



WINTECARE®

T~PLUS



INTRO

In the therapeutic field, everyone wishes to achieve results fast. But what can actually speed up treatment time? The answer is obviously extremely complex and controversial, but to simplify it as much as possible, it could be: you need more energy, in less time, without side effects. T~Plus, in this sense, is a device that, more than any other, allows large amounts of energy to be transferred in just a few seconds, minimising the undesirable effects of superficial thermal overheating and maximising energy absorption in the deep tissue, reducing application times. T~Plus is the only device in the world that was tested and monitored for this purpose and whose results are published in scientific journals.



- Less time needed for each treatment
- Better results with fewer treatments
- Less time to restore your health



A FEW NOTES ON INSTRUMENTAL PHYSICAL THERAPY

Today, medicine does not limit itself to heal patients in the strict sense of the word, it must also provide an improvement in quality of life. Orthopaedics and neurology are not exempt from this requirement. While pharmacology focuses primarily on managing the patient's symptoms, surgery intervenes when there are no other alternatives. However, both these solutions have a cost in terms of tolerance and physical impact on the patient. This is where conservative physical therapy can play a critical role. In fact, it takes a conservative approach that helps the patient's body to recover from a condition through paths that do not require drastic solutions such as removing/changing an anatomical part (surgery) or altering the biochemical balance of the tissue (pharmacology).

It is a therapy that stimulates the body's ability to regenerate itself. Thus, it is less addictive and typically has less risks associated to it than other established medical approaches.



Physical therapy is based on the principle that each body needs a specific amount of energy to change its status.

A diseased tissue is not an exception. No matter whether it is electrochemical, mechanical, thermal or electromagnetic, physical therapy uses different forms of energy to stimulate reactions within the tissue, and the type, amount and intensity of this energy has an impact on the quality of the result and the time taken to achieve it.

Compared to other electro-medical equipment, our technology allows the body's endogenous responses to be accelerated without side effects by transferring large amounts of energy to the tissue in the shortest possible time, and to do this, it applies an electromagnetic field by contact.

TECAR TECHNOLOGY

Tecar is the acronym of **T**rasferimento **E**nergetico **C**apacitivo **R**esistivo. It is actually an Italianisation of the CRET acronym, more commonly used in the scientific field, namely: **C**apacitive **R**esistive **E**nergy **T**ransfer.

A tecar device, therefore, transfers energy to the tissue by contact with an electromagnetic field through two methods: capacitive and resistive, with the goal of stimulating controllable endogenous biological responses.

What are the main parameters for assessing the efficacy of a cret device?

The first parameter is **Frequency**, meaning the number of times (per second) that the polarity of the electromagnetic field applied to the body is reversed. According to scientific literature, the frequency applied by a cret device should be around 0.5 Mega-Hertz. Based on the electrical characteristics of the different types of tissues in the body, this frequency allows both the magnetic and electrical effects of the applied field to be exploited, thus providing access to a greater number of tissue responses and consequently a therapeutic spectrum wider than other types of physical therapy device.

Another parameter for measuring the efficacy of a cret device is the amount (**Intensity**) of current that can be transferred or generated within the tissues. This parameter is related both to the thermal and non-thermal effects of the device. High current levels cause clinically significant temperature increases, while moderate current levels stimulate tissue repair without increasing tissue temperature beyond the physiological threshold.



Two other elements that are useful in assessing the therapeutic effects based on the mass of tissue treated are: **Energy**, which can be expressed in Joules, and **Power**, which can be expressed in Watts, meaning the amount of energy transferred to the tissue for each second of treatment (e.g., 10 Watt / sec x 10 = 100 Joule).

Larger amounts of tissue require larger amounts of energy, which need a high-powered device so as to transfer the energy in a short time. Depending on the portion of tissue treated and the therapeutic goal, a session may need from a few thousand joules to over a hundred thousand joules.



How is the energy transferred?

The electromagnetic field (the current) interacts with the electrolyte content (Cl⁻, Na⁺, Ca⁺⁺, K⁺, etc...) present in the body tissues and, depending on the conductivity and permittivity it generates a specific amount of thermal effect associated with other tissue responses helpful in various clinical conditions. More generally, the body subject to an electromagnetic field behaves like a complex semiconductor composed of tissues with different conductivity and permittivity and tissues with different resistance and impedance.

