjust the parameters.

1. PROGRAM SELECTION
   Select MEM by pressing MODE/ESC button. Scroll the programs using PRG+ and PRG- buttons. Read the following instructions to adjust the program parameters (time, frequency and width impulse);
2. PARAMETERS ADJUSTEMENT
   - Adjust therapy time TIME-min pressing ▲(increase) and ▼(decrease) CH1 or CH2 buttons;
   - Press SET to confirm;
   - Adjust frequency Hz pressing ▲(increase) and ▼(decrease) CH1 or CH2 buttons;
   - Press SET to confirm;
   - Adjust width impulse us pressing ▲(increase) and ▼(decrease) CH1 or CH2 buttons;
   - Press OK to confirm;
3. INTENSITY ADJUSTEMENT
   Increase intensity current of two channels using CH1 and CH2 ▲ buttons. The value can be adjusted with 1mA stepping. Decrease the intensity pressing ▼ buttons.

TENS

In TENS programs the intensity should be adjusted to a level between the thresholds of perception and pain: the maximum intensity level is the moment in which the muscles surrounding the area treated begin to contract. It is suggested to stop before that point.
The electrodes should be positioned to form a square surrounding the painful area using Channel 1 and Channel 2 as shown in illustration 1.



⚠ WARNING

Create a square area with the electrodes, over the painful zone. Keep 4cm minimum distance between electrodes.

Programs

TENS		BEAUTY		NEMS		MEM	
1	Conventional Tens (fast)	1	Firming up – upper limbs and trunk	1	Warming up	1	Free TENS 1
2	Endorphinic Tens (delayed)	2	Firming up – lower limbs	2	Resistance – upper limbs and trunk	2	Free TENS 2
3	Tens at maximum values	3	Toning up – upper limbs and trunk	3	Resistance – lower limbs	3	Free TENS 3
4	Anti-inflammatory	4	Toning up – lower limbs	4	Resistant strength – upper limbs and trunk	4	Free TENS 4
5	Neck pain/headache	5	Definition – upper limbs and trunk	5	Resistant strength – lower limbs	5	Free TENS 5
6	Backache/sciatic pain	6	Definition – lower limbs	6	Basic strength – upper limbs and trunk	6	Free NEMS 1
7	Sprains/bruises	7	Modelling	7	Basic strength – lower limbs	7	Free NEMS 2
8	Vascularization	8	Microlifting	8	Fast strength – upper limbs and trunk	8	Free NEMS 3
9	Muscle relaxant	9	Lipolysis – abdomen	9	Fast strength – lower limbs	9	Free NEMS 4
10	Hand and wrist pain	10	Lipolysis – thighs	10	Explosive strength – upper limbs and trunk	10	Free NEMS 5
11	Plantar stimulation	11	Lipolysis - glutei and hips	11	Explosive strength – lower limbs	11	Alternated NEMS 1
12	Epicondylitis	12	Lipolysis – arms	12	Deep capillarization	12	Alternated NEMS 2
13	Epitroclea	13	Tissue elasticity	13	Muscle recovery	13	Battery test
14	Periarthritis	14	Capillarization	14	Agonist-antagonist		
		15	Heaviness in legs	15	Sequential tonic contractions – upper limbs and trunk		
				16	Sequential tonic contractions – lower limbs		

				17	Sequential phasic contractions – upper limbs and trunk		
				18	Sequential phasic contractions – lower limbs		
				19	Muscle relaxant		
				20	Deep massage		
				21	EMS		

Programs Technical Specifications

TENS programs

Prg.	PHASE 1	PHASE 2	PHASE 3
T1	Total time 40 min frequency 90 Hz impulse width 50µs		
T2	Total time 30 min frequency 1 Hz impulse width 200µs		
T3	Total time 3 min frequency 150 Hz impulse width 200µs		
T4	Total time 30 min frequency 120 Hz impulse width 50µs		
T5	Total time 20 min frequency 90 Hz impulse width 60µs	Total time 5 min frequency 2 Hz impulse width 150µs	Total time 10 min frequency 90 Hz impulse width 60µs
T6	Total time 20 min frequency 90 Hz impulse width 50µs	Total time 20 min frequency 60 Hz impulse width 60µs	
T7	Total time 10 min frequency 110 Hz impulse width 50µs	Total time 10 min frequency 90 Hz impulse width 50µs	Total time 10 min frequency 70 Hz impulse width 60µs
T8	Total time 20 min frequency 2 Hz impulse width 200µs		
T9	Total time 10 min frequency 4 Hz impulse width 250µs	Total time 10 min frequency 6 Hz impulse width 200µs	Total time 10 min frequency 2 Hz impulse width 300µs
T10	Total time 15 min frequency 70 Hz impulse width 60µs	Total time 15 min frequency 90 Hz impulse width 50µs	Total time 10 min frequency 110 Hz impulse width 50µs
T11	Total time 15 min frequency 70 Hz impulse width 60µs	Total time 15 min frequency 2 Hz impulse width 150µs	Total time 10 min frequency 90 Hz impulse width 50µs
T12	Total time 20 min	Total time 10 min	Total time 10 min

	frequency 90 Hz impulse width 50µs	frequency 70 Hz impulse width 60µs	frequency 50 Hz impulse width 90µs
T13	Total time 20 min frequency 90 Hz impulse width 50µs	Total time 20 min frequency 70 Hz impulse width 60µs	
T14	Total time 1 min frequency 150 Hz impulse width 200µs	Total time 30 min Frequency 90 Hz impulse width 60µs	Total time 10 min: (3Hz-200µs x 7sec 50%+ 1Hz 200µs x 3 sec 60% + 30Hz-200µs x 5 sec 50%) x 40 cycles

TENS 1 • Conventional TENS

Program used for analgesic purposes; its purpose is to induce the organism into blocking pain at the spine, in accordance with the "Gate Control Theory" by Melzack and Wall. Pain impulses leave part of the body (for example the hand) and run along the nerve tracts (through small-diameter nerve fibres) until they reach the central nervous system where the impulses are interpreted as pain. Conventional tens activates large-diameter nerve fibres, blocking the path of small-diameter nerve fibres at the spine. So action is mainly taken against the symptom: to simplify it further, the wire transmitting pain information is obstructed.

