RADICULAR AND NEURALGIC PAIN
LESIONS AND CONTRACTURES
TENDON DISFUNCTIONS
LUMBAR SCIATICA
LUMBAR PATHOLOGIES
MYOFASCIAL SYNDROME
CERVICOBRACHIALGIA
CARPAL TUNNEL SYNDROME

The new generation of FREMS™

Elettroceuticals for therapy treatments and rehabilitation
Fremslife has developed an innovative and integrated solution for the treatment and reduction of pain in neurovascular diseases, based on Electroceuticals-oriented therapeutic and diagnostic programmes. The heart of the Fremslife technology is Frem™ (Frequency Rhythmic Electrical Modulation System).

Frems™ is a technology covered by more than 10 international patents and is certified by the United States FDA. It is the only neurostimulation technology that is scientifically validated as exerting a neo-angiogenetic effect, by promoting the release and synthesis of growth factors. It is effective in reducing pain from the very first session. The system is ideal for treating conditions and injuries during the acute stage; it is perfectly compatible with other therapeutic protocols and delivers outstanding results even in patients who are refractory to other therapies or treatments.

It is destined to revolutionise the world of medicine.

OUR MISSION:

TO GUARANTEE RESULTS
TO IMPROVE QUALITY
OF LIFE

Fremslife originates from the innovation of Electroceuticals, also known as Bioelectronic Medicine, which uses electrical stimulation to influence and change bodily functions.
Musculoskeletal disorders are the most frequent cause of chronic diseases and the use of our exclusive technology has allowed thousands of patients worldwide to get a quick and a functional analgesic recovery in cases such as:

- Lumbar sciatica
- Muscle injuries and tendinitis
- Myofascial Syndrome and cervicobrachialgia
- Carpal tunnel

With the scientific evidence provided by over 100 national and international publications, we have demonstrated that the results obtained with our Frems™ technology make it an efficacious option for the treatment of many musculoskeletal disorders.

THE EFFICACY OF A THERAPEUTIC SOLUTION CAN ONLY BE ESTABLISHED BY ANALYSING ITS RESULTS
WHAT IS ELECTROCEUTICALS

It is a new discipline that includes bioelectric medicine, i.e. the use of electrical stimulation of nerve cells to influence and modify physiological mechanisms.

The Frems™ technology belongs to this area of medicine as it has been demonstrated, by means of scientific and clinical studies, that it interacts with the human body by influencing certain basic mechanisms such as vasomotion and the H-reflex.

THE SCIENTIFIC BASIS OF THE FREMS™ TECHNOLOGY

Cells exchange information by means of a complex communication system based on the transduction of electrical signals and biochemical events by the passage of ions through channels in the cell membranes. Each cell and/or tissue possesses a certain resting membrane potential. Excitable cells are able to produce a repetitive event, known as action potential or “spike”. Each class of cell or tissue has a characteristic maximum frequency. For example, smooth muscle is excited by stimuli with frequencies of approximately 10 Hz, striated muscle with frequencies higher than 30 Hz, unmyelinated fibres at frequencies > 150 Hz, etc.
Frems™ (Frequency Rhythmic Electrical Modulation System), is constituted by trains of sequences of electric impulses (such as spikes), characterised by a minimal quantity of charge, whose frequency and duration can be varied according to pre-set regimens. The amplitude of the impulse is set by the operator using a remote control, according to the patient’s sensitivity threshold and the tissue stimulated. Subsequently, the system modulates maximum amplitude according to the ion balance of the tissue underneath the electrodes, to keep it constantly balanced (Biofeedback).

Impulses have an active phase and a recovery phase, which guarantees the ion balance in the tissue involved in the process. The impulse sequences are developed to suit the characteristics of the tissues to be involved in the programmed action and they are able to activate a functional “recovery” mechanism in the area involved in the treatment by means of the following actions:

- **FUNCTIONAL REACTIVATION** of biological tissues that have been damaged by metabolic imbalances
- **INHIBITION** of symptomatic neuromuscular feedback processes
- **MOBILISATION** of inflammatory and pro-inflammatory factors
- **ACCELERATION** of damaged tissue repair processes

**FREMS™ IS NOT A CONVENTIONAL TENS**

**TENS sequence**

**Example of a modulated sequence**

**Example of a FREMS™ sequence**
FISIOFREMS
NOW THE BEST IS EVEN BETTER

- New more powerful hardware
- New more user-friendly, faster-working software
- New user interface
- New protocols with automations that make application simpler and faster
- Continuous treatment efficacy monitoring system
- Elegant, light and easy to transport
IN PHYSICAL THERAPY AND REHABILITATION
FREMS™ EXERTS THE FOLLOWING SPECIFIC EFFECTS

Vasomotor Action

Vasomotion is the rhythmic pulsing activity of the smooth muscle of the vessels that regulates microcirculation activity. The changes in the microcirculation’s perfusion velocity during Frems™, measured by Doppler flow laser, demonstrate the presence of induced vasomotor activity.