The most obvious effect is the thermal increase caused by the flow of current through the tissue, which is partially transformed into heat by Joule's law.

There are other effects on the tissue that are not caused by the thermal increase, but are simply related to the electrical and magnetic effects that the current is able to generate. The literature contains several journal-published impact factor studies that show how the electromagnetic field at 0.5 MHz can promote the proliferation of mesenchymal stem cells or the vitality of various leukocyte lines while, on the other hand, it has a cytostatic effect of



slowing down cells that are harmful to the body.

Among the assumptions that scientific literature uses to explain this type of tissue reaction, the most widely accepted are:

- the ability of the current to polarise organic molecules and to favour their binding to more complex molecules
- the ability to affect the cell membrane potential and consequently cellular metabolism
- the ability to affect the chemical gradient of the tissue matrix

In relation to the co-existing causes mentioned above, the effects documented in the scientific literature in connection with the application of the 0.5 MHz electromagnetic field to the human body can be summarised as follows:

1. **Increase in local blood perfusion**
2. **Vasodilation**
3. **Temperature Increase**
4. **Drainage of excess fluids**
5. **Cell proliferation**

Depending on the power absorbed, the current transferred and the amount of tissue treated, the therapist is able to define which of these effects will be predominant within the treated tissue.

How can we check “where” these effects occur?

This depends on the type of electrode applied: in resistive mode, the joule effect occurs mainly near to the tissues with higher electrical resistance such as bones, ligaments, and tendons; in capacitive mode, the effect occurs mainly in the vicinity of the electrode and more significantly in areas of high conductivity such as muscle tissue.

RESISTIVE AND CAPACITIVE MODE

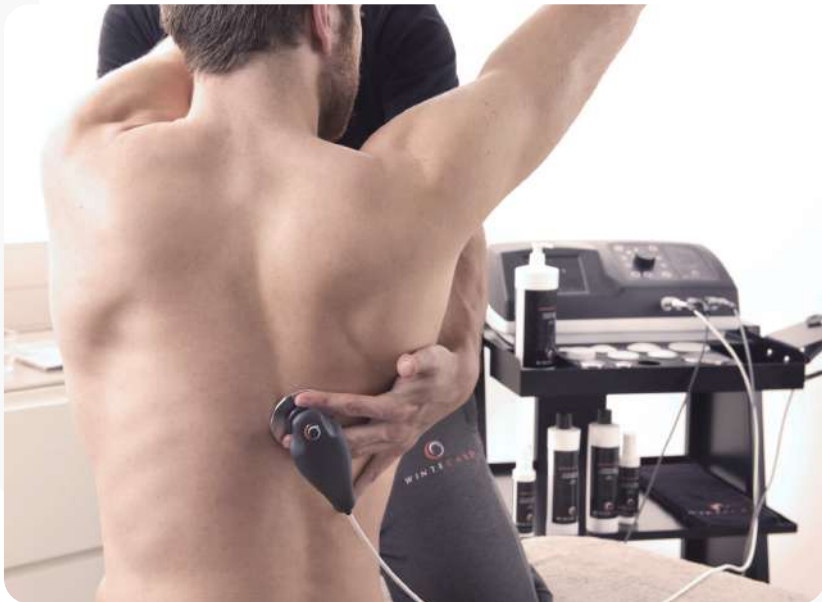
By definition, tecar technology must have two working modes that allow it to act differently on different areas of the body and their respective tissues.

In **resistive** mode, the therapist can:

- quickly increase the temperature of “hard tissues” such as bones and joints
- increase blood perfusion with increased oxygen saturation
- stimulate vasodilation
- promote functional tissue repair through the proliferative effect of a 0.5 MHz electromagnetic field

In **capacitive** mode, will be able to:

- quickly increase the temperature of “soft tissue” such as muscle, fascia, dermis and fat
- promote drainage of excess fluids
- stimulate venous vasodilation by reducing the tone of the adjacent tissues



CREAM-FREE MODE

One of the potentials of tecar technology is the possibility to combine it with manual therapy in order to multiply the therapeutic effects.

Normally, a tecar device requires conductive cream to be applied to the human body. The purpose of the cream is to reduce as much as possible the electrical resistance of the skin, which is otherwise highly resistant to current. While the cream solves this problem, it also makes the skin slippery and difficult to manipulate when complex structural manoeuvres are required or when myofascial tissue needs to be treated.

