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ITALY

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# BIOSTIM PLUS

# ELECTROMAGNETIC BIOSTIMULATION

Currently, almost all your patients want to get benefits fast. BIOSTIM is the right answer you are looking for. BIOSTIM is the innovative and successful device that your patients will appreciate for sure and fast benefits. BIOSTIM improves your therapeutic approach and itis the perfect device that combines technological solutions and creative idea, practicality and versatility of use in that you will no longer be able to do without.

Design by
Studio Carozzi - Milan
Golden Compass Award

# BIOSTIM PLUS

BIOSTIM is a large and complex project from which actually two different product declinations arise for the therapeutic use of PEMFs (Pulsed) E (Electro) M (Magnetic) F(Fields).

**BIOSTIM PLUS Inductive**
**and BIOSTIM PLUS Diamagnetic**

Each of these two products get special features and intended uses.

In general, BIOSTIM represents today the best and most modern synthesis in the use of electromagnetic fields in Physical Medicine and Rehabilitation.

The main goal of both products is from one side the innovative use of pulsating electromagnetic fields, on the other side the achieving of tangible therapeutic benefits in a short time.

# BIOSTIM DIAMAGNETIC: THE INNOVATION

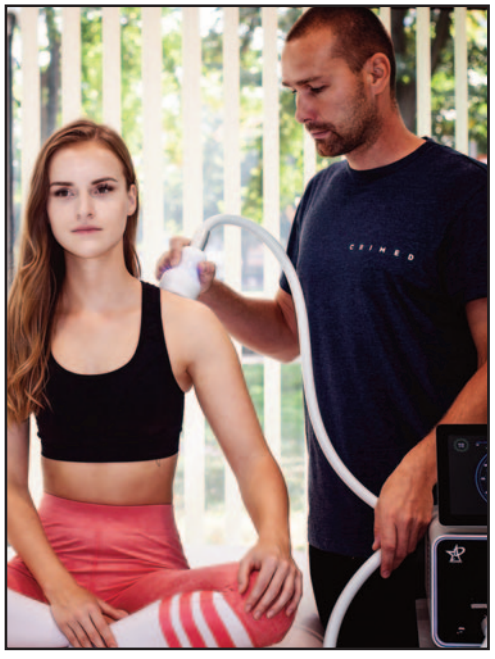
BIOSTIM Plus Diamagnetic is a generator for Diamagnetic Therapy with a maximum intensity of 1.8 Tesla, capable of generating a diamagnetic field focused on a small area to be able to hit even the deepest tissues; it induces a reduction in pain, a localized increase in fluids and a local anti-inflammatory action. BIOSTIM Diamagnetic obtains its best results in the treatment of pathologies localized on certain joints and/or certain points.

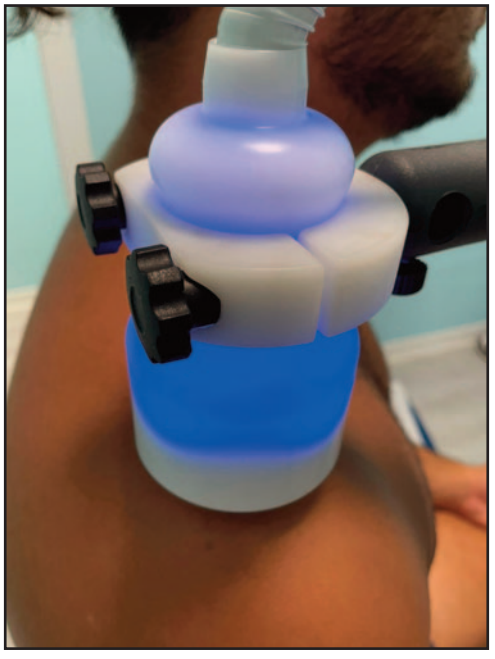
**It can be performed with a massage or with a fixed arm.**

