



Magnetotherapy

IN ASACAMPUS WE DEMONSTRATE
THE VALIDITY OF OUR WORK
THROUGH:

- ▶ in-depth study of the interaction of physical therapies, in particular Laser and Magnetotherapy, with biological tissues
- ▶ the investigation, pushed to the molecular level, of the mechanisms at the base of the biological response
- ▶ the evaluation of the therapeutic effects



ASL

A S A L A S E R

Research and Therapeutic Solutions

ASA Magnetotherapy: the “touchstone” in the application of ELF (Extremely Low Frequency) magnetic fields.

ASA MAGNETOTHERAPY CAN BE APPLIED FOR THE TREATMENT OF OSTEOARTICULAR AND NEUROMUSCULAR DISEASES, EITHER TRAUMATIC OR INFLAMMATORY, OF VASCULAR AND SOFT TISSUES CONDITIONS AND FOR TISSUE HEALING.



THE PRINCIPLES OF ASA MAGNETOTHERAPY.

The action of ASA Magnetotherapy devices is based on the scientific principles of ELF pulsed magnetic fields (1-100 Hz), that are the most studied and used magnetic fields. In living organisms, everything is moving and changes in magnetic fields are associated with electric fields changes. Endogenous electromagnetic fields originate from movement of muscles, tendons, etc. and from musculoskeletal system action itself. In humans, muscle vibrations induce mechanical strains and currents of specific frequencies (5–30 Hz), which have been observed in postural muscle activity (relaxed posture) and <10Hz during walking. Physiological frequencies (8-30 Hz) are reported by scientific literature as the frequencies that are most used in clinical applications. Assessing the therapeutic impact of electromagnetic fields, it is important to consider that they can induce biological effect in certain frequency ranges only.

MAGNETIC FIELDS CHARACTERISTICS.

In general, the **pulsed electromagnetic fields (PEMF)** which are mostly used for therapy are characterised by low frequency (less than 100 Hz) and variable intensity, from 0,5 Gauss and 500 Gauss. Devices based on this type of fields have been used for the treatment of bone union delays and defects since the 80s, the use of PEMF for these applications have been further confirmed thanks to subsequent clinical evidences.

The mode of action by which PEMF promote these biological effects is mediated by intracellular Calcium (Ca^{2+}) concentration, in relation to the plasmatic membrane potential and the corresponding ionic currents.

PHYSICAL THERAPY



RHEUMATOLOGY



SPORTS MEDICINE



ORTHOPEDICS



TRAUMATOLOGY



GERIATRICS



General rules for ASA Magnetotherapy application.

- ▶ The complete treatment ranges from 10 to 15 sessions of variable duration from 10 to 30 minutes, based on the areas and pathologies to be treated
- ▶ Therapy is performed daily for the first 5 sessions in acute pathologies
- ▶ Frequency, intensity and time parameters have to be adapted to single patient response
- ▶ Magnetotherapy can be applied even in the presence of orthopedic braces, plasters or internal and external fixation means, including joint prostheses (subject to specialist assessment), currently in titanium alloy
- ▶ The solenoids must not be placed in direct contact with the patient's skin to avoid any transmission of germs
- ▶ The treatment can be performed with patient being dressed
- ▶ During the treatment the patient must not wear metallic objects or objects that are sensitive to magnetic fields, such as chains, buckles, watches

ADVANTAGES

- ▶ Action even on deep tissues
- ▶ Well tolerated, non-invasive and painless
- ▶ Can also be used automatically
- ▶ Applicable on most patients
- ▶ Direct action on the whole body
- ▶ Use as stand-alone therapy or in combination with other therapies



Check out the complete and updated publication list on:
asalaser.com

PEMF

ACTIONS

ON DIFFERENT BODY TISSUES

OSTEOARTICULAR LEVEL:

- ▶ PROMOTE BONE FRACTURE UNION
 - ▷ Modulating intracellular calcium and matrix mineralization
 - ▷ Enhancing osteoblastic differentiation and activity
 - ▷ Inducing neoangiogenesis
- ▶ COUNTERACT OSTEOPOROSIS
 - ▷ Increasing Bone Mineral Density (BMD)
- ▶ HAVE A CHONDROPROTECTIVE EFFECT ON ARTICULAR CARTILAGE
 - ▷ Increasing TGF β level, that subsequently increases the production of the extracellular matrix molecules, such as aggrecan
 - ▷ Decreasing pro-inflammatory molecule production, such as IL1

NEUROMUSCULAR LEVEL:

- ▶ FAVOUR NERVE RIGENERATION AND SYNAPSIS EFFICIENCY
 - ▷ Increasing neurotrophic factors
 - ▷ Inhibiting nerve cell apoptosis
 - ▷ Increasing cAMP concentration
- ▶ FAVOUR MUSCLE REGENERATION
 - ▷ Remodelling the cytoskeleton
 - ▷ Promoting myogenesis processes
- ▶ MITIGATE CHRONIC GENERALIZED PAIN
 - ▷ Exerting a positive action on fatigue and function

PEMF

APPLICATIONS

EXAMPLES OF APPLICATION

▶ OSTEOARTICULAR DISEASES

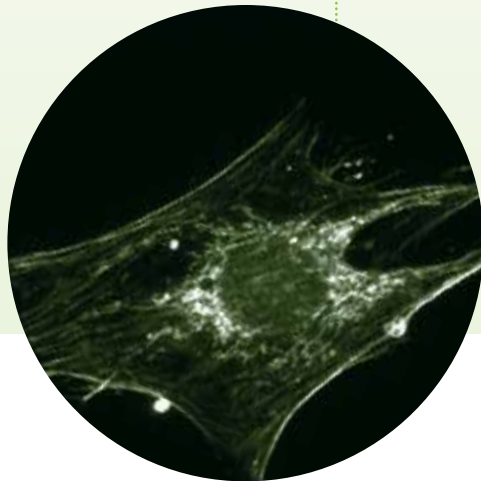
- ▷ Osteoporosis
- ▷ Osteoarthrosis
- ▷ Bone fractures

▶ NEUROMUSCULAR DISEASES

- ▷ Muscle sprains and distractions
- ▷ Neuropathies
- ▷ Peripheral nerve lesions

VASCULAR AND CIRCULATORY LEVEL:

- ▶ INCREASE MICROCIRCULATION
 - ▷ Increasing blood flow speed
 - ▷ Promoting neoangiogenesis
 - ▷ Enhancing pro-angiogenic factor release



IN TISSUE HEALING:

- ▶ MODULATE INFLAMMATORY PROCESSES
 - ▷ Modulating chemokines production
 - ▷ Increasing growth factors, such as FGF2 and TGF β



- ▶ VASCULAR DISEASES
 - ▷ Diabetic vasculopathy
 - ▷ Varix
 - ▷ Edemas and Hematomas

- ▶ TISSUE HEALING
 - ▷ Pressure ulcers
 - ▷ Cutaneous wounds

PMT Qs

ERGONOMIC DESIGN FOR A TOTAL BODY TREATMENT.

PMT Qs is the device with an innovative design, ergonomic, easy to use and equipped with a trolley. The pulsed magnetic field generator is controlled by a microprocessor which manages 3 independent channels: each channel has 2 outputs to which you can connect 4 solenoids and 2 Flexa applicators. The device, available in automatic or manual version, comes with bed, Ø 80 cm solenoid, and 2 Flexa applicators.

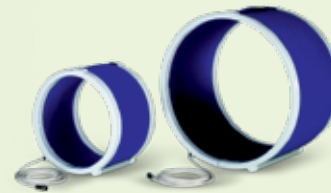
The PMT Qs device is designed for the treatment of several body areas such as spinal column, limbs, hips, and shoulders, ensuring the patient maximum comfort during the therapy. In fact, PMT Qs can be used in different ways: **in motion**, in the automatic version, on large body segments up to total body; with **localised** treatment performed with a cylinder or the Flexa applicators or with the **simultaneous use of the cylinder and the applicators** positioned in different body areas.

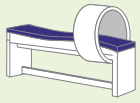
In the automatic version, the electromechanical movement system automatically places the solenoid on the area to treat (5 positions) returning to the initial position at the end of the therapy, saving the operator's time.



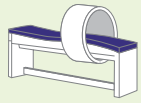
OPTIONAL ACCESSORY

Ø 30 cm portable solenoid, for the magnetotherapeutic treatment of the limbs, and Ø 50 cm portable solenoid for body treatment.

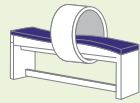




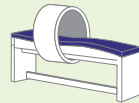
POSITION 1
Lower leg area



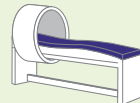
POSITION 2
Upper leg area



POSITION 3
Lumbar area



POSITION 4
Dorsal area



POSITION 5
Cervical area



PMT Qs

TECHNICAL CHARACTERISTICS

- ▶ 3 completely independent channels
- ▶ 6 outputs (2 for each channel)
- ▶ Frequency from 0.5 to 100 Hz
- ▶ Magnetic field intensity variable from 5 to 100%
- ▶ Treatment time from 1 to 99 min and continuous
- ▶ Pre-set, adjustable, saveable programmes
- ▶ Backlit LCD
- ▶ Membrane keyboard

