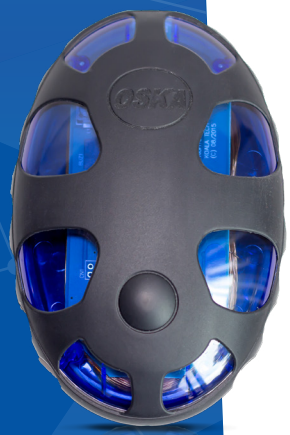


OSKA | PULSE

OSKA PULSE AND ITS RELEVANCE IN THE TREATMENT OF MUSCULOSKELETAL DISORDERS

OSKA PULSE IS AN FDA REGISTERED CLASS 1 MEDICAL DEVICE

INTRODUCTION

Oska Pulse replaces the missing endogenous 'signals' normally generated during exercise or natural body movement, by modulating the ion transporter channels through the plasma membrane.

EXPLANATION:

If movement is inhibited by pain (e.g. Osteo-arthritic condition) forced immobility or the fear of causing more damage to an injured site, Oska Pulse can be applied, simulating exercise without physical stress at the cellular level, thereby dramatically reducing the recovery time.

The Oska Pulse technology was developed by Medic Technology International Pty Ltd, Western Australia, manufactured in the USA and distributed by Oska Wellness Inc. in San Diego. Oska Pulse employs a well proven mode of therapy in a unique and compact form of delivery. The unique aspect of the Oska Pulse system in clinical terms lies in the specially designed PEMF Sequential Treatment Protocol that provides appropriate treatment applications automatically, thus providing a high level of safety and convenience for the user.

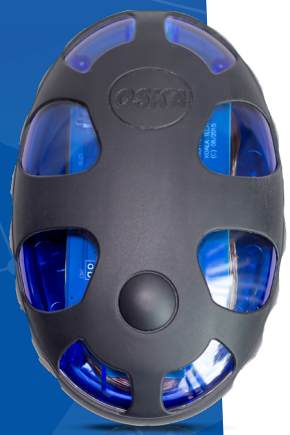
Complex but extremely low frequency electro-magnetic fields are produced via Oska Pulse's spiral coil. Like radio waves, but suitably configured by the microprocessror, they pass through the body. A small portion of the electro-magnetic energy is converted into an electrical effect of around 0.7 millivolts, similar to that of normal cellular resting potentials.

As these charges are induced and subsequently dissipated through the tissue, they resemble the normal bio-electrical activity seen in healthy tissue in response to exercise. To be more specific, the Oska Pulse modulates ion transporter channels across the plasma membrane in a fashion that replicates modulation by vigorous exercise without the associated physical trauma.

By mimicking these normal bio-electrical patterns, specific beneficial cellular processes can be stimulated, leading to a safe and effective treatment for common musculoskeletal disorders.

Each 30 minute therapy session delivers 4 unique "electronic prescriptions" delivered by the microprocessor in a sequential treatment protocol; angio vascular, osseous structural, chondrocyte development and pain modulation.

Experience has shown that 30 minute PEMF therapy sessions are in compliance with the majority of independent findings providing the highest user compliance, while maintaining historical levels of efficacy. Oska Pulse can be worn over clothing and covers an area up to 28cm (11 inches) from the coil centre. See more at https://medictechnology.com.au/using-oska-pulse/



A very high level of success has been experienced in the treatment of muscular-skeletal disorders ranging from sports or work related injuries to Osteo-arthritic or general degenerative conditions. See further reports on our web site https://medictechnology.com.au/clinical-proof/

Performance/results time frame varies according to the disorder and individual metabolic response.

OSKA PULSE IS DRUG FREE, PAIN FREE, COMFORTABLE TO WEAR AND CAN BE USED ALONGSIDE TRADITIONAL MEDICINE TO TREAT ALMOST ALL MUSCULOSKELETAL DISORDERS.

In order to understand how the technology underpinning Oska Pulse can speed the natural healing process, it is necessary to understand the way our bodies respond to injury.

One of the dominant theories of human physiology during the last century was that the rate of tissue healing is improved by increasing blood flow. Much of the research in the early 1950's and 1960's was devoted to changes in blood flow resulting from various heating or cooling modalities.

Exercise is recognised as being a vital factor in speeding the rate of tissue repair. Normal body movement induces a chemical action which triggers the necessary electrical potentials produced across the cellular membrane, stimulating or modulating cellular activity and replication. When these endogenous signals are missing due to injury, pain or other limitations, the natural healing process may be delayed.