Treatment duration should be no less than 30/40 minutes. Conventional tens is a current that can be used to treat general everyday pain. The average number required to benefit from the treatment is 10/12 per day (there are no contraindications for up to double this amount).

The program has a duration of 40 minutes in a single phase. The program can be repeated at the end of the session for particularly persistent pain. The nature of the impulse means that the patient may experience an "addictive" effect due to which the impulse will be felt less and less: if necessary the intensity can be increased by one level to counter this effect.

Position of electrodes: form a square above the painful area as shown in illustration 1.

TENS 2 • Endorphinic TENS

This type of stimulation produces two types of effects according to how the electrodes are positioned: positioning the electrodes in the dorsal region, see photo 08 in the positions manual, promotes the endogenous production of morphine-like substances capable of raising the pain perception threshold; positioning the electrodes to form a square above the painful area as shown in illustration 1 produces a vascularizing effect. Vascularization increases arterial flow and consequently aids the removal of algogenic substances and helps to restore normal physiological conditions.

Treatment duration 30 minutes in a single phase, daily frequency.

Do not position the electrodes close to inflamed areas.

Intensity adjusted for good solicitation of the part stimulated, the sensation must be similar to that of a massage.

TENS 3 • TENS at maximum values

Very short duration, 3 minutes. Blocks pain impulses peripherally creating a proper anaesthetising effect in the area treated. This type of stimulation is suitable for injuries or bruises when rapid action is required. The intensity selected is the maximum tolerable value (well in excess of conventional tens, and therefore with considerable contraction of the muscles surrounding the area treated). That is the reason why such stimulation is undoubtedly the least tolerated but is extremely effective. This type of stimulation is not recommended for particularly sensitive people and in any case the electrodes should not be positioned in sensitive areas such as the face and genitals or close to wounds.

Position of electrodes: form a square above the painful area as shown in illustration 1.

TENS 4 • Anti-inflammatory

Program recommended for inflammatory conditions. To be applied until the inflammatory state is lessened (10-15 applications, once a day; the daily treatments can be doubled if required). Identify the area to be treated and position the electrodes as shown in illustration 1. Adjust the intensity until a tingling feeling is produced in the area treated; avoid contracting the surrounding muscles.

Program duration: 30 minutes.

TENS 5 • Neck pain / Headache

Specific program for the treatment of pain in the neck area.

The intensity should be adjusted to a level between the thresholds of perception and pain: the maximum intensity level is the moment in which the muscles surrounding the area treated begin to contract; over this limit stimulation does not become more effective, just more irritating, so it is best to stop before that point. The first benefits can be seen after 10 to 12 treatments carried out on a daily basis; proceed with the treatment until the symptoms pass. Position of electrodes: photo 25.

Warning: the device varies stimulation parameters during the program. The current may feel different: this is perfectly normal and is envisaged by the software: raise or lower the intensity according to your own sensitivity to reach a level of stimulation that is comfortable for you.

TENS 6 • Backache/Sciatic pain

Specific program for the treatment of pain in the lumbar area or along the sciatic nerve, or both. The intensity should be adjusted to a level between the thresholds of perception and pain: the maximum intensity level is the moment in which the muscles surrounding the area treated begin to contract; over this limit stimulation does not become more effective, just more irritating, so it is best to stop before that point. The first benefits can be seen after 15 to 20 treatments carried out on a daily basis; proceed with the treatment until the symptoms pass. Program duration: 40 minutes.

Position of electrodes: see photo 27 and 28 in the manual of positions.

TENS 7 • Sprains / Bruises

The program develops its effectiveness after this type of injury by inhibiting pain locally, producing three selectively acting, differentiated impulses. The intensity should be adjusted to a level between the thresholds of perception and pain:

Number of treatments: until pain is lessened, on a daily basis (even 2/3 times a day).

TENS 8 • Vascularization

Has a vascularizing effect on the area treated. Vascularization increases arterial flow and consequently aids the removal of algogenic substances and helps to restore normal physiological conditions. Do not position the electrodes close to inflamed areas.

Daily application is recommended, the number of applications is not defined; the program can be used to reduce pain.

Stimulation intensity should be between the thresholds of perception and slight discomfort.

Program duration: 20 minutes.

Position of electrodes: see photo 25 and 33 in the manual of positions.

TENS 9 • Muscle relaxant

Program used to speed up the recovery of muscle function after intense training or strain from work; the effect is immediate. Adjust the intensity for moderate muscle solicitation. Two treatments per day for three or four days. Program duration: 30 minutes. Position of electrodes: from photo 1 to 28.

TENS 10 • Hand and wrist pain

This program is suitable for all types of hand and wrist pain: aching caused by strains, arthritis in the hand, carpal tunnel syndrome, etc. Total program duration: 40 minutes. A combination of various types of square-wave impulses has a general analgesic effect on the area to be treated (impulses at different frequencies stimulate different sized nerve fibres promoting an inhibitory action at spinal level). The intensity should be adjusted to a level between the thresholds of perception and pain, without causing muscle contraction:

Position of electrodes: form a square above the area to be treated as shown in illustration 1.

TENS 11 • Plantar stimulation

This program has a relaxing and draining effect on the limb stimulated. It is ideal for people suffering from a sense of "heaviness in the legs".

Duration: 40 minutes. Intensity: just above the threshold of perception.

Position of electrodes: 2 electrodes (one positive, the other negative) on the sole of the foot, one close to the toes, the other under the heel.

TENS 12 • Epicondylitis

Also known as "tennis elbow", it is an insertional tendinopathy concerning insertion of the elbow bone into the epicondylar muscles, those enabling finger and wrist extension (bending backwards). 15 applications once a day (even twice), until the symptoms pass. We recommend that you consult your doctor to identify the precise cause of the pain in order to prevent the condition from reoccurring.

Program duration 40 minutes, intensity adjusted above the threshold of perception.

Position of electrodes: photo 29.