T~Plus is the only tecar device in the world that gives the operator the opportunity to transfer large amounts of energy to the tissues even without using conductive cream.

This unique feature gives the operator using T~Plus a much wider range of action in all cases where myofascial techniques are required or when accurate osteopathic manoeuvres need to be applied in combination with a device.

No cream also means more power without having to constantly move the electrode. The thermal increase occurs gradually, without annoying peaks, making the treatment pleasant for the patient and less tiring for the operator.





BENEFITS DURING REHABILITATION

LESS TIME, BETTER CLINICAL RESULTS

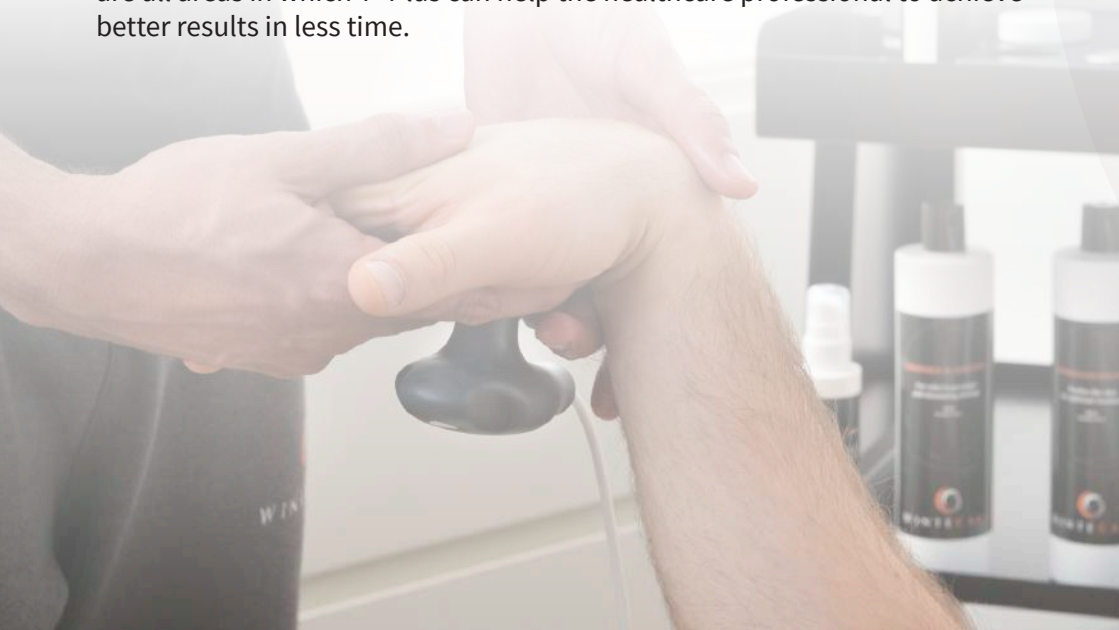
The primary challenge of any therapy is to speed up healing time.

The difficulty in achieving repeatable therapeutic results lies in the multiple interconnected factors that affect the body's ability to regenerate itself. Oxygen, nourishment, drainage, regeneration... these are all fundamental factors in the healing process of any tissue and depend substantially on the circulatory efficiency of the body.

T~Plus is the most efficient, intuitive and fast device available to a healthcare professional to control these factors and promote endogenous healing processes at any stage of the rehabilitation process: from the early inflammatory stage to full functional recovery of the patient.

No other physical therapy device can simultaneously guarantee **depth** of effect, **wideness** of tissue response, **precision** in energy management, **selectivity** of thermal and non-thermal responses associated with extreme **versatility** in treatment management.

Pre- and post-surgery, tendinosis, peritonitis, muscle tears, sprains, vascular insufficiency, contusions, trauma to the locomotor system, lumbago, cervicgia, brachialgia, restricted range of motion, frozen shoulder, myofascial pain syndrome, arthrosis, chondropathy, ligament tissue damage, are all areas in which T~Plus can help the healthcare professional to achieve better results in less time.



PERFORMANCE BENEFITS

IMPROVED RECOVERY, INCREASED TRAINING LOAD

If the definition of training is the set of activities necessary and useful to achieve a goal, it is easy to understand that every action we take in preparation for a PERFORMANCE will have an impact not only on the final outcome, but also on the effects of other preparatory actions.

