

A modern, light blue and black medical device for diamagnetic therapy. It features a large, adjustable black monitor mounted on a white frame. A black arm extends from the top, holding a cylindrical applicator head. The machine is positioned on a clear acrylic table with a white pump bottle of product nearby. The background is a gradient from light grey to dark blue.

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DIAMAGNETIC THERAPY[®]
A Revolutionary Therapy

DIAMAGNETIC THERAPY

HEALTH AND SCIENCE



*PERISO mission is that of conjugating innovative ideas with the development of modern technologies, which effectively support the diagnostic and rehabilitative medicine, **without any invasive approach.***

Antonio Santoli

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OUR STRENGTH LIES ON

Research, as a strategic resource for physicians and healthcare professionals dedicated to the therapy and rehabilitation of patients. Successful applied science is our priority.

Technology, developed in complete synergy with the operator's experience, which leads us to create new tools that guarantee rapid and successful treatment in complete safety.

Innovation, carefully designed in support of human experience, and the enrichment of professional training within the medical field, for a better relationship therapist - patient.

DIAMAGNETIC THERAPY

DESIGNED WITH FUTURE TECHNOLOGY

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The use of diamagnetic materials combined with the effect of the magnetic field.

High intensity magnetic fields as an innovative therapeutic instrument.

Administering drugs through the DMA system eliminates the need to resort to traditional systems.

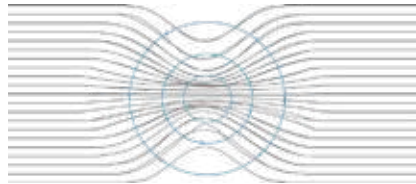
Diamagnetic therapy is a non-invasive therapeutic method based on the repulsion mechanisms generated by the forces of high intensity magnetic fields. When subjected to the action of a magnetic field, the electronic structure of diamagnetic materials undergoes molecular movement in opposite direction to the field itself.

High intensity magnetic fields can trigger cellular re-adaptation to positive physiological response in many pathologies affecting the muscular-skeletal system and significantly reduce treatment times while improving the quality of life for patients.

Also known as **DMA (diamagnetic molecular acceleration)**, diamagnetic therapy offers an original way to provide drug treatment that allows the completely painless administration of active principles without the use of needles or electric current.

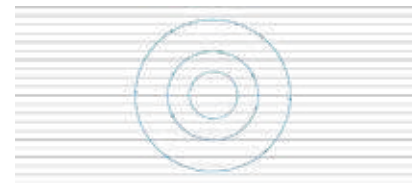
Ferromagnetic substances are attracted to an external magnetic field. Unlike diamagnetic and paramagnetic substances, a ferromagnetic material's relative magnetic permeability is not constant when fields are varied.

$\mu_r > 0$ ferromagnetic



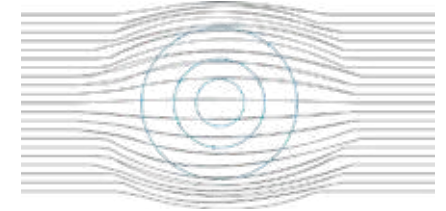
Substances defined as paramagnetic remain neutral in the presence of an external magnetic field because the respective forces of attraction and repulsion balance each other out.

$\mu_r = 0$ paramagnetic



When a diamagnetic substance is invested in a magnetic field, it reacts by weakening the external field with a slight magnetic movement in the opposite direction to the field itself, in this way creating an effect of repulsion.