TENS 13 • Epitroclea

Also known as "golfing elbow", it affects golfers but also those who carry out repetitive tasks or tasks involving frequent intense strain (for example carrying a particularly heavy suitcase). It causes pain in the flexor and pronator tendons inserted in the epitroclea. Pain is felt when bending or straightening the wrist against resistance, or when clenching a hard rubber ball in the hand. 15 applications once a

day (even twice), until the symptoms pass. We recommend that you consult your doctor to identify the precise cause of the pain in order to prevent the condition from reoccurring.

Program duration 40 minutes, intensity set above the threshold of perception.

Position of electrodes: photo 29 but with all of the electrodes positioned on the inside of the arm (with a rotation of about 90°).

TENS 14 • Periarthritis

Scapulo-humeral periarthritis is an inflammatory condition affecting the fibrous tissues surrounding joints: tendons, serous sacs and connective tissue. These appear altered and can break into fragments and calcify. If neglected, this condition can become heavily crippling. For this reason, after carrying out a cycle of 15/20 applications once a day, we recommend that you consult your doctor for a cycle of specific rehabilitation exercises to reduce the pain.

The Tens17 program consists of various phases including Tens and muscle stimulation aimed at improving the tone of the muscles surrounding the joint.

Program duration 41 minutes, intensity set above the threshold of perception with small muscle contractions at the end of the program (10 minutes before the end).

ARTHROSIS

Arthrosis is a chronic-degenerative medical condition, appearing insidiously, developing over time and causing progressive degeneration of the joints (a joint is formed of two or more joint "heads", cartilage, ligaments, a synovial membrane, a joint capsule, tendons and muscles), limiting joint motility increasingly over time. Arthrosis mainly causes progressive deterioration of cartilage (which is not capable of re-forming) and bone, with secondary deformation of the same, and production of excrescences, called "osteophytes", which mechanically obstruct joint movement; it also causes the joint capsule to thicken and stiffen, which together with contraction of the muscles surrounding the joint limits the "joint excursion" even further.
Tens therapy can lessen the pain caused by this condition, but cannot cure it!
Tens (Tens 1) can be combined with stimulation of the area to be treated using a low-frequency current (Tens 2) to relax the surrounding muscles.

Pathology	Program	No. of treatments	Treatment frequency	Position of electrodes
Arthrosis	TENS 1+ TENS 2	Until pain is lessened	Daily (TENS1 up to 2/3 times a day, TENS 2 once a day)	On the painful area
Neck pain	TENS 5	10/12	Daily, even twice a day	Photo 25
Cervicogenic headache	TENS 5	10/12	Daily, even twice a day	Photo 25
Back pain	TENS 6	10/12	Daily	Photo 25 but with all electrodes placed 10 cm lower
Backache	TENS 6	12/15	Daily	Photo 27
Sciatic pain	TENS 6	15/20	Daily, even twice a day	Photo 28
Cruralgia	TENS 6	15/20	Daily, even twice a day	Photo 18 with all electrodes placed on the inside of the thigh

Epicondylitis	TENS 15	15/20	Daily, even twice a day	Photo 29
Hip pain	TENS 1	10/20	Daily, even twice a day	Photo 30
Knee pain	TENS 1	10/20	Daily, even twice a day	Photo 31
Ankle sprain	TENS 3	5/7	Daily, up to 2/3 times a day	Photo 32
Carpal tunnel syndrome	TENS 1	10/12	Daily, even twice a day	Photo 33
Trigeminal neuralgia	TENS 18	10/12	Daily	Photo 24
Wryneck	TENS 1 + TENS 9	8/10	Daily, even twice a day	Photo 25
Periarthritis	TENS 17	15/20	Daily	Photo 26

Important: for all of these programs, stimulation intensity must be set between the threshold of impulse perception and the moment in which the impulse starts to cause discomfort. With the exception of the "periarthritis" program, the muscles surrounding the area to be treated must not contract, they should only produce slight "vibrations".

BEAUTY Programs

Prg.	PHASE 1	PHASE 2	PHASE 3
B1	Total time 4 min frequency 6 Hz impulse width 200µs	Total time 15 min: (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 20Hz-200µs x 5 sec 80%) x 60 cycles	Total time 10 min: (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 30Hz-200µs x 5 sec 80%) x 40 cycles
B2	Total time 4 min frequency 6 Hz impulse width 300µs	Total time 15 min: (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 20Hz-300µs x 5 sec 80%) x 60 cycles	Total time 10 min: (3Hz-300µs x 7sec 80%+ 1Hz 3-00µs x 3 sec 100% + 30Hz-300µs x 5 sec 80%) x 40 cycles
B3	Total time 4 min frequency 6 Hz impulse width 200µs	Total time 15 min: (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 40Hz-200µs x 5 sec 75%) x 60 cycles	Total time 10 min: (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 50Hz-200µs x 5 sec 75%) x 40 cycles
B4	Total time 4 min frequency 6 Hz impulse width 300µs	Total time 15 min: (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 40Hz-300µs x 5 sec 75%) x 60 cycles	Total time 10 min: (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 50Hz-300µs x 5 sec 75%) x 40 cycles
B5	Total time 4 min frequency 6 Hz	Total time 10 min: (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% +	Total time 5 min: (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 70Hz-200µs x 5