THE BODY'S IMMEDIATE RESPONSE TO INJURY

Injury generally produces inflammation. Inflammation is the local, tissue-level response of the body to an irritant or injury. Inflammation has a threefold purpose:

- To defend the body against alien substances.
- To dispose of dead and dying tissue so that repair can take place.
- To promote normal regeneration of tissue.

Indications that the inflammation process is taking place:

- Pain
- Swelling (oedema)
- Redness
- Heat
- Loss of function

Inflammation consists of eight overlapping phases which occur in a specific order but may occur simultaneously, depending on the response rate at the injury site.

Phases of inflammation

1. Injury

2. Ultra-structural changes

3. Metabolic (hypoxic) changes

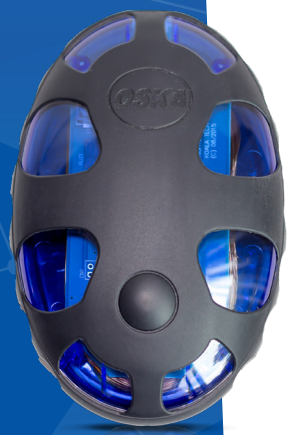
4. Activation of chemical medicators

5. Hemodynamic changes

6. Permeability changes

7. Leukocyte migration

8. Phagocytosis



This page explains the body's immediate response to injury.

Injury:

e.g. Physical agents: (Burns, radiation etc.) Biological agents: (Bacteria, viruses, parasites) Metabolic factors: (Hypoxia)

Ultra-structural changes:

e.g. Eventual breakdown of the cellular membrane so the contents of the cell spill out into the extra cellular spaces. (Typical acute injuries)

Metabolic (hypoxic) changes:

The normal function of the cell requires energy, usually supplied by aerobic metabolism (Cellular respiration)[1]. When a cell is deprived of oxygen (hypoxia) it switches to anaerobic metabolism (glycolysis) to produce energy. Glycolysis cannot continue for long and will eventually lead to a decrease in energy production. Membrane function then slows down as the energy supply diminishes. This in turn decreases the activity of the sodium pump, responsible for maintaining the concentration of intracellular sodium at very low levels. As the sodium pump's activity slows or stops, the sodium concentration level within the cell and its organelles rise, causing an increase in the amount of water to pass into the cell. Excessive water will cause the cell to burst. One cellular organelle is the lysosome, responsible for the supply of enzymes that digest foreign material trapped within the cell. If the membranes of the lysosome rupture, its contents begin to digest other cellular components, including the cell membrane.

Activation of chemical mediators: (Act like traffic police)

Histamine, bradykinin and other chemicals, whose job it is to notify the body that cells have been damaged and to mobilize resources to handle the situation, are handled by ultra structural changes. These chemicals modify and regulate the inflammatory response to attempt to neutralize the cause of the injury and begin removing cellular debris so the repair process can take place.

Hemodynamic changes:

Results in the mobilization and transport of defence components to the injury site, enhancing blood flow through arterial dilation, at the same time re-activating many previously inactive capillaries.

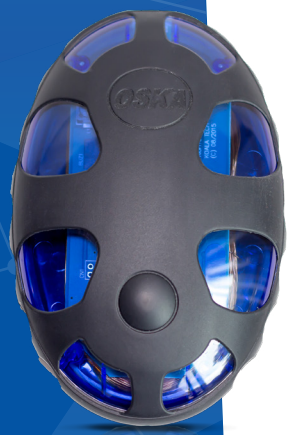
Permeability changes:

Increased permeability occurs primarily to allow leukocytes (white blood cells) to move toward the injury. It also allows great amounts of protein rich fluid to escape. This increases viscosity of the blood which sometimes results in cells becoming so packed they block circulation.

Leukocyte (White blood cells) migration:

Once outside the vascular wall, leukocytes migrate to the site in a haphazard fashion which allows a concentration of leukocytes at the most damaged area. Two types of leukocytes that play a major role are neutrophils and macrophages. Neutrophils are the most abundant type of white blood cells and form an integral part of the immune system. They move more swiftly than macrophages, arriving at the injury first providing a temporary first line of defence. The role of the macrophage is to engulf and then digest cellular debris and (see Phagocytosis below) and to stimulate lymphocytes and other immune cells to respond to the pathogen.

Cellular respiration[1] describes the metabolic reactions and processes that take place in a cell to obtain chemical energy from fuel molecules. Energy is released by the oxidation of fuel molecules and is stored as "high-energy" carriers.
http://encyclopedia.thefreedictionary.com/aerobic+metabolism



Phagocytosis:

Phagocytosis is the process by which leukocytes digest cellular debris, bacteria and other foreign material into pieces small enough to be removed from the injury site via the lymph vessels.