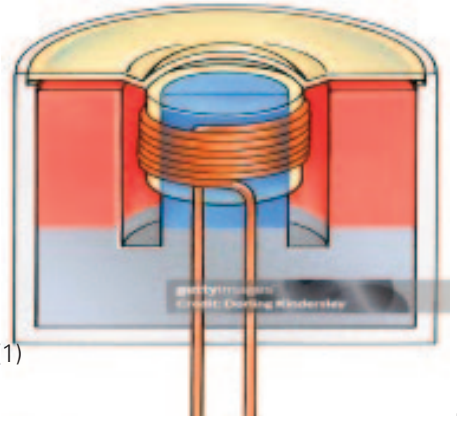
BIOSTIM Diamagnetic is a generator of very high intensity magnetic fields focused on an area of 80 mm, capable of stimulating body tissues and inducing a prompt physiological response.

The electromagnetic field applicator is made by a highly focused emission coil (see 1) for which PAGANI has designed an ergonomic handpiece, easy and comfortable to handle and move fot performing a manual massage, or to be placed on a support and perform static treatments.

The prerogative of the electromagnetic field generated by BIOSTIM Plus is the focus on a small area, while traditional magnetotherapy devices, in addition to much lower power, develop a very large field that is often not needed and ends up dispersing in unnecessary areas

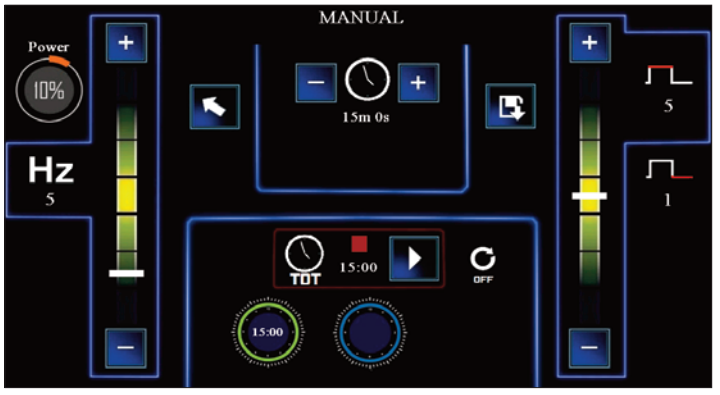




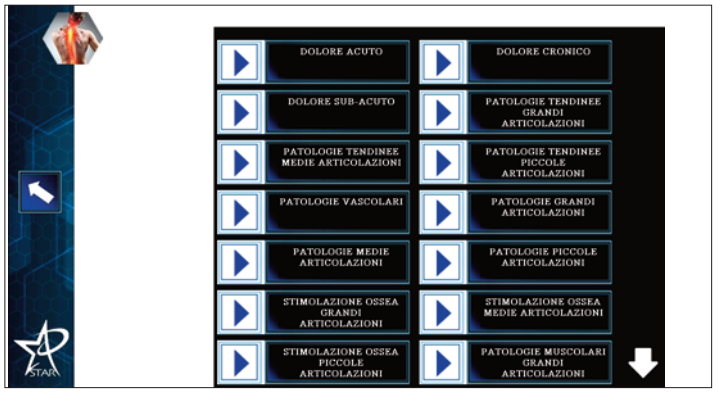


(1)

*The electromagnetic field is generated by a coil placed inside the handpiece, whose performance is kept constant thanks to a sealed cooling system.*




*Diamagnetic field setting screen, with power, frequency, work time, rest time and number of cycles settings*