	impulse width 200µs	60Hz-200µs x 5 sec 70%) x 40 cycles	sec 70%) x 20 cycles
B6	Total time 4 min frequency 6 Hz impulse width 300µs	Total time 10 min: (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 60Hz-300µs x 5 sec 75%) x 40 cycles	Total time 5 min: (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 70Hz-300µs x 5 sec 75%) x 20 cycles
B7	Total time 4 min frequency 6 Hz impulse width 250µs	Total time 5 min: frequency 12 Hz impulse width 250µs (90%)	Total time 5 min: (5Hz-250µs x 5sec 90%+ 30Hz 250µs x 5 sec 90%) x 30 cycles
B8	Total time 4 min frequency 12 Hz impulse width 100µs	Total time 10 min: (5Hz-100µs x 10sec 90%+ 20Hz 100µs x 5 sec 90%) x 40 cycles	
B9	Total time 4 min frequenza 6 Hz impulse width 250µs	Total time 20 min: (5Hz-250µs x 8 sec ch1/ch2 80% + 40Hz-250µs x 6 sec ch1 80%+ 40Hz-250µs x 6 sec ch2 80%) x 60 cycles	Total time 5 min frequenza 3 Hz impulse width 250µs (80%)
B10	Total time 4 min frequency 6 Hz impulse width 300µs	Total time 20 min: (5Hz-300µs x 8 sec ch1/ch2 80% + 40Hz-300µs x 6 sec ch1 80%+ 40Hz-300µs x 6 sec ch2 80%) x 60 cycles	Total time 5 min frequency 3 Hz impulse width 300µs (80%)
B11	Total time 4 min frequency 6 Hz impulse width 250µs	Total time 20 min: (5Hz-250µs x 8 sec ch1/ch2 80% + 40Hz-250µs x 6 sec ch1 80%+ 40Hz-250µs x 6 sec ch2 80%) x 60 cycles	Total time 5 min frequency 3 Hz impulse width 250µs (80%)
B12	Total time 4 min frequency 6 Hz impulse width 200µs	Total time 20 min: (5Hz-200µs x 8 sec ch1/ch2 80% + 40Hz-200µs x 6 sec ch1 80%+ 40Hz-200µs x 6 sec ch2 80%) x 60 cycles	Total time 5 min frequency 3 Hz impulse width 200µs (80%)
B13	Total time 4 min frequency 10 Hz impulse width 100µs	Total time 10 min: (5Hz-100µs x 5 sec 100% + 15Hz-100µs x 5 sec 95%+ 3Hz-100µs x 5 sec 100%) x 40 cycles	Total time 5 min frequency 12 Hz impulse width 100µs (95%)
B14	Total time 30 min: (1′ 3Hz - 300µs 100% + 1′ 5Hz - 250µs 100%+ 1′ 8Hz - 200µs 100%) x 10 cycles		

B15	Total time 10 min : (70Hz-70µs x 5 sec 100% + 3Hz 200µs x 5 sec 100%) x 60 cycles	Total time 5 min frequency 3 Hz impulse width 300µs	Total time 10 min frequency 1 Hz impulse width 300µs

BEAUTY 1/2 • Firming up – upper limbs and trunk. Firming up – lower limbs.

Indicated for firming up muscles in the arms and bust (Beauty 1), or the legs (Beauty 2); working mainly on slow-twitch fibres. Duration 29 minutes. Suitable for those who have never done any physical activity or have been inactive for a long period of time. Method of use:

- identify the muscle to be treated. To obtain good results it is best to treat just a few muscles at a time and complete the process described below;
- position the electrodes as shown in the photo;
- increase the intensity until the impulse can be felt (use a low intensity for the first session to help you to understand how the machine works);
- during the program and over the next few days the intensity should be increased gradually so that muscle contractions are not painful;
- during contraction generated by the unit, contract the muscle voluntarily;
- a cycle of 15/20 applications must be completed before the first results can be seen; one application for each muscle every two days with a day of rest in between.

It is possible to work on pairs of muscles, for example thighs and abdominal muscles, treating one set one day and the other the next day. Working on too many muscles at the same time is not recommended.

BEAUTY 3/4 • Toning up – upper limbs and trunk. Toning up – lower limbs.

Indicated for toning up muscles in the arms and bust (Beauty 3), or the legs (Beauty 4); working mainly on fast-twitch fibres. Duration 29 minutes. Suitable for people who already practice moderate physical activity. Method of use:

- identify the muscle to be treated. To obtain good results it is best to treat just a few muscles at a time and complete the process described below;
- position the electrodes as shown in the photo;
- increase the intensity until the impulse can be felt (use a low intensity for the first session to help you to understand how the machine works);
- during the program and over the next few days the intensity should be increased gradually so that muscle contractions are not painful;
- during contraction generated by the unit, contract the muscle voluntarily;
- a cycle of 15/20 applications must be completed before the first results can be seen; one application for each muscle every two days with a day of rest in between.

It is possible to work on pairs of muscles, for example thighs and abdominal muscles, treating one set one day and the other the next day. Working on too many muscles at the same time is not recommended.

BEAUTY 5/6 • Definition – upper limbs and trunk. Definition – lower limbs.

Indicated for defining muscles in the arms and bust (Beauty 5), or the legs (Beauty 6); working mainly on explosive fibres. Duration 19 minutes. Suitable for people who already practice good physical activity and wish to define their muscles in greater detail. Method of use:

- identify the muscle to be treated. To obtain good results it is best to treat just a few muscles at a time and complete the process described below;
- position the electrodes as shown in the photo;
- increase the intensity until the impulse can be felt (use a low intensity for the first session to help you to understand how the machine works);
- during the program and over the next few days the intensity should be increased gradually so that muscle contractions are not painful;
- during contraction generated by the unit, contract the muscle voluntarily;
- a cycle of 15/20 applications must be completed before the first results can be seen; one application for each muscle every two days with a day of rest in between.

It is possible to work on pairs of muscles, for example thighs and abdominal muscles, treating one set one day and the other the next day. Working on too many muscles at the same time is not recommended.

BEAUTY 7 • Modelling.

Due to a combination of capillarizing and toning impulses, this program helps mobilise fat in areas where it tends to accumulate. The electrodes should be positioned to form a square around the area to be treated and can be applied daily using a medium intensity.

Program duration: 14 minutes. Recommended stimulation intensity: medium.

Position of electrodes: see photos 01 to 20 and photo 22 and 23 in the manual of positions.

BEAUTY 8 • Microlifting.

The following program, with a duration of 14 minutes, is used to tone facial muscles using a special impulse to improve both the appearance and the dynamism of facial muscles.

The position of the electrodes is shown in the manual of electrode positions (photo 24).

N.B. a minimum distance of 3 cm. must be kept between the electrode and the eyeball.

⚠ **IMPORTANT:** take care when adjusting the intensity as facial muscles are particularly sensitive; intensity should be increased gradually, starting with a very low level of stimulation (just above perception) and increasing with care until you reach a good level of stimulation, represented by good muscle activation.

⚠ **IMPORTANT:** it is not necessary to reach levels of intensity capable of causing discomfort! The equation "more pain = more gain" is completely misleading and counterproductive.

Great and significant results are obtained through consistency and patience.