$\mu_r < 0$ diamagnetic

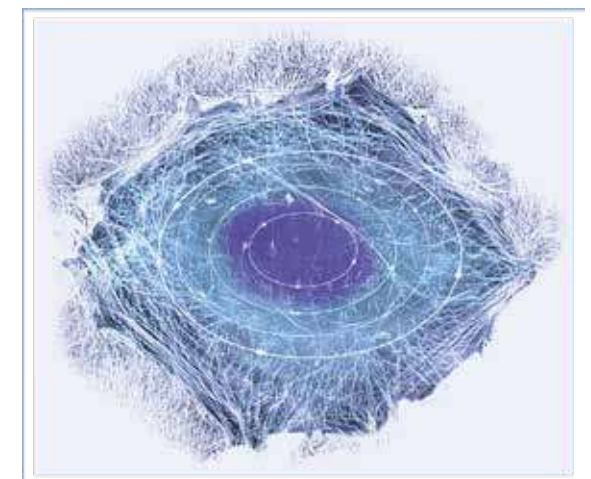


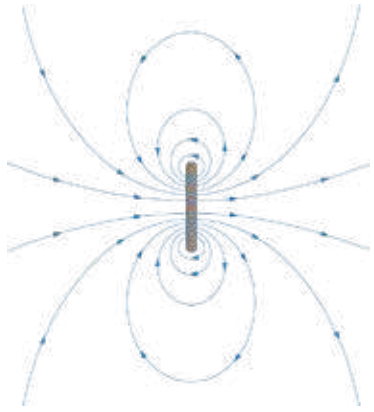
Materials and substances are classified on the basis of their magnetic properties as ferromagnetic, paramagnetic, and diamagnetic. The physical characteristics of the latter constitute the foundation of diamagnetic therapy.

MAGNETIC PROPERTIES OF MATERIALS

Relative magnetic permeability (μ_r) is related to **vacuum magnetic permeability** (μ_0) in order to represent the ease with which magnetic forces propagate in a vacuum.

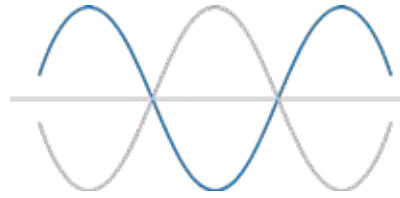
The repulsive force generated by the diamagnetic effect is very weak and is **appreciable only when the magnetic field is very intense.**





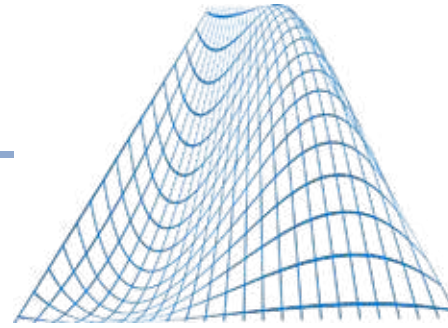
HIGH INTENSITY: 2 Tesla

It produces the diamagnetic effect



LOW FREQUENCY: 7 Hz

It avoids damages of biological tissue



SELECTIVE AMPLITUDE: adjustable

It allows selective stimulation of tissues

YES, OF COURSE, BUT...

Why 2 Tesla?



Because the diamagnetic effect on water molecules that triggers the movement of liquids is made possible by the magnetic field's high intensity.

Isn't a magnetic field of such high intensity dangerous?



No, it isn't, because the field's 7Hz frequency is very low, therefore the energy generated is not ionizing and does not damage tissue.

How does an electric current generated by a magnetic field differ from the electric current generated by a radio frequency?



A magnetic field's electric current is generated completely inside the tissue and is isotropic, or rather, equal in every one of its points, both at the surface and deep down.



The physics of high intensity and low frequency magnetic fields, combined with the selective amplitude of the field's gradient is the technological basis of diamagnetic therapy.



MAGNETOTHERAPY

JUST A CONDUCTOR OF THE ELECTRICAL FLOW

100 GAUSS

NO

NO

4 HOURS

(NON-SELECTIVE CURRENT) NO

45



THE ROLE OF THE WATER ELEMENT

FIELD INTENSITY

EFFECT ON LIQUIDS

TREATMENT OF PATHOLOGY IN THE ACUTE PHASE

AVERAGE TIME PER SESSION

SELECTIVE AMPLITUDE ADJUSTABLE

AVERAGE OF TREATMENT SESSIONS

DIAMAGNETIC THERAPY

BASIC CONSTITUENT OF THE THERAPY

20.000 GAUSS

YES

YES

15 MINUTES

YES (SELECTIVE CURRENT)

15

The characteristics of intensity of the magnetic field and the pulse emission mode make diamagnetic therapy different from conventional magnetic therapy.