If one trains hard today, tomorrow he/she will need to deal with the consequences of that hard training even before gaining any benefits. If one does not train, one must ensure that rest gives the body the greatest possible recovery.



DOMS, REST, BIOMECHANICS, RANGE OF MOVEMENT, STRESS... all affect the quality of training and consequently PERFORMANCE. Amateur athletes, professionals, employees, managers... Millions of people need to do better, every day, and need an adequate response to this need. T~Plus is the ideal partner for the sports therapist who wants to use this opportunity.

Muscle recovery, sleep quality, stress management, biomechanics support, and tissue quality are areas of treatment where the power of T~Plus can make a big difference.

WINTECARE has been developing for years treatment programmes proven in the field of professional sports, with hundreds of treatments every year.

EFFECTS ON THE BODY

PAIN REDUCTION

TISSUE REGENERATION

INCREASED BLOOD PERFUSION

INCREASED LOCAL OXYGEN SATURATION

IMPROVED TISSUE VISCOELASTICITY

EDEMA REDUCTION

INFLAMMATORY PROCESS MONITORING

DEPTH SCIENTIFICALLY PROVEN

EXTREMELY PLEASANT TREATMENT

PHYSIOLOGY AND TREATMENT

As stated, **T~Plus**, transfers energy to the tissues through an electromagnetic field at 0.5 MHz. The energy is transformed into a healing, circulatory or thermal effect depending on the amount of energy transferred, and each of the effects is useful in specific clinical conditions. Whenever pain or inflammation occurs in the musculoskeletal system, T~Plus makes a difference.

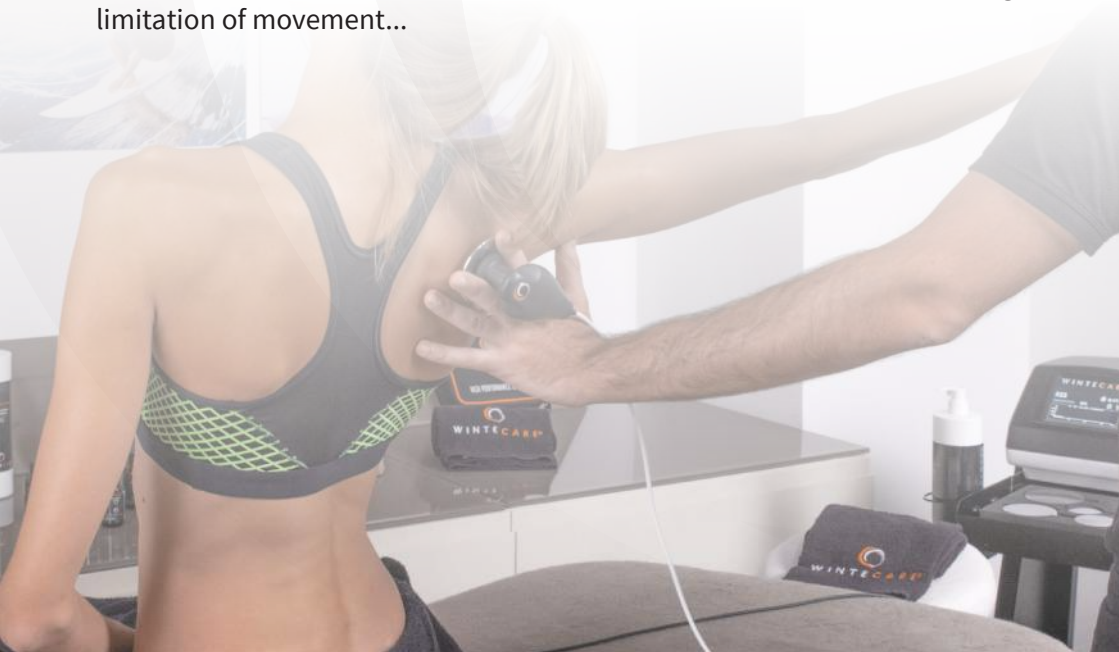
Let's review a few examples:

we usually think that inflammation is harmful; in fact, **inflammation is a useful, necessary and desirable process** in order to repair the body from any injury. The point is to be able to manage this process by limiting its potential side effects and thus preventing it from **becoming chronic**.