BEAUTY 9/10/11/12 • Lipolysis - abdomen (9), thighs (10), glutei and hips (11), arms (12).

These specific drainage programs increase microcirculation within and around the muscle fibres treated and create rhythmic contractions, facilitating the discharge of algogenic substances and

promoting lymphatic activity. It can also be applied to older people to improve blood and lymphatic circulation.

The program produces sequential tonic contractions, reproducing the typical effect of electronic lymphatic drainage.

There are no real limits of application for these programs, which can be practiced until the desired result has been achieved.

Stimulation intensity must be sufficient to produce good muscle contractions during the treatment but not enough to cause any soreness. Duration 29 minutes.

The first results can usually be seen after 3/4 weeks practicing 4/5 sessions a week.

- Beauty 9: lipolysis - abdomen (photo 20).
- Beauty 10: lipolysis - thighs (photo 21).
- Beauty 11: lipolysis - glutei (photo 19) and hips (photo 23, Ch1 on one hip and Ch2 on the other).
- Beauty 12: lipolysis - arms (photo 15 and 16, Ch1 on one arm and Ch2 on the other).

BEAUTY 13 • Tissue elasticity

Program lasting 19 minutes that stimulates surface muscle fibres. The frequencies used facilitate the removal of substances accumulated on the surface and improve the dynamic appearance of the skin. Intensity should be set to produce "surface vibrations".

Position the electrodes to form a square around the area to be treated.

BEAUTY 14 • Capillarization

The capillarization program significantly increases arterial flow in the area treated. The capillarization program is very useful for recovering after intense aerobic work (toning up training) and improves local microcirculation. Program duration: 30 minutes. Recommended stimulation intensity: medium. Position of electrodes: see photos 01 to 20 in the manual of positions.

BEAUTY 15 • Heaviness in legs

This program is used to improve blood flow and muscle oxygenation speeding up the elimination of lactic acid (produced after anaerobic sessions for muscle definition), reducing soreness and the risk of contractures. Thanks to this program the muscle treated will be ready for a new training session or competition much more quickly.

Program duration: 25 minutes. Recommended initial intensity: medium-low, enough to produce good movement of the part treated; increase intensity progressively until the muscle treated is subjected to a strong massage.

Position of electrodes: see photos 01 to 20 in the manual of positions.

Treatment programs for muscle firming and lipolysis.

Muscle	Photo	Weekly training program				No. of weeks
		Day 1	Day 3	Day 5	Day 7	
Abdominal muscles -	No. 1/20	Beauty14	B1	B14 + B1	B1	6

firming up						
Abdominal muscles – post partum	No. 20	B14	B1	B14	B1	8
Pectoral muscles - firming up	No. 7/17	B14	B1	B1	B1	6
Thighs - firming up	No. 11/18	B14	B2	B14 + B2	B2	5
Glutei - firming up	No. 19	B14	B2	B14 + B2	B2	5
Arms biceps - firming up	No. 2/15	B14	B1	B14 + B1	B1	5
Arms triceps - firming up	No. 3/16	B14	B1	B14 + B1	B1	5
Lipolysis - abdomen	No. 20	B9	B14	B9	B1	6
Lipolysis - thighs	No. 21	B10	B14	B10	B2	6
Lipolysis - glutei	No. 19	B11	B14	B11	B2	6
Lipolysis - hips	No. 23 (Ch1 on right hip Ch2 on left hip)	B11	B14	B11	B2	6
Lipolysis - arms	No. 15+16 (4 Ch1 electrodes on right arm and 4 Ch2 ones on left arm).	B12	B14	B12	B1	6

WARNING: MODERATE INTENSITY DURING THE FIRST TWO WEEKS, INCREASING IN THE FOLLOWING WEEKS

NEMS programs

N1	Total time 3 min Frequency 6 Hz impulse width 250µs	Total time 3 min Frequency 8 Hz impulse width 250µs	Total time 10 min (5Hz-250µs x 7sec 80%+ 1Hz 250µs x 3 sec 100% + 30Hz-250µs x 5 sec 80%) x 40 cycles
N2	Total time 4 min Frequency 6 Hz impulse width 200µs	Total time 15 min (3Hz-200µs x 9sec 80%+ 1Hz 200µs x 3 sec 100% + 20Hz-200µs x 8 sec 80%) x 45 cycles	Total time 15 min (3Hz-200µs x 9sec 80%+ 1Hz 200µs x 3 sec 100% + 30Hz-200µs x 8 sec 80%) x 45 cycles
N3	Total time 4 min Frequency 6 Hz impulse width 300µs	Total time 15 min (3Hz-300µs x 9sec 80%+ 1Hz 300µs x 3 sec 100% + 20Hz-300µs x 8 sec 80%) x 45 cycles	Total time 15 min (3Hz-300µs x 9sec 80%+ 1Hz 300µs x 3 sec 100% + 20Hz-300µs x 8 sec 80%) x 45 cycles
N4	Total time 4 min Frequency 6 Hz impulse width 200µs	Total time 15 min (3Hz-200µs x 9sec 80%+ 1Hz 200µs x 3 sec 100% + 40Hz-200µs x 8 sec 80%) x 45 cycles	Total time 10 min (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 50Hz-200µs x 5 sec 75%) x 40 cycles)
N5	Total time 4 min Frequency 6 Hz impulse width 300µs	Total time 15 min (3Hz-300µs x 9sec 80%+ 1Hz 300µs x 3 sec 100% + 20Hz-300µs x 8 sec 80%) x 45 cycles	Total time 10 min (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 50Hz-300µs x 5 sec 75%) x 40 cycles)
N6	Total time 4 min Frequency 6 Hz impulse width 200µs	Total time 10 min (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 50Hz-200µs x 5 sec 75%) x 40 cycles	Total time 10 min (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 60Hz-200µs x 5 sec 75%) x 40 cycles
N7	Total time 4 min Frequency 6 Hz impulse width 300µs	Total time 10 min (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 50Hz-300µs x 5 sec 75%) x 40 cycles	Total time 10 min (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 60Hz-300µs x 5 sec 75%) x 40 cycles
N8	Total time 4 min Frequency 6 Hz impulse width 200µs	Total time 10 min (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 70Hz-200µs x 5 sec 80%) x 40 cycles	Total time 10 min (3Hz-200µs x 7sec 80%+ 1Hz 200µs x 3 sec 100% + 80Hz-200µs x 5 sec 80%) x 40 cycles)
N9	tempo tot 4 min Frequency 6 Hz impulse width 300µs	Tempo totale 10 min (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 70Hz-300µs x 5 sec 80%) x 40	tempo tot 10 min (3Hz-300µs x 7sec 80%+ 1Hz 300µs x 3 sec 100% + 80Hz-300µs x 5 sec 80%)