Anti-inflammatory action

Inflammatory response is often a physiological defence response that provides protection against agents that alter the body’s biological and biochemical balances. Inflammatory response leads to painful oedematous situations and causes capillary dilation. There is an increase in capillary wall patency, which allows the plasma to penetrate into the intercellular spaces. The fluid accumulates between the cells and causes swelling. Frems™ stimulates vasomotion, thereby favouring, on the one hand, the release of angiogenetic factors, such as VEGF and bFGF and an increase in lymphatic system drainage and, on the other, a reduction in swelling, whilst triggering immune response to reduce the levels of pro-inflammatory cytokines.

At the same time, it favours blood flow and, consequently, the supply of oxygen and nutritional factors. In the case of diabetic patients with microangiopathies suffering from vessel endothelium inflammation, therefore with high circulating TNF- and IL-2 values, it has been seen to significantly reduce their levels in both the acute and chronic phases.

Modulation of muscle tone

Frems™, thanks to its modulating action of both cortical excitability and reflex activity, can significantly interfere on motor outflow. Using this mechanism we can modulate contraction processes which may be caused by traumas concerning the musculoskeletal system or the nervous system.

VEGF and b-FGF release

Experimental studies have shown that it is possible to favour the release and synthesis of VEGF (Vascular Endothelial Growth Factor) and of other angiogenetic growth factors by applying electrostimulation to smooth and striated muscle and epithelial cells, both in vivo and in vitro.

The Frems™ system dispenses impulse sequences able to significantly increase the release of plasma growth factors, as demonstrated by the studies conducted.

Pain relief

Frems™ produces a functional analgesic effect. Applying the electrodes to a certain area of the skin it has an anaesthetic - analgesic action that persists for a certain time. In addition, Frems™ also helps to reduce the “peripheral source” of the pain, by means of the mechanisms described previously.
THE CONDITIONS TREATED WITH FREMS™

PHYSICAL THERAPY AND REHABILITATION
Over 50 programs for the treatment of:

- Lumbar sciatica
- Radiculopathy due to nerve compression
- Discopathy
- Humeral impigment syndrom
- Post-traumatic hematoma
- Carpal tunnel syndrome
- Tarsal tunnel syndrome
- Post-traumatic and standard cervicobrachialgia
- Gonarthrosis
- Coxarthrosis
- Spondylosis
- Cervical trauma
- Joint mobilization

PAIN TREATMENT

- Acute and chronic neuropathic pain
- Pain caused by herniated disk
- Painful paraesthesia
- Chronic pain in patients in non-oncology conditions
- De-efferented pain

SPORTS MEDICINE
24 specific programs for the treatment of:

- Muscle injury (I, II, III)
- Ligament injury
- Tendon injury
- Articular distortions
- Insertional tendinitis
- Bursitises
- Capsuliti
- Contusions
HOW IS FREMS™ APPLIED

Frems™ consists in applying an electric signal that is transmitted by transcutaneous electrodes. These electrodes are dedicated to and specifically intended for the application of Frems™ and must be positioned according to set rules for each specific treatment and consolidated protocols for each application. Treatment consists in a cycle of daily sessions lasting approximately 30 minutes, performed either in a medical setting or at the patient’s home for a number of weeks.

Consumables

The treatment is administered by positioning, in the area to be treated, transcutaneous electrodes with a limited contact surface that have been developed and certified specifically for Frems™ applications.
FISIOFREMS
THE MAIN UNIT

- 2 simultaneously active channels
- 2 cables, each of which has 8 leads for a total of 16 electrodes, allowing a complete, even bilateral, treatment
- Electrode detachment alarm
- Remote control for treatment management at a distance
- User card
- Mains power supply

FREMS™ ELECTRODES

The electrodes are an essential component for guaranteeing treatment efficacy.

The contact impedance between electrode and patient is a potential critical point for energy transfer.
The original Frems™ electrodes have been specifically designed to optimise this energy transfer.
The limited contact surface was chosen because, combined with the biocompatible material the electrodes are made of, it guarantees the best impedance for greater energy transfer.
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Centro Studi Fremslife is a place dedicated to scientific exchange and training that provides a concrete support to our mission:

TO GUARANTEE RESULTS TO IMPROVE QUALITY OF LIFE.

With this initiative, Fremslife intends to provide a service that favours the scientific aspects of the technologies it manufactures, dedicating particular attention to the clinical evidence of the results obtained in the treatment of various conditions.
Directive 93/42/EEC and subsequent amendments. Fremslife is certified according to EN 13485:2012. The Aptiva™ system is also FDA510(k)-approved.