As we know, a typical inflammation reaction consists of four components:

- **inducers** start the inflammatory response;
- **sensors** detect them;
- inflammatory **mediators** are induced by the sensors;
- **effectors**, meaning the target tissues of the inflammatory mediators.

If we compare the body to a city and the tissues to the streets and buildings that make it up, we could try to imagine what happens to a body that suffers an injury. Regardless of the area of impact, the body would react to the event with the typical acute inflammatory reaction: pain, redness, heat, swelling, limitation of movement...



Inducers (the cause of the injury) would trigger the specialised sensors to activate the inflammatory process. In the example of the city above, inducers could be associated to an earthquake or a damaging weather event.

The **sensors** would lead to the production of specific groups of mediators. In the case of the city, we could associate the sensors to the cameras and related communication systems used to identify the damage and coordinate the various specialised operators during the work.

Inflammatory **mediators** can be classified into distinct groups according to their biochemical properties and can have different origins. In particular, they may derive from plasma proteins or they may be secreted by cells: some of them are preformed and stored in the granules of specialised immune cells; others are preformed and circulate as inactive precursors in the plasma; still others are produced directly only in response to appropriate stimulation. Thus, even in the body at the microscopic level, every action and reaction is coordinated by a complex communication between the various parties in the inflammatory process, and this communication mainly occurs by electrochemical means. Just like the communicative complexity that would characterise the information exchange between specialised operators repairing streets and buildings in our imaginary city after the damage suffered.

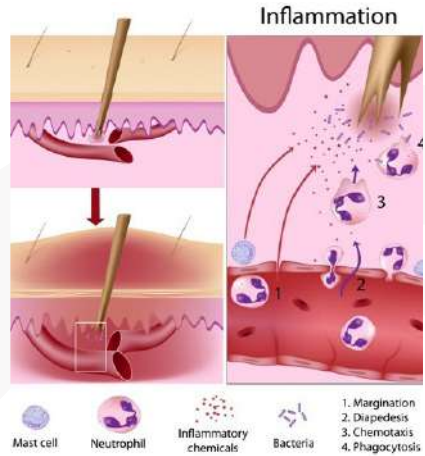
The final effectors of an inflammatory response are tissues and cells, whose functional conditions are specifically affected by inflammatory mediators.



Back to the city example, we could associate effectors with all the damaged buildings, agents, workers and the rest of the infrastructure involved in the repairs.

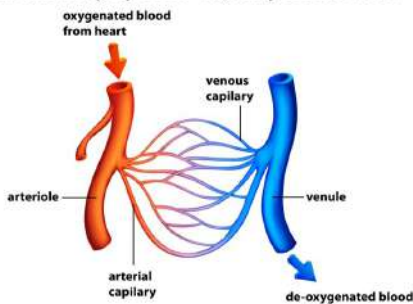
The response to specific inflammatory mediators is mostly ubiquitous, that is it occurs everywhere in tissues, even though there are specific and distinct effects in different tissue and cell types. In general, however, the most obvious effect of inflammatory mediators is to affect the condition of local blood vessels, causing vasodilation, extravasation of leukocytes (or leukocyte diapedesis) and leakage of plasma and the molecules it contains (such as antibodies, anti-microbial substances and other protein compounds) into the surrounding tissue. In addition, inflammatory mediators have equally important effects on neuroendocrine and metabolic functions and on the maintenance of tissue homeostasis in general.

In the case of injury, in order to bring to the site the “specialised operators” and the material necessary to carry



out the repairs, the human body, in the vicinity of the damaged tissue uses accurate procedures and specific means of internal communication to generate effects such as vasodilation, temperature change and change in tissue permeability. We can compare a leukocyte, more commonly known as a white blood cell, which emerges from a capillary to “transmigrate” to the damaged tissue as a security guard or a skilled worker who, having made his way through the urban traffic, reaches the site, crosses the barriers and takes position to perform his task. Sirens, barriers, radio communications, temporary traffic signals, traffic detour... vasodilation, vasoconstriction, temperature, chemotaxis, prostaglandins. Everything contributes to achieve the goal.

Circulatory System Capillary Blood Flow



The aforementioned examples help us understand that the outcome, efficacy, and efficiency of repair depends on the efficiency of the circulatory response. In the human body, as in a big city, materials, skilled workers, police officers and all those who have a role in the maintenance of the buildings move through high-speed communication routes, urban or pedestrian, so in the body there is a large transport network that to simplify can be associated with the circulatory system which in turn can be split into venous, arterial and lymphatic systems.