		cycles	x 40 cycles
N10	Total time 4 min Frequency 6 Hz impulse width 200µs	Total time 10 min (3Hz-200µs x 12sec 90%+ 1Hz 200µs x 3 sec 100% + 100Hz-200µs x 5 sec 80%) x 30 cycles	Total time 10 min (3Hz-200µs x 12sec 90%+ 1Hz 200µs x 3 sec 100% + 120Hz-200µs x 5 sec 80%) x 30 cycles
N11	Total time 4 min Frequency 6 Hz impulse width 300µs	Total time 10 min (3Hz-300µs x 12sec 90%+ 1Hz 300µs x 3 sec 100% + 100Hz-300µs x 5 sec 80%) x 30 cycles	Total time 10 min (3Hz-300µs x 12sec 90%+ 1Hz 300µs x 3 sec 100% + 120Hz-300µs x 5 sec 80%) x 30 cycles
N12	Total time 30 min (20 sec 5Hz - 200µs 100% + 20 sec 8Hz - 150µs 100% + 20 sec 12Hz - 100µs 100%) x 30 cycles		
N13	Total time 10 min Frequency 6 Hz impulse width 250µs	Total time 5 min (5Hz-250µs x 7sec 80%+ 1Hz 250µs x 3 sec 100% + 20Hz-250µs x 5 sec 80%) x 20 cycles	Total time 10 min Frequency 2 Hz impulse width 250µs
N14	Total time 4 min Frequency 6 Hz impulse width 250µs	Total time 15 min (5Hz-250µs x 8sec CH1&CH2 80%+ 50Hz 250µs x 6 sec 75% CH1 + 50Hz 250µs x 6 sec 75% CH2) x 45 cycles	Total time 5 min Frequency 10 Hz impulse width 250µs (80%)
N15	Total time 3 min Frequency 6 Hz impulse width 200µs	Total time 10 min (30Hz-200µs x 5 sec 80% CH1 + 30Hz-200µs x 5 sec 80% CH2) x 60 cycles	Total time 5 min Frequency 4 Hz impulse width 200µs (90%)
N16	Total time 3 min Frequency 6 Hz impulse width 300µs	Total time 10 min (30Hz-300µs x 5 sec 80% CH1 + 30Hz-300µs x 5 sec 80% CH2) x 60 cycles	Total time 5 min Frequency 4 Hz impulse width 300µs (90%)
N17	Total time 3 min Frequency 6 Hz impulse width 200µs	Total time 10 min (50Hz-200µs x 5 sec 75% CH1 + 50Hz-200µs x 5 sec 75% CH2) x 60 cycles	Total time 5 min Frequency 4 Hz impulse width 200µs (90%)
N18	Total time 3 min Frequency 6 Hz impulse width 300µs	Total time 10 min (50Hz-300µs x 5 sec 75% CH1 + 50Hz-300µs x 5 sec 75% CH2) x 60 cycles	Total time 5 min Frequency 4 Hz impulse width 300µs (90%)
N19	Total time 10 min (3Hz-250µs x 7sec 80%+ 1Hz-250µs x 3sec 100% + 20Hz 250µs x 5 sec 80%) x 40	Total time 10 min Frequency 6 Hz impulse width 250µs (90%)	Total time 10 min Frequency 2 Hz impulse width 250µs

	cycles		
N20	Total time 5 min Frequency 3 Hz impulse width 250µs	Total time 10 min (3Hz-250µs x 2 sec ch1 100% + 3Hz-250µs x 2 sec ch2 100%) x 150 cycles	Total time 10 min (2Hz-250µs x 2 sec ch1 100% + 2Hz-250µs x 2 sec ch2 100%) x 150 cycles
N21	Total time 5 min Frequency 6 Hz impulse width 250µs		

NEMS 1 • Warming up (all muscle groups).

Program suitable for use before training sessions or competitions, very useful for sports involving maximum effort right from the start. Program duration: 16 minutes. Position of electrodes from photo 1 to photo 20. Recommended stimulation intensity: medium; the muscle must work without strain.

NEMS 2/3 • Resistance - upper limbs and trunk (2), lower limbs (3).

The Resistance program is used in sports to increase muscle resistance, acting mainly on slow-twitch fibres.

Program indicated for endurance sports: marathon runners, cross-country skiers, ironman, etc. Program duration: 34 minutes. Stimulation intensity during the contraction: if not particularly fit, start with a low intensity then increase gradually. For practiced athletes the intensity used should be enough to produce visible muscle contractions. In the event of muscle ache after stimulation, use the Fitness 19 program (muscle relaxant).

NEMS 4/5 • Resistant strength - upper limbs and trunk (4), lower limbs (5).

This program is designed to help increase resistance to physical stress, or rather withstand intense exertion for a longer amount of time in muscle regions subjected to stimulation. Indicated for sporting disciplines involving long, intense periods of exertion.

Stimulation intensity during the contraction: start with a low level of intensity, increasing it gradually. For practiced athletes the intensity used should be enough to produce visible muscle contractions. Program duration: 29 minutes.

In the event of muscle ache after stimulation, use the Fitness 19 program (muscle relaxant).

NEMS 6/7 • Basic strength - upper limbs and trunk (6), lower limbs (7).

The Basic strength program is used in sport to develop basic strength, which for definition is the maximum tension that a muscle can exert against constant resistance. The contractions alternate with periods of active recovery during the work phase, allowing the muscle to be trained without subjecting it to stress and improving oxygenation of the same muscle. Program duration: 24 minutes.