This is the section that applies to Oska Pulse. All four phases of natural healing are stimulated by the Oska Pulse in a Sequential Treatment Protocol (STP)

OSKA PULSE SPEEDS THE 'NATURAL' HEALING PROCESSES

As with inflammation, tissue repair follows a general process.

1. Cellular response (Auto response)
2. Vascular response
3. Collagenisation (Proliferation)
4. Contraction and reformation (Maturation)

Cellular response (Auto response)

The cellular phase is an extension of the phagocytosis phase of inflammation. During this phase, macrophages scavenge the cellular debris and the circulatory and lymph system drain away the liquefied cellular remains which are mostly small particles of protein; the more protein remaining, the greater the scar tissue.

Vascular Phase: (Oska AV Phase)

The vascular response is a transient phase during which new capillaries are formed. These new vessels deliver greater amounts of oxygen and nutrients to the wound site. A process known as capillary budding is the mechanism of the vascular phase. Endothelial2 cells of existing blood vessels at the edge of the wound begin to divide by mitosis3. New cells squeeze themselves between the existing cells, forcing the end cells to fill the wound area. Bud sprouts form adjacent to each other, meet and form a network of capillary arches, or a capillary arcade which eventually fills the wound area. This provides the wound area with abundant circulation necessary to support collagenisation.

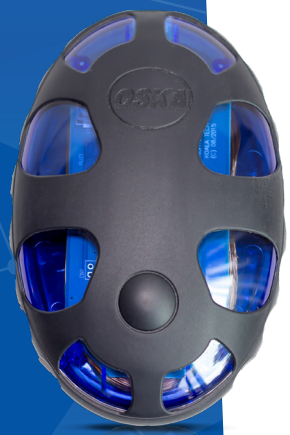
Collagenisation: (Oska OS & CD Phase)

Collagenisation is the process of manufacturing and the laying down of collagen. Collagen is a fibrous protein and the main component cartilage, ligaments, tendons, bone and teeth. Firstly, fibroblasts4 migrate along the strands of fibrin into the wound area, manufacturing strands of collagen which are extruded haphazardly into the wound space. The degree of vascularisation and collagenisation are maximised after about 4 to 6 days. However, strength comes only after the collagen is realigned along the lines of force, a process that may take years without physical therapy (or use of Oska Pulse).

Contraction and Restructuring: (Oska CD Phase)

Contraction and restructuring is a process that causes scar tissue to contract. Over time, much of the capillary arcade collapses and is compressed with surrounding collagen which accounts for much of the contraction. Reduction in blood circulation through the wound will result in a paler appearance.

Restructuring refers to the re-organisation of collagen fibres, originally laid down in a haphazard fashion, into parallel layers. This provides tensile strength to the injured area. This restructuring occurs in response to body movement creating stress over the scar area. The scar senses the direction of movement and lines up the fibres parallel to these lines of force.



2. Endothelial cells form the inside lining of blood vessels, lymph vessels and the heart.
3. Mitosis is the process by which a cell separates its duplicated genome into two identical halves.
4. A Fibroblast is a type of cell that synthesizes and maintains the extracellular matrix of many animal (human) tissues. Fibroblasts provide a structural framework for many tissues and play a critical role in wound healing. They are the most common cells of connective tissue in animals.

THE IMPORTANCE OF EXERCISE IN THE RECOVERY PROCESS.

Exercise is essential during the healing process for two reasons. First, exercise stimulates circulation therefore increasing oxygen delivery to the wound site. Second, it stresses the tissue thus guiding the restructuring of collagen. However, physical exercise must be controlled as there is a fine line between the amount of exercise required to optimise tissue repair and that which will damage the repair.

SUMMARY:

As physicians around the world are becoming increasingly concerned with the effects of long term use of pain killer medication, Oska Pulse is an obvious 100% drug free option. This type of PEMF technology has not been available until now in such a convenient, affordable, user-friendly product.

With no known side effects, the Oska Pulse is setting a new standard in the rehabilitation and maintenance of acute and chronic musculoskeletal and soft tissue conditions such as injury recovery, joint stiffness and ultimate pain relief.

For further reading and research on the subject of PEMF therapy, visit the US Library of Medicine at www.ncbi.nlm.nih.gov/pubmed/?term=pemf+therapy

More information on Oska Pulse can be found on our website www.medictechnology.com.au

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