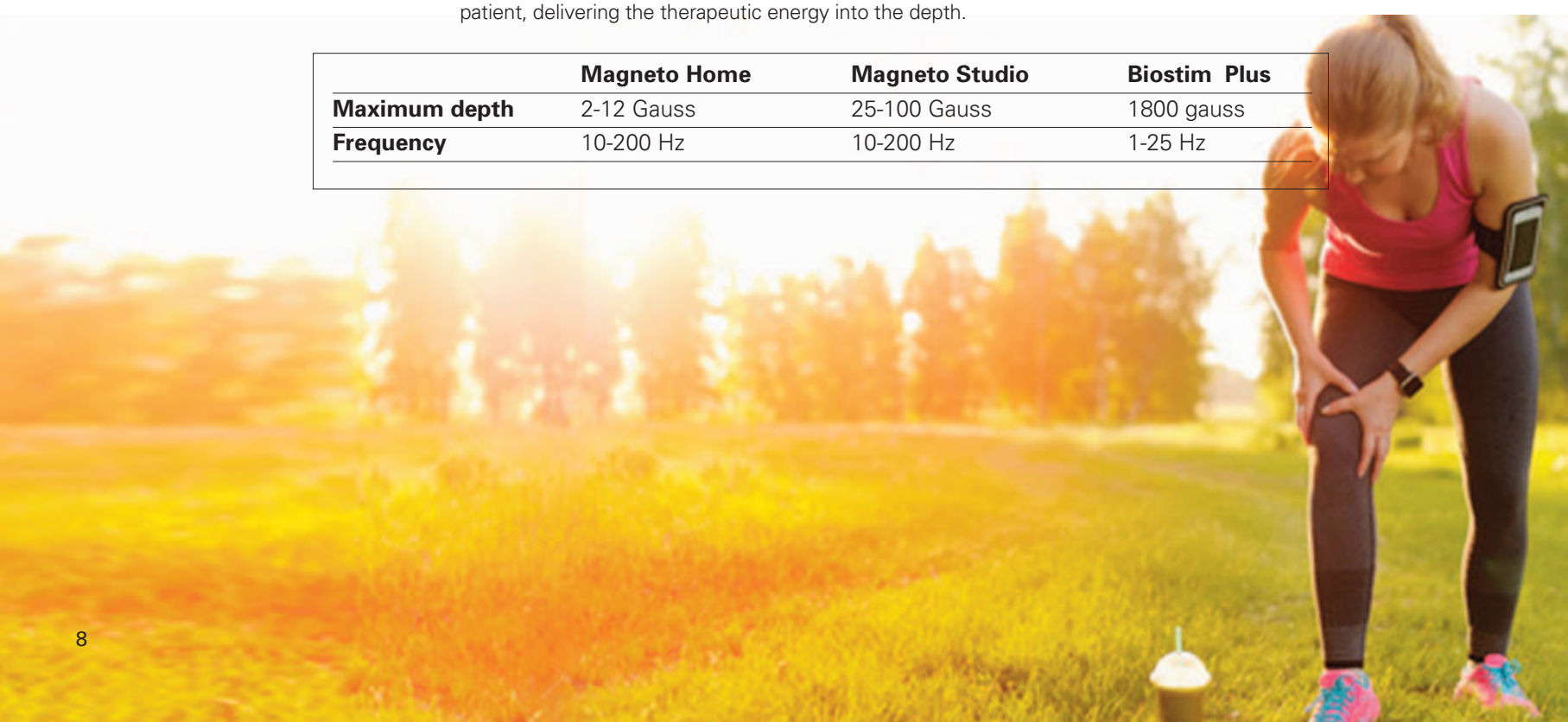



*Program list with suggested parameters for each pathology, that you can change at any time and you may enter as customized protocols*

# BIOSTIM PLUS DIAMAGNETIC: THE BENEFITS

Each treatment is effective, painless, non-invasive and harmless for both the operator and the patient. Furthermore, the patient often receives immediate benefit, starting from the first session.
When a body is exposed to high-intensity therapeutic magnetic field, we speak "diamagnet about therapy" to identify the therapeutic effects on the human body.
This method is suitable for a deep massage and to deliver therapeutic energy especially on deep and complex structures. It comes from the most traditional and well-known electromagnetic fields of the most classic magnetotherapy, but offers a power almost 10,000 times higher and more focused than some devices for home use and almost 200 times compared to professional magnetotherapy.
The expert physiotherapist will be able to interact better with the patient, delivering the therapeutic energy into the depth.