The following basic procedure will enable you to obtain the first results: two sessions per week (for each muscle region) for the first three weeks at medium/low intensity, three sessions per week for the next three weeks at high intensity.

Intensity must be increased gradually treatment by treatment, without overstraining the muscles. Suspend training for a few days in the event of fatigue and proceed with the "Fitness 19" program.

NEMS 8/9 • Fast strength - upper limbs and trunk (8), lower limbs (9).

This program is designed to increase speed in fast athletes and develop it in athletes lacking the quality. Program duration: 24 minutes.

The exercise assumes a fast pace and the contraction is short, as is the recovery. It is usually best to complete a three-week basic strength cycle of increasing intensity before using this program. Then continue with three weeks of fast strength three times a week at high intensity, almost past endurance during the contraction.

NEMS 10/11 • Explosive strength - upper limbs and trunk (10), lower limbs (11).

Explosive strength programs increase the explosive power and speed of the muscle mass, with extremely short, strengthening contractions and very long active recovery times to allow the muscle to regain strength. Program duration: 24 minutes. It is usually best to complete a three-week basic strength cycle (fitness 6/7) before using this program. Then continue with three weeks of explosive strength twice a week. During the contraction, the intensity must be the highest that can be endured in order to obtain maximum muscle exertion whilst involving the greatest number of fibres.

NEMS 12 • Deep capillarization.

This program significantly increases arterial flow in the area treated. Prolonged use of this program develops the intramuscular capillary network of fast-twitch fibres. The effect obtained is an increase in the capacity of fast-twitch fibres to withstand strain over extended periods of time.

For an athlete with good resistance, the capillarization program is very useful for recovery after intense aerobic work, before anaerobic work and when training is not possible (due to bad weather or an injury). Program duration: 30 minutes. Recommended stimulation intensity: medium. Position of electrodes: see photos 01 to 20 in the manual of positions in relation to the area that you wish to stimulate.

NEMS 13 • Muscle recovery.

Can be used for all sports, after competitions or the most demanding training sessions, in particular after long and intense exertion. To be used immediately after exertion. Helps drainage and winding down, improving muscle oxygenation and helping to discharge synthetic substances produced during exertion. Program duration: 25 minutes. Stimulation intensity: medium-low, increased during the last 5 minutes.

Position of electrodes: see photos 01 to 20 in the manual of positions in relation to the area that you wish to stimulate.

NEMS 14 • Agonist / Antagonist.

The electronic stimulator produces contractions alternated between 2 channels: during the first 4 minutes of warm-up the 2 channels work simultaneously, during the central work phase (15 minutes) muscle contractions are alternated between Channel 1 (agonist muscles) and Channel 2 (antagonist muscles). The program is designed to restore muscle tone to the quadriceps and its antagonist the leg biceps, or the biceps brachii and the triceps. The work aims at developing strength. With this program, muscle relaxation is obtained by simultaneous stimulation from both channels during the last 5 minutes. Program duration: 24 minutes.

Stimulation intensity during the contraction: enough to produce good muscle contraction + voluntary contraction to reduce the sense of discomfort and reach higher intensities. Intensity must be increased gradually treatment by treatment, without overstraining the muscles. Suspend training for a few days in the event of fatigue and proceed with the "Fitness 19" program.

NEMS 15/16 • 15/16 • Sequential tonic contractions - upper limbs and trunk (15), lower limbs (16).

This program increases microcirculation within and around the muscle fibres treated creating rhythmic contractions, fostering better drainage and toning. It can also be applied to older people to improve blood and lymphatic circulation in the lower limbs (e.g. applying CH1 to the right calf, CH2 to the right thigh). Program duration: 18 minutes.

These programs can be carried out using self-adhesive electrodes. Stimulation intensity must be sufficient to produce good muscle contractions during the treatment but not enough to cause any soreness. It mainly works on slow-twitch fibres.

NEMS 17/18 • Sequential phasic contractions - upper limbs and trunk (17), lower limbs (18).

This program produces rhythmic contractions with a stimulation frequency typical of fast-twitch fibres. It is suitable for increasing muscle strength sequentially.

The programs produce sequential phasic contractions on both channels. Stimulation intensity must be sufficient to produce good muscle contractions during the treatment but not enough to cause any soreness. Program duration: 18 minutes.

Unlike the previous program, this one uses a higher stimulation frequency during the contraction phase and therefore works mainly on fast-twitch fibres.

NEMS 19 • Muscle relaxant.

Can be used for all sports, after competitions or the most demanding training sessions, in particular after long and intense exertion. To be used immediately after exertion. Helps drainage and capillarization, improving muscle oxygenation and helping to discharge synthetic substances produced during exertion. Program duration: 30 minutes. Stimulation intensity: medium-low, increased during the last 10 minutes.

Position of electrodes: see photos 01 to 20 in the manual of positions.

NEMS 20 • Deep massage.

Can be used for all sports, after competitions or the most demanding training sessions, in particular after long and intense exertion. Program similar to the previous one: however it uses lower frequencies with a greater capacity for vascularization. To be used immediately after exertion. Helps drainage and capillarization, improving muscle oxygenation and helping to discharge synthetic substances produced during exertion. Program duration: 25 minutes. Stimulation intensity: medium-low, increased during the last 10 minutes.

Position of electrodes: see photos 01 to 20 in the manual of positions.

NEMS 20 • EMS

Programma che aumenta la microcircolazione all'interno e intorno alle fibre muscolari trattate creando delle contrazioni ritmiche, favorendo così una azione drenante e tonificante. Durata breve.

L'intensità di stimolazione deve essere sufficiente a garantire delle buone contrazioni muscolari durante il trattamento ma tali da non produrre indolenzimento. Il lavoro prevalente è sulle fibre lente.

Treatment programs for muscle strength.