ALARMS AND SAFETY FEATURES

- ▶ Therapy start and therapy end acoustic signal
- ▶ Language option
- ▶ Machine status signals and alarms

INCLUDED ACCESSORIES

- ▶ Unit carrying trolley
- ▶ Carry case

SIZE AND WEIGHT

- ▶ Generator: 28 x 38 x 13 cm (W x D x H) - 3 kg
- ▶ Flexa applicator: 36 x 21 x 2 cm (W x D x H) - 1,2 kg

POWER SUPPLY

- ▶ 100/240V±10% 50/60Hz 850VA max

COUCH WITH MANUAL SLIDING

SOLENOID Ø 80 cm

- ▶ Solenoid slides manually on aluminium runners with safety block
- ▶ Size and weight:
Solenoid: Ø 80 cm, depth 40 cm – 25 Kg
Couch: 188 x 55 x 72 cm (W x D x H) – 50 Kg

MOTORIZED COUCH WITH

SOLENOID Ø 80 cm

- ▶ Electromechanical system for solenoid movement managed by microprocessor
- ▶ Size and weight:
Solenoid: Ø 80 cm, depth 40 cm – 25 Kg
Couch: 188 x 55 x 72 cm (W x D x H) - 55 kg
- ▶ Power Supply: 100/240V±10% 50/60Hz 150VA max

OPTIONAL ACCESSORIES

- ▶ Portable solenoid Ø 30 cm
Dimensions and weight: depth 22 cm – 6,5 Kg
- ▶ Portable solenoid Ø 50 cm
Dimensions and weight: depth 35 cm – 11,5 Kg

ASV

A S A L A S E R

Research and Therapeutic Solutions

EASY Qs

PORTABLE AND CUSTOMISABLE. EASY Qs is ideal for the specific treatment of localised areas thanks to the Flexa applicator. It is portable to flexibly adapt to the logistics of the clinic. EASY Qs offers pre-set treatment programs, giving the operator the possibility to customise the emission parameters based on the type of patient, the pathology, and the clinical phase.



FLEXA APPLICATOR



FLEXIBLE AND CONSTANT. Equipped with a vibration effect, the **Flexa applicator** has a flexible structure that allows it to adapt to all areas of the body, ensuring a constant and homogeneous distribution of the emission of the magnetic field and allowing perpendicular delivery to the application surface. The flexible applicators are particularly suitable for localised treatments.



Perpendicular emission to the application surfaces with vibration effect that can be provided in cases where the massage action is therapeutic and/or appreciated by the patient.



EASY Qs

TECHNICAL CHARACTERISTICS

- ▶ 1 channel with 2 outputs for connecting the Flexa applicators
- ▶ Frequency from 0.5 to 100 Hz
- ▶ Magnetic field intensity variable from 5 to 100%
- ▶ Treatment time from 1 to 99 min or continuous
- ▶ Pre-set, adjustable, saveable programmes
- ▶ Backlit LCD
- ▶ Membrane keyboard

ALARMS AND SAFETY

- ▶ Therapy start and therapy end acoustic signal
- ▶ Language option
- ▶ Machine status signals and alarms

INCLUDED ACCESSORIES

- ▶ Carry Bag

SIZE AND WEIGHT

- ▶ Generator: 28 x 38 x 13 (W X D X H) cm - 3 kg
- ▶ Flexa Applicator: 36 x 21 x 2 cm (W x D x H) cm - 1,2 kg

POWER SUPPLY

- ▶ 100/240V±10% 50/60Hz 300VA max

OPTIONAL ACCESSORIES

- ▶ Unit carrying trolley
Dimension and weight: 63 x 54 x 85 (H) cm - 17 kg
- ▶ Portable solenoid Ø 30 cm
Dimensions and weight: depth 22 cm – 6,5 Kg
- ▶ Portable solenoid Ø 50 cm
Dimensions and weight: depth 35 cm – 11,5 Kg

ASV

A S A L A S E R

Research and Therapeutic Solutions

ASA

A S A L A S E R

Research and Therapeutic Solutions

Hilterapia®

MIS
Multiwave
LockedSystem

Qs
Magnetotherapy



ASA srl

CORPORATE HEADQUARTERS / REGISTERED OFFICE

Via Galileo Galilei, 23 / 36057 Arcugnano (VI) - Italy

T +39 0444 28 92 00 / F +39 0444 28 90 80

asalaser@asalaser.com

RESEARCH DIVISION / BRANCH

Joint Laboratory Department of Experimental and Clinical

Biomedical Sciences University of Florence

Viale G. Pieraccini, 6 / 50139 Firenze - Italy

asacampus@asalaser.com

asalaser.com



CE
0123