“Electromagnetism is something impalpable. Our senses perceive only an infinitely minute part of the order of less than one trillionth. This means that if the electromagnetic spectrum were an entire stretch of beach, we would perceive the existence of just one grain of sand. Yet that infinitely tiny band of the spectrum gives us some of the deepest emotions of our lives: a sunset, the spectacular colors of a flower, a beloved person’s face. I can’t even imagine how it would be to appreciate even only a little bit more.

However, the other areas of the spectrum are no less important for us, and assist us in our day to day lives, making the telephone, television, and internet work, curing us of disease. From the immense magnitude of the electromagnetic spectrum, humans have fashioned instruments capable of “seeing” all the way from nanometers (0.000,000,001 m) to hundreds of thousands of kilometers (300,000,000 m); here, the CTU occupies a special, far from anonymous place on the electromagnetic spectrum, a place where functional structures of our body can “feel” its effects. And that’s where it belongs!”

The Inventor

DIAMAGNETIC THERAPY

TECHNOLOGY AND TOOLS

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CTU mega
20

15 min

- Static Pain
- Touching Pain
- Movement difficulties
- Genetic dysfunction



Guida | Maneggio

- Skin
- Temperature
- Humidity
- Conductivity

RF
00

70%

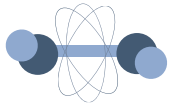
Energy 100%
Time 040%
Temp 5

Note

CTU mega
DIAMAGNETIC PUMP 20

UP

CTU MEGA 20 DIAMAGNETIC PUMP



The technology is safe because the energy associated with the field is too weak to break molecular bonds.

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POWER SUPPLY
50-60 HZ 230 V

CURRENT CONSUMPTION
9,5 A

POWER CONSUMPTION
2200 VA (800 W)

CONVERSION FACTOR
0,36

OPERATING FREQUENCY
1 HZ - 7 HZ

TYPE OF EMISSION
IMPULSE

TECHNICAL FEATURES

ATMOSPHERIC PRESSURE
FROM 700 TO 1000 HPA

COOLING SYSTEM
LIQUID

DIMENSION
84 X 80 X 163 CM

WEIGHT
100KG - INDICATIVE

OPERATING ROOM TEMPERATURE
FROM 10 °C TO 30 °C

FIELD GENERATOR
ELECTROMAGNETIC COIL



DIAMAGNETIC THERAPY

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MECHANISMS OF ACTION

Water is one highly diamagnetic substance, but so are many other organic substances, such as lipids and most plasma proteins, which play key roles in human metabolism.

The repulsive mechanical force exerted by diamagnetic therapy interacts with these substances at both extracellular and intracellular level, promoting the resolution of edema and tissue healing processes.