Muscle	Photo	Weekly training program				No. of weeks
		Day 1	Day 3	Day 5	Day 7	
Abdominal	No. 1/20	Fitness6	F19+F6	F6	F12	5

muscles - basic strength						
Pectoral muscles - basic strength	No. 7/17	F6	F19+F6	F6	F12	5
Quadriceps – basic strength	No. 11/18	F7	F19+ F7	F7	F12	5
Glutei – basic strength	No. 19	F7	F19+ F7	F7	F12	5
Arms biceps – basic strength	No. 2/15	F6	F19+F6	F6	F12	6
Arms triceps – basic strength	No. 3/16	F6	F19+F6	F6	F12	6

WARNING: MODERATE INTENSITY DURING THE FIRST TWO WEEKS, INCREASING IN THE FOLLOWING WEEKS

MEM programs

Prg.	PHASE 1
M1-M5	Free memories TENS Total time 1-90 min frequency 1-200 Hz width impulse 20-520 µs
M6-M10	Free memories NEMS Total time 1-90 min frequency 1-200 Hz contraction time 1-10 sec slope 0-5 sec recovery time 0-30 sec width impulse 50-450µs
M11-M12	Free memories NEMS alternated Total time 1-90 min frequency 1-200 Hz contraction time 1-10 sec slope 0-5 sec recovery time 0-30 sec width impulse 50-450µs
M13	Battery test

M1-M5 • TENS Free memories

Free memories for antalgic TENS treatment.

M6-M10 • NEMS Free memories

Free memories for muscle recovery and training.

M11-M12 • NEMS Alternated free memories

Free memories for muscle recovery and/or training with alternated impulses on channel 1 and 2.

M13 • Battery test program (only for I.A.C.E.R. assistance centre)

Program for battery test.

Battery charging

Display will show low battery indicator  only when battery is low**.** In this case it may not be possible to undertake the therapy session, or not being able to complete it.
To proceed with the charging follow the steps below:

- Make sure that the device is switched off or switch off the device pressing the ⏻/OK button;
- Connect the battery charger to the plug of the unit and connect the battery charger into the power socket.

The display will show the battery blinking icon. After 4 hours the recharge automatically finishes and the display shows the recharge total time.
At the end of battery charging, disconnect the charger from power supply and store it in the carriage bag.

Battery replacement

To proceed with battery replacement follow the steps below:

- Remove the clip belt;
- Open the battery compartment;
- Disconnect the cable and take away the battery;
- Connect the cable of the new battery;
- Close the battery compartment and insert the belt clip.

It is recommended to remove the battery in case of prolonged inactivity.
Batteries have to be handled by adult persons: keep them out of children's reach.
Dispose the battery according to the current regulations.

ATTENTION: the life of the battery depends on the number of charge/recharge cycles.
We suggest the following precautions for a battery longer duration:

- Recharge the battery once in a month even if the device is not used;
- Discharge the battery as much as possible before the recharging;
- Use only the original battery charger or in any case the battery charger supplied by the fabricant/distributor. Not open or modify the battery charger.

Cleaning

Clean the equipment from the dust using a soft cloth.
Resistant stains can be removed using a sponge soaked in solution of water and alcohol.
Device not subjected to sterilization.

Carriage and storage

Carriage precautions

MIO-CARE PRO is a portable device, so it does not need any particular carriage precautions.

However we recommend to put away MIO-CARE PRO and its accessories in their own bag after every treatment.

Storage precautions

MIO-CARE PRO is protected till following environmental conditions:

In operation

Temperature	from +5 to + 40 °C
Rel. humidity	from 30 to 75%
Pressure	from 700 to 1060 hPa

Inside of the packaging

Temperature	from –5 to +55 °C
Rel. humidity	from 10 to 90%
Pressure	from 700 to 1060 hPa

Disposal

The equipment is subjected to WEEE regulations (see the symbol  on the label) concerning separate waste collection: when disposing this product, please use the designed areas for disposing electronic waste or contact the manufacturer.

Troubleshooting

If it is used in accordance with the instructions of the user manual, MIO-CARE PRO does not need a particular regular maintenance.
If you find any malfunctioning using MIO-CARE PRO, please follow these instructions:

- **MIO-CARE PRO does not turn on and/or the display does not light up.** Check the battery status and replace it if it is necessary (make reference to chapter "Battery replacement"). If the problem persists contact the manufacturer.
- **MIO-CARE PRO does not transmit electric impulses**. Check that the cable jacks have been inserted in the electrodes and that the plastic protection has been removed from the electrode. Check that the cables have been connected correctly (connector well inserted in the device). Check that the cables and the electrodes are not damaged. If the problem persists contact the manufacturer.
- **MIO-CARE PRO transmits low intensity or intermittent impulses.** Check the cables and the electrodes are in good condition and replace them if it is necessary. If the problem persists contact the manufacturer.
- **MIO-CARE PRO switches off during the operation**. It is suggested to replace the battery and start a new treatment. If the problem persists contact the manufacturer.
- **MIO-CARE PRO does not allow the intensity adjustment or not keep the adjusted value and reset.** It is suggested to replace the battery and start a new treatment. If the problem persists contact the manufacturer.

Assistance

Every intervention on device must be performed by manufacturer. For any assistance intervention contact the National Distributor or the manufacturer at the following address:

I.A.C.E.R. S.r.l.
Via S. Pertini, 24/a • 30030 Martellago (VE)
Tel. 041.5401356 • Fax 041.5402684

Technical documentation concerning the spare parts can be supplied by the manufacturer but only prior business authorization and specific training.

Spare sparts

For original spare parts contact the National Distributor or the manufacturer at following address:

I.A.C.E.R. S.r.l.
Via S. Pertini, 24/a • 30030 Martellago (VE)
Tel. 041.5401356 • Fax 041.5402684

To preserve product warranty, functionality and product safety we recommend to use only original spare parts.

Warranty

Make reference to the national laws for any warranty conditions by contacting the national distributor (or directly the manufacturer IACER).

MIO-CARE PRO. All rights reserved. MIO-CARE PRO and I-TECH MEDICAL DIVISION logos are owned by I.A.C.E.R Srl and are registered.

I.A.C.E.R S.r.l.
Sede operativa:
30030 Martellago (VE) - Via. S. Pertini 24/A
Tel +39 041 5401356 - Fax +39 041 5402684

Sede legale:
S. Marco 2757 - 30124 Venezia
Cod. Fisc./P.IVA IT 00185480274
R.E.A. VE N. 120250 - M. VE001767
Cap.Soc. € 110.000,00 i.v.
www.iacer.it - iacer@iacer.it