| | **Magneto Home** | **Magneto Studio** | **Biostim Plus** |
|---|---|---|---|
| **Maximum depth** | 2-12 Gauss | 25-100 Gauss | 1800 gauss |
| **Frequency** | 10-200 Hz | 10-200 Hz | 1-25 Hz |

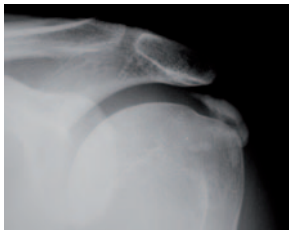


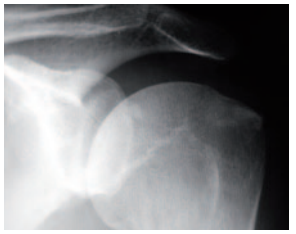
# BIOSTIM DIAMAGNETIC FOR STIMULAING REPAIRING PROCESSES

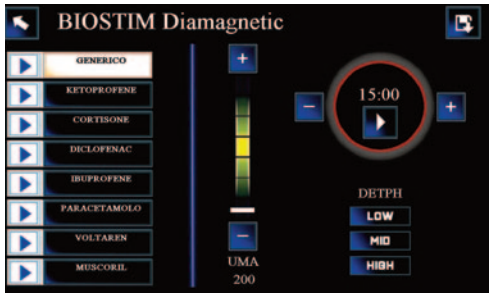
The magnetic fields generated by BIOSTIM are used to treat several pathologies in many clinical fields. In painful pathologies, in orthopedics and traumatology for the treatment of arthrosis, arthritis, periarthritis, injuries, traumas, fractures.
In rheumatology, physiatry, rehabilitation and sports medicine for the treatment of pubalgia, tendonitis, contractures, muscle strains, sprains and bruises.
Diamagnetic therapy carries out different types of actions:

- Pain control - the high intensity magnetic field has an important analgesic, anti-inflammatory and anti-edematous effect
- Movement of liquids - the repulsion exerted by the magnetic field on body water makes the therapy capable of accelerating the transport of nutrients, the balance of the intracellular environment, the regulation of tissue temperature.
- Endogenous biostimulation - diamagnetic therapy is able to promote the development of electrical currents on different tissue levels such as smooth and striated muscle, tendons and nervous tissue, so that they are "recharged", regaining the energy reserve that is necessary to maintain their homeostasis and their proper functioning.
- Consolidation delays - In the treatment of osteoporosis, the diamagnetic field can perform a useful excito-metabolic action by stimulating correct activity of osteoblasts and osteoclasts.

Compared to the classic magnetotherapy of a few dozen Gauss, BIOSTIM with its 18,000 Gauss allows for significantly shorter treatment times. The piezoelectricity of collagen justifies treatments for the treatment of arthrosis





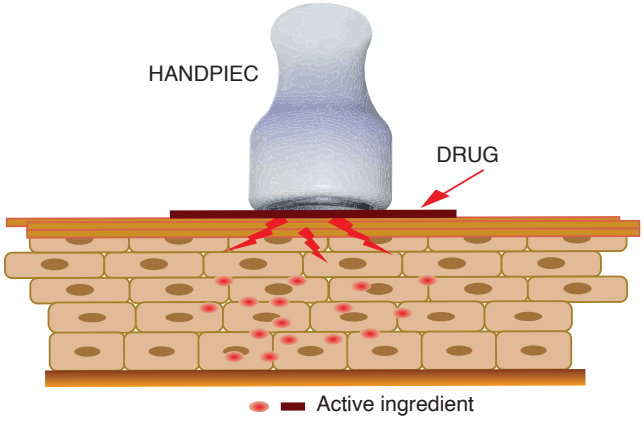



*BIOSTIM software offers pre-set programs for some of the most well-known and used drugs. For all other drugs, once the molecular weight is entered, the software automatically proposes the useful parameters for treatment.*

# LOCAL TRANSMISSION OF MEDICAL DRUGS

Management of the active molecules contained in the medical drugs occurs by mechanical pushing; the passage of the electromagnetic field allows a greater opening of the cellular membranes and this, together with the electric field coming from the piezoelectric mechanical effect, allows the migration of the drugs.