— MOVEMENT OF LIQUIDS

— ENDOGENOUS BIOSTIMULATION

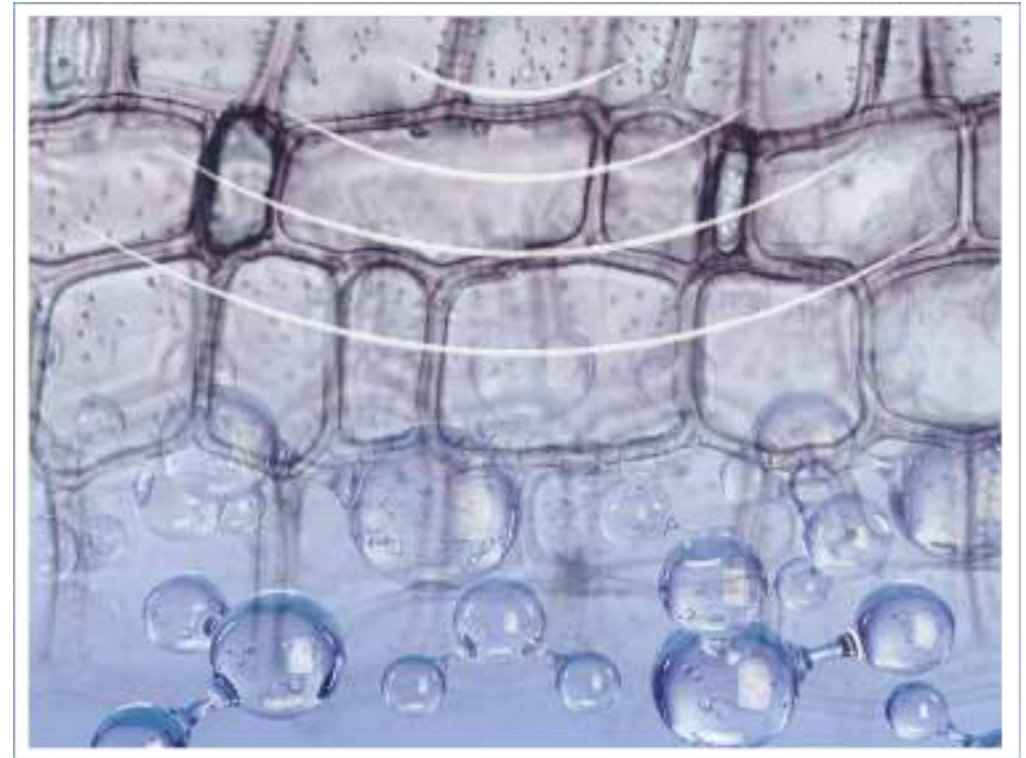
— PAIN CONTROL

— ADMINISTRATION AND MOLECULAR IMPLANT



CTU MEGA 20 DIAMAGNETIC PUMP

Diamagnetic therapy acts on the intracellular and extracellular matrix, producing drainage, regeneration, and strong tissue biostimulation.



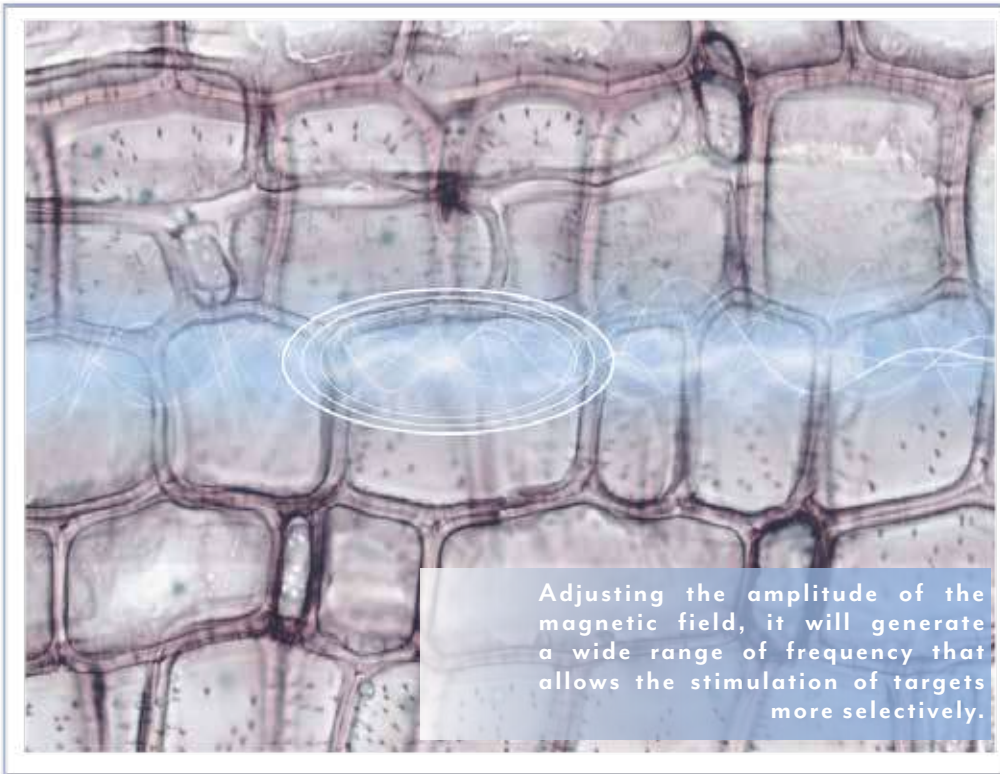
Movement of Liquids

The degree of interaction between the diamagnetic pump and the human body's fluid compartments depends on the fact that the water is the medium in which all the body's biological reactions take place.