The fluidity of the circulation, the ability to promptly act to divert it in case of need, the presence of accesses to the intervention area,

a well organized outflow system to remove from the area what hinders the works are all factors that have a crucial effect on the repairs.

How can these processes be positively affected to accelerate body repair?

Through T~Plus it is possible in a fast, targeted and safe way.

Specifically, a well-designed tecar device can generate 5 tissue and circulatory responses:

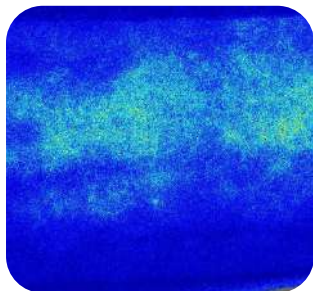
The increase in blood perfusion can be used to increase the supply of oxygen and nutrients in the blood. If fuel and repair materials reach the “construction site” more easily, the “repair works” benefit greatly.

Drainage can be used to dispose of unwanted waste and accumulation within the tissue and this is particularly useful in cases of edema.

base



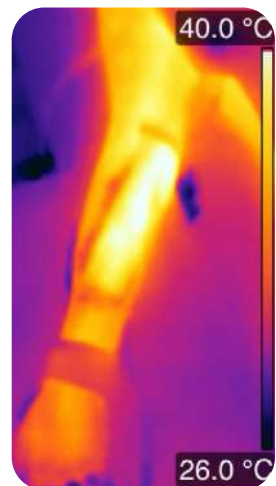
post



base



post



Stimulated **vasodilation** in targeted areas can be used to facilitate the disposal of inflammatory catabolites or other waste material. If the outflow pathways from the “construction site” towards the disposal centres are wider, it is easier for debris and what is not needed to be removed faster thus improving the efficiency of the “workers”.



Increased temperature can be used to reduce tissue strength, increase tissue flexibility, and promote metabolic activity. If a stage of the work requires the removal of a damaged tissue or the mechanical improvement of other sections, thermal energy can be an excellent ally.

Finally, the **stimulus to cell proliferation** can help to increase the quality of the repair process of functional tissue, meaning the set of cells that perform a given task in a specific organ. Another extraordinary feature of the body is that most tissues are capable of regenerating themselves when conditions allow. Referring back to the example of the “construction site”, it is as if some of the bricks and components of the building were able to reproduce themselves or be produced directly on the construction site. A stimulus that specifically increases this phenomenon accelerates the completion of the repair.



SEVERAL TOOLS IN ONE

RESISTIVE MODE

It can quickly stimulate an increase in localised blood perfusion, increase hard tissue temperature and support the body's repair processes.

CAPACITIVE MODE

It is useful to drain, increase soft tissue temperature and modify viscoelasticity through targeted thermal increases.

HYPERTHERMIC ELECTRODES

They are useful to accelerate the thermal response of the tissue.

HYPOTHERMIC ELECTRODES

They are specially designed to delay the thermal increase, ideal in case of severe inflammation and edema.

DIATHERMIC FIBROLYSIS

A treatment mode associated with electrodes designed to combine the effects of diacutaneous fibrolysis with thermal increase.

STATIC MODE

Designed to allow the operator to monitor the patient's exercise during the application of therapy while keeping the hands free from the handpiece and electrode. Ideal for recovering joint movement.

DOSIMETRY MODE

It allows to better monitor the doses of energy transferred thus avoiding unwanted thermal increases in proximity of damaged or inflamed tissues.

FIELDS OF APPLICATION

CERTIFIED AS A **MEDICAL DEVICE** FOR THE TREATMENT OF:

- Degenerative arthropathies: e.g. arthrosis, arthritis, and various chondropathies
- Dysfunctions and syndromes of the spine: lumbago, back pain and cervicalgia with and without radiculopathies
- Musculoskeletal disorders typical of athletes
- Musculoskeletal disorders in the traditional patient: e.g. injuries and accidents with pain and inflammation
- Joint and musculoskeletal pain
- Pain and rehabilitation in patients with neurological disorders: e.g. phantom limb; hemiplegia
- Positive effects on biomechanics in athletes and DOMS
- Bone fractures
- *Induratio penis*
- Rehabilitation from diseases and dysfunctions related to vascular insufficiency in which the localized circulatory stimulus benefits the suffering tissues (e.g. diabetes; sores; lymphedema)
- Post-surgical rehabilitation
- Tendinopathies: e.g. tenosynovitis, peritonitis and tendinosis