The results are achieved thanks to the transdermal administration. The electromagnetic field on one side induces greater permeability of the cellular membrane, on the other side the electric field transfers the product in ionic form. The patient does not experience adverse side effects, the skin remains intact and free from lesions and the patient receives the administration in full comfort.




*Power of CEMP is automatically set based on the molecular mass of the drug to be administered*

# BIOSTIM IN BEAUTY MEDICINE

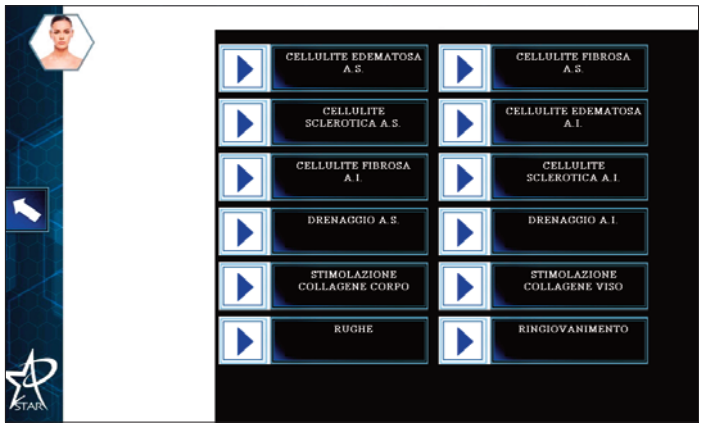
BIOSTIM is the answer of Physioaesthetic Medicine for all those who are looking for effective but non-invasive, innovative and long-lasting solutions and treatments, free of side effects and where necessary repeatable, for the treatment of the most common blemishes such as cellulite, water retention, "orange peel" skin, skin and muscle laxity.

BIOSTIM DIAMAGNETIC is effective in treating the various types of cellulite, in drainage, in contrasting hypotonia and laxity of the connective tissue.

It is a medical device that due to its characteristics can be used both on the face and on the body by expert and professional personnel.

The high intensity electromagnetic fields promote lymphatic drainage also through manual massage techniques; the hyperemia that is exercised at a local level is always under control and the interaction with the physiotherapist allows each parameter to be adjusted in real time according to the response of each patient. The interaction with intra and extracellular liquids stimulates fibrotic tissues.

The extraordinary drug delivery properties also allow interaction with lipolytic or draining products and allow local treatment in favor of a "soft" but at the same time effective and long-lasting approach. The treatment isn't invasive and not painful.




*Screen of physioaesthetics programs with suggested, editable and customizable parameters.*

# THE ADVANTAGES OF BIOSTIM DIAMAGNETIC

## FAST

*Application time is varying from 10 to 30 minutes and for 5 to 10 sessions*

## EFFECTIVE

*It is an effective therapy from the first session.*

## NON INVASIVE

*It's a non invasive treatment and free of side effects.*

## LONG-LASTING

*The results are appreciable in the long term and in case of pathologies chronic it is also repeatable.*

# BIOSTIM PLUS INDUCTIVE

# BIOSTIM PLUS: INNOVATIVE, NON-INVASIVE

**Painless and contact less treatments**

It is even possible to perform each type of treatment without direct contact with the patient's body. Benefits visible in a few sessions. In any type of use, BioStim offers visible and refutable results from the first sessions. They are get from 4 to 10 sessions to obtain obvious and stable results.