Intervening on the body's water and electrolyte balance means interacting with the systems responsible for maintaining osmotic pressure and electric potential, two aspects that are fundamental in many physiological functions such as neuromuscular activation and nerve impulse conduction.

The main effects of diamagnetic therapy on the extracellular and intracellular matrix regard the activation of the following fundamental biological functions:

- fluid drainage
- nutrient and metabolite transport
- cellular homeostasis modulation
- tissue stimulation



ENDOGENOUS BIOSTIMULATION

This stimulation is endogenous and isotropic, meaning that it is generated inside the organism and distributed evenly on both the surface and deep down inside for the entire volume of the magnetic field's interaction.

The high variation speed of the CTU Mega 20 magnetic field and its intensity up to 2 Tesla permits the energization of even the deepest levels of tissue, and not only on the surface.

Physiological stimulation frequencies:

Smooth muscle: up to 50 Hz

Striated muscle: up to 100 Hz

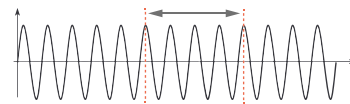
Nervous tissue (slow-twitch fibers): up to 1,000 Hz

Nervous tissue (fast-twitch fibers): up to 5,000 Hz

Cellular action: up to 7,500 Hz

Membrane action: up to 10,000 Hz

Tendon tissue: above 10,000 Hz



Variations in the frequency and shape of the magnetic pulse permit action to be taken selectively in different areas to be treated and tissue to be energized by wavelengths corresponding to the physiological level.

CTU MEGA 20
DIAMAGNETIC PUMP

Diamagnetic therapy stimulates biological tissue thanks to the effects of the electric field induced inside the cell membranes and endo-cytoplasmic structures that are charged with electric potential as a result.

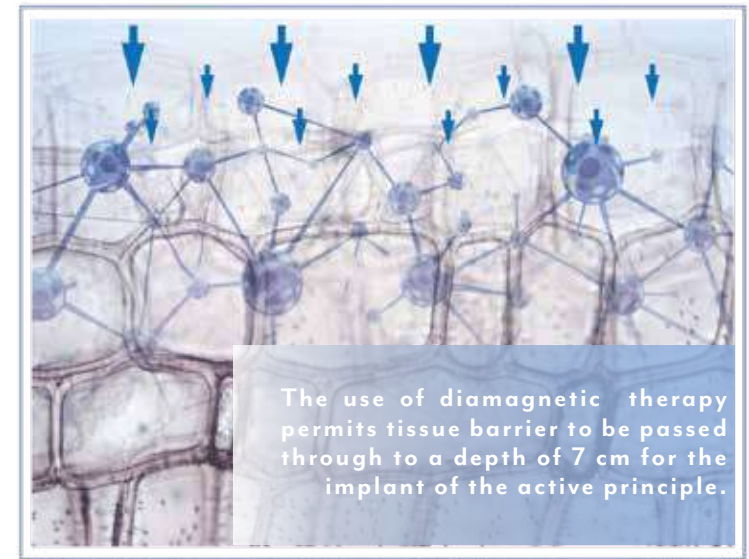
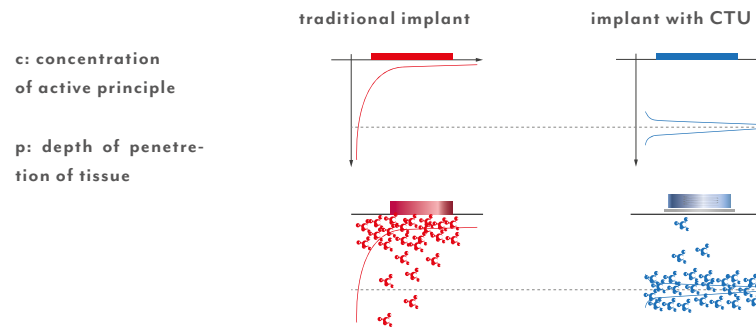
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CTU MEGA 20 DIAMAGNETIC PUMP

Unlike other electric current methods, diamagnetic therapy, which uses the magnetic field, does not cause tissue polarization or the hydrolysis of pharmacological substances.

MOLECULAR IMPLANT

With the CTU Mega 20, drug molecules can be trans-cutaneously administered using the repulsive mechanical force imparted by the magnetic field. The diamagnetic molecular implant follows a linear curve with Gaussian distribution at any given depth. The desired layering of the active principle can be obtained on the basis of the volume of the pharmaceutical product and the depth of implant. With conveyance by means of electrical current instead, substances are unevenly distributed throughout the tissues and subject to saturation because diffusion occurs exponentially.



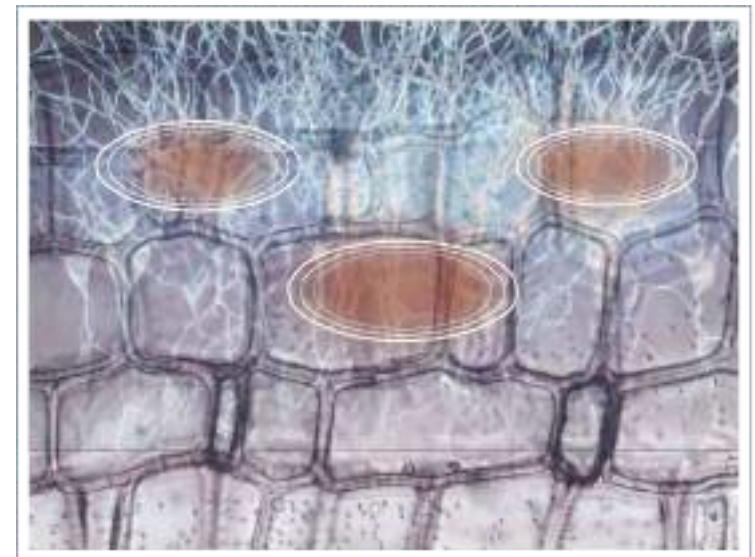
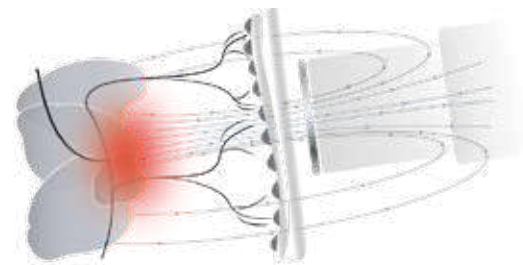
YES, OF COURSE,
BUT...

Which pharmaceuticals can be administered by molecular implant?

All pharmaceuticals with diamagnetic properties or those that can be dissolved in the water used as an excipient can be given. All substances in watery solutions can be directly used by the system.

PAIN CONTROL

A 215 KHz frequency induced in tissues by diamagnetic therapy permits selective action also on pain nerve receptors and trigger points using the pain control function either as a single treatment or as part of a multiple treatment regimen.



Magnetic Field + Radiofrequency

The CTU Mega 20 diamagnetic pump is designed to permit the use also of an electric generator that generates a radiofrequency that can be used in capacitive or resistive mode.



Capacitive

It releases more energy into the first layer, just beneath the electrode.



Resistive

It releases more energy into the biological tissue with high impedance.



CTU MEGA 20
DIAMAGNETIC PUMP

PUSH AND PULL EFFECT

The magnetic field generated by the CTU Mega 20 can be used autonomously, whereas radiofrequency can be used only when accompanied by the magnetic field.

Magnetic generator



Magnetic field
2 tesla

Electric generator



Electric field
Traditional radiofrequency

Therefore, with the CTU Mega 20 diamagnetic pump, the magnetic field can also be associated with diathermy for a special technique based on the so-called “push and pull” effect, a synergic combination of diamagnetic therapy and diathermy.

Push and pull effect

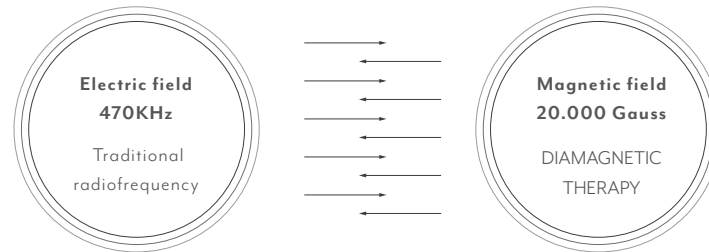
Under normal operating conditions, the increased arterial and venous blood flows induced by the diathermic process undergo saturation due to vasodilatation when the physical limitation imposed by the mechanical confinement of the external compartment is reached.

This limitation can be overcome thanks to the repulsive force generated by the magnetic field, which induces the drainage of the liquids from the area in question.

CTU MEGA 20 DIAMAGNETIC PUMP

Synergic Interaction

Push and pull effect



The **CTU Mega 20** generates a 470 kHz radiofrequency. Technological innovation permit the optimum use of diathermy for every type of treatment.



DOUBLE NEUTRAL PLATE

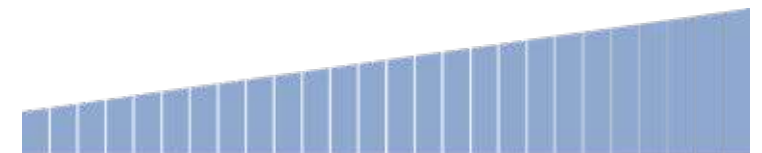
The use of the double neutral permits the treatment of extensive areas of the body while maintaining the balance and uniformity of the energy administered, with the advantage of reducing treatment times and accelerating therapeutic effects.

YES, OF COURSE, BUT...

What are the differences with traditional diathermy?

Traditional diathermy does NOT involve the use of a magnetic field generator, but only a normal electric generator whose therapeutic function is based exclusively on radiofrequency. It is the combined use of an electric generator and a magnetic field generator that enables therapeutic treatment that associates normal diathermy action with diamagnetic therapy action, in this way generating the "push and pull" effect.

TECHNOLOGICAL INNOVATION



IMPEDANCE METER

In every treatment with diathermy, the device autonomously enables a system for the monitoring of variations of electric impedance in tissues which are generally linked to local metabolic conditions. By recording these variations in electrical impedance, the system provides real-time information on tissue response to treatment.

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FIELDS OF APPLICATION

ORTHOPEDECS AND TRAUMATOLOGY: muscle and tendon lesions, degenerative pathologies of the bone and joint system, fractures and pseudoarthrosis, vascular bone pathologies

RHEUMATOLOGY: in rheumatic and inflammatory conditions.

PHYSIATRICS: as a supplement to rehabilitative therapy and prevention treatments for muscular-skeletal system pathologies and neurologic disorders.

SPORTS MEDICINE: osteitis pubis, tendonitis, contractures and muscle tears, sprains and contusions.

PHLEBOLOGY AND ANGIOLOGY: lymphatic, inflammatory and post-traumatic edema.

DERMATOLOGY AND AESTHETIC MEDICINE: in exposed skin lesions (sores and ulcers) for faster tissue regeneration.

PAIN MEDICINE

AESTHETIC MEDICINE



CTU MEGA 20

DIAMAGNETIC PUMP

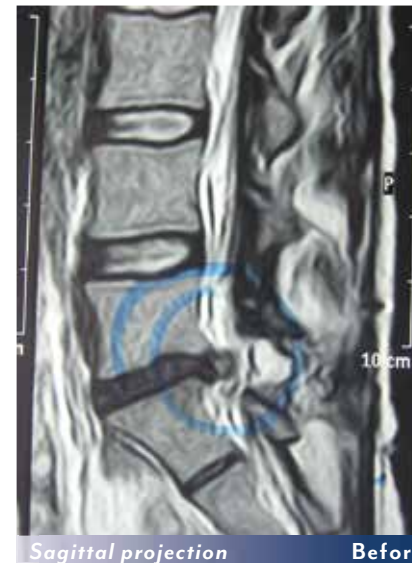
When set with the right parameters, the four mechanisms of CTU Mega 20 action permit the treatment of various pathologies in their various phases of evolution.



MRI CO RED

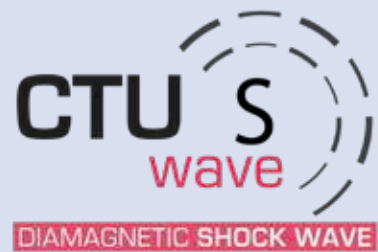
Patient: A.T.;
Gender: female;
Age: 37 years ;
Profession: nurse;
Diagnosis: severe herniated discs, with inability to perform any work;
Medical prescription: surgery intervention;

“After the twenty-third treatment with the diamagnetic pump, the patient no longer presented any symptoms of herniated disk. After the twenty-fifth treatment, the patient resumed his previous activities without any problem.” dr. P. Laudikos





COMPLETION TECHNOLOGY:



ENHANCING YOUR THERAPEUTIC PROCESS



CTU S WAVE

DIAMAGNETIC SHOCK WAVE

The shock wave is produced by an interaction between the electromagnetic coil field flow and an acoustic lens composed of a highly diamagnetic alloy.

Classic shock wave generators produce only one wave shaper and for such reason do not permit the adaptation or modulation of space gradients as required by the pathology, depth of treatment, and anatomical area.



The **CTU S Wave** diamagnetic generator permits intervention on wave spatial gradients through the use of special acoustic lenses whose wave focus capacity recalls the Fresnel lens principle.

THE FIRST SHOCK WAVE WITH A DIAMAGNETIC GENERATOR



CTU S Wave combines the effects of the energy component induced by the pressure field linked to the shock wave with diamagnetic repulsion effects, associating biostimulation action with a drainage effect that permits an acceleration of treatment times for optimized recovery times.



Completely painless

CTU S Wave permits the simultaneous adjustment of both energy flow density and shock wave rise time modifying the space-time profile of the impulses emitted on the basis of the anatomic-pathological lesion in question and the tissue's characteristic of acoustic impedance.



MECHANICAL VIBRATION THERAPY

Controlled vibration induces involuntary muscle contractions and de-contractions with the relative neurological response.



CTU V Wave is equipped with a built-in electro-myograph reader that measures the echo produced by the spinal reflex arc.

EMG BIO-FEEDBACK IDENTIFY THE BEST THERAPEUTIC FREQUENCY



On the basis of the muscle response checked by the EMG system and the treatment objectives established, the **CTU V Wave** device modulates and adapts vibration frequencies in order to produce a randomized acoustic spectrum that annuls the effect of muscle inurement.



By monitoring muscle response, the **CTU V Wave** permits a real-time check on the acoustic impedance of the coupling between tissue and generator, and consequently the modulation of the energy reflected by the stationary waves, in this way optimizing vibratory action.

CTU V WAVE
VIBRATION TRAINING

The primary effects of the *CTU V Wave* regard the muscle strengthening, trophism, and recovery. The device can also be used to prevent reductions in muscle mass associated with aging.

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CTU mega 20

DIAMAGNETIC PUMP

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SINCE ALWAYS
WE DESIGN TECHNOLOGY
AIMED TO EFFECTIVELY SUPPORT
THE DOCTOR-PATIENT RELATIONSHIP.

EXCELLENCE WHICH INNOVATES.

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WELCOME TO THE FUTURE OF THERAPY.

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