NON-MEDICAL APPLICATIONS:

- Muscle recovery
- Biomechanical optimization
- Cellulite
- Wrinkles
- Localized fat
- Stress



APPLICATION PROGRAMS ACCESSIBLE THROUGH T~PLUS



For the revitalization

New physical therapy technologies help to take care of your body even in old age. Simple weekly programs give extraordinary results for those who want to enjoy energy-full lives.

For sleep quality

Targeted thermal increase and stimulation of peripheral circulation, at strategic points of the body, to enjoy regenerating sleep.



In case of pain

The mechanoreceptors and chemoreceptors responsible for pain can be affected through stimuli that counteract their activation such as temperature difference and change in peripheral blood perfusion.



For recovery

Controlled increases in blood perfusion facilitate the disposal of metabolic wastes generated during physical effort.

For biomechanics

The targeted hyperthermia makes it possible to correct some joint disorders and to act on the muscle tone to maximize the support levers.



For increased focus

Controlled micro-circulatory stimuli at low energy intensity have positive effects on the ability to focus.

For relaxation

Muscle relaxation, topical treatment of wrinkles and fluid accumulation are all affected by localized circulatory stimuli.



In case of cellulite

The interruption of circulatory stasis and lymphatic drainage are the necessary steps to guarantee visible and long lasting results.



In case of stress

Hormone levels are sensitive to changes in body temperature and are closely interconnected with the peripheral circulatory system. Controlling them means being able to act on stress.

In case of inflammation

Increased micro-circulation, oxygenation and proliferative stimulus can be strategically combined to accelerate the natural resolution of the inflammatory process.





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CONDUCTIVA-CREAM

Optimal acceleration of tissue repair time

WINTECARE

WINTECARE

WINTECARE

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CHARACTERISTICS

POWER

T-Plus is a device for physical therapy that more than any other allows the transfer of large amounts of energy while minimising unwanted overheating of superficial tissues and allowing an accurate modulation of the quantities according to the therapeutic objective.

EFFICACY

Five studies already published in strong impact factor scientific journals and many others in the process of publication highlight the device's effects and its versatility in managing energy levels and reaction speeds.

INNOVATION

Every second, the device measures the actual amount of energy transferred to the tissue and ensures accuracy in the energy dose to fit the specific treatment.



SCIENTIFIC RESEARCH

Wintecare collaborates with two universities in Europe that each year develop studies published in strong impact factor journals using its equipment.

TRAINING PROGRAMS

The Wintecare team is set-up to develop training programs tailored to the needs and interests of the client and a basic training on the use of the device is always included in the purchase. Courses can be made available both in-person and on-line.

PATENTED TECHNOLOGY

The innovative method of generating radio-frequencies associated with the power delivery mode has been filed as an international patent.

KEY COMPONENTS

- 1 Hyperflexible plate
- 1 Capacitive mode
- 1 Resistive mode
- 4 Resistive electrodes
- 2 Capacitive hypothermic electrodes
- 5 Capacitive hyperthermic electrodes
- Radio-control
- Power cable
- Protective electrode bag

SPECIAL ACCESSORIES

Enhanced hypothermic electrode

- High power without thermal increase

Resistive electrodes without cream

- High levels of current combined for maximum grip on the skin

Cables for fixed plate mode

- Top precision in applied energy dose

Diathermic fibrolysers

- 1 Capacitive mode
- 1 Resistive mode

To make the most of the advantages of fibrolysis with less pain



TECHNICAL CHARACTERISTICS

- Medical Device with CE certificate Medical Class II B
- Frequency: 0.447 MHz \pm 5%
- Power: CAP: 450 VA / RES: 300 W
- Weight: 6.8 kg
- Dimensions: 50cm x 27cm x 19cm
- Maximum current: 2 A



W I N T E C A R E[®]

WINTECARE SA

+41 (0)91 22 55 229

Via Motta 10 | 6830 Chiasso
Switzerland

www.wintecare.ch
info@wintecare.ch