The BIOSTIM Electromagnetic Stimulation Therapy is effectively and are enough frequently applied for the treatment of chronic and acute pain, for the treatment of inflammatory states, vascular diseases, atrophies and toning. BEST is the excellence of "Contact Less" technique. It means that it does not necessarily require a contact between the applicator and the body part to be treated.This special feature makes BIOSTIM Electromagnetic Stimulation Therapy to be useful and versatile in various treatments and various pathologies. From the stimulation of the pelvic floor to the treatment of erectile dysfunction, for the execution of which the patient is not necessary to undertake, overcoming the inhibitions and limits of a therapy which instead becomes easily executable in any physiotherapy center. From the treatment of spasticity to the studies and cases of treatment of the SLA.

From a biological point of view, in the absence of an electric current, the action of BIOSTIM comes from the high intensity magnetic field, the stimulation is very deep and involves both the neurological and muscular sides; movement of liquids is obtained thanks to the direct action of the electromagnetic field and not only by the indirect induction as it happens in using electrical current.

Each treatment is made with the best comfort during the treatment combined with the capability to exercise deep and direct stimulation on the various cellular structures of the human body, allow for particularly interesting therapeutic performances to be achieved in the improvement of peripheral metabolism with impact on the inflammatory state, in muscle strengthening in case of hypotonia and atrophy, in the improvement of integumentary and tissue imperfections thanks to the drainage and stimulation of collagen and elastin tissues.

Activation of the brain areas responsible for controlling the pain threshold (descending inhibition). Through the stress transmitted from the stimulated area to particular areas, the pain threshold can be raised, thus limiting the pain. Inhibition of the passage of pain stimuli at the medullary level to give priority to the passage of tactile stimuli (Gate control). We must imagine that at the level of the spinal cord there is a crossroads. If tactile stimuli (stimuli produced by magnetic induction) pass at the intersection, painful stimuli cannot pass.

# PAIN RELIEF

- Activation of the areas of the brain deputies to the control of the painful threshold (descending inhibition). Through the stress transmitted from the stimulated area to particular areas, the pain threshold can be raised by limiting pain.
- Inhibition of the passage of pain stimuli at medullar level to give precedence to the passage of tactile stimuli (Gate control). We must imagine that at the spinal cord level there is like a crossroads. If the tactile stimuli passes to the intersection (stimuli products from magnetic induction), the painful stimuli cannot pass. eroduction of endorphins.
- Endorphins are powerful painkiller molecules that the brain can produce to inhibit pain. The magnetic field- induced stimulus has the ability to solicit the production of these molecules.
- Hyperpolarization.

This mechanism works at the level of nerve terminations on the site of pain, making them more refractory to stimuli. In this way, with the same stimulus, pain is perceived less.

- Vascular pathologies

Electromagnetic stimulation reaches the vascular system in depth, determining the increase in the gauge and flow. This involves greater and better use of nutrients and drainage of waste substances, oxygen supply.

- Muscle stimulation

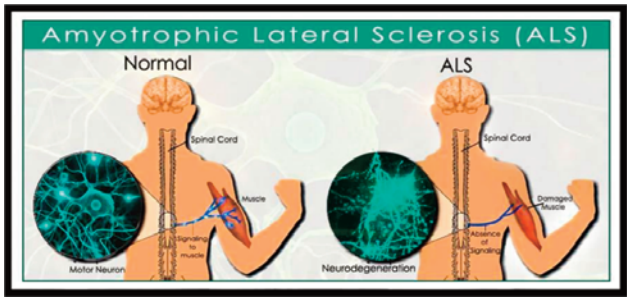
The mechanisms of action of stimulation currents can be sought in muscle activity that are able to produce. These contractions, if repeated for a time and adequate methods, produce effects of increasing muscle tone and / or recovery of muscle tone if the patient had a deficit of the same.

Stimulation causes the reduction of white fibers (fast) and the increase in red fibers (lengs). This causes more tonicity, increased ability to produce and lose energy aerobic enzyme, increased capillary density that involves increased metabolism and ability to dispose of waste products.

**Tone maintenance**

There are recent studies that takes intense magnetic fields for muscle stimulation, with the aim of improving the functionality of the muscles and slow down the decline.

