



# PEMF AND WOUND HEALING

**THE BODY'S NATURAL** healing process is an extremely complex, but orderly process, of four stages. However, the rate at which healing takes place depends on many factors. Apart from systemic elements, age, nutrition, general health and environmental influences all contribute to the rate of successful wound healing.

PEMF is a revolutionary therapy that may aid in wound healing by increasing blood flow but it has also been shown to regenerate nerve and tissue growth.

In my previous article, 'Oska - Musculoskeletal Disorders' I discussed the role of Oska Pulse and how it has been designed to assist these four phases of natural healing,

- 1. Hemostasis Phase.** (Cellular)
- 2. Inflammatory Phase.** (Vascular)
- 3. Proliferation Phase.** (Collagenization)
- 4. Maturation Phase.** (Restructuring)

## FIRST PHASE:

While PEMF may not have a significant effect on the first phase which, in reality, is an automatic response to injury, the next three stages may be significantly enhanced by the use of sequentially pulsed electromagnetic fields of specific construction (frequencies, pulse width, shape and intensity