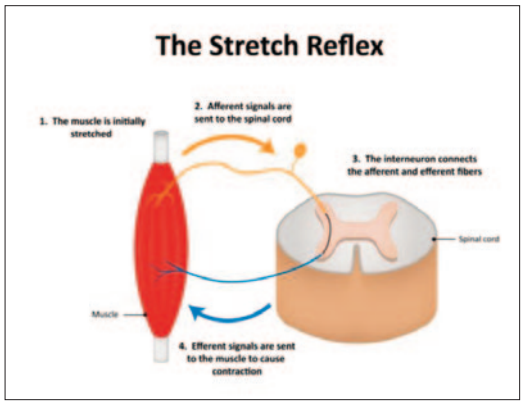
The advantage of this methodology is the possibility offered by the magnetic field to reach profound muscles without making the classic "shock" of the electric stimulus to the patient. This based on the theory that muscles can be therapeutic targets as they participate in the progression of the disease




**Spasticity**

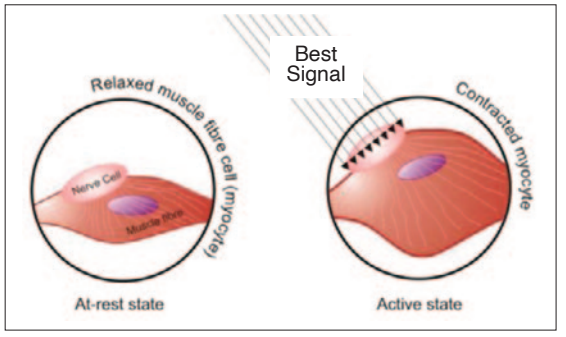
**Decontraction**

Electromagnetic induction is given by the electric current generated on neurons from rapid changes in the intensity of the magnetic field. When a certain threshold is reached, the electricity in turn generates the action potential, the motoneurone will depolarize and releases a signal to the motor unit, inducing a muscle contraction.



# PELVIC FLOOR STIMULATION

The rehabilitation of the pelvic floor is a rehabilitation treatment aimed at preventing and care of pathologies that affect the pelvic area. Therapy includes a personalized treatment of physician on the patient's symptoms, the diagnosis and reports of the specialist doctor. Exclusive and customized treatment provides stimulation of the perineal musculature contraction. The pelvic floor is stimulated to passively contract but not only! The technique is not invasive and is carried out with patient dressed, without contact.



*Applicator for static treatments on a stand or to be fixed using an elastic band*

*Handpiece to make the applicator usable for manual treatments*

# BIOSTIM PLUS INDUCTIVE: DESIGN AND VERSATILITY

Best attention has been paid to the single parts and accessories, particularly into the development of the shapes and the use of the applicators. Unconventional and not comparable to what already exists on the market, the BIOSTIM applicators have been designed to be able to be easily and effectively used both in static treatments, using a special holder or secured to the body with a special elastic band, and in manual treatments for which a useful and comfortable handle is available. Each applicator is provided with a led attesting electromagnetic delivery.

# LESS FAT, MORE TONE!

BEST is a non-invasive procedure that fully works on increasing muscle mass and that, thanks to greater caloric consumption, acts simultaneously "in fat reduction. However, it must be said that fat removal reduction is not the target and the main effect; slimming is a "consequence" coming from the maximum action required to the muscles, burning calories and taking nutrients even from fat cells.

Thanks to this synergistic capacity, BEST is effective both on muscles and on fat, since the induced over-maximal muscle contractions are accompanied by a rapid metabolic reaction in fat cells, an intensive lipolysis and undergoing this metabolic reaction.

Therefore, the action of BEST, even if not direct on fat tissue, is favoring energy consumption, contributing to reducing the volume.

Effective on different areas of the body (buttocks, abdomen, hips, legs, arms) without dermo-epidermal involvement.

Reduction of risk factors associated with pre-obesity or abdominal obesity, maximum comfort, completely painless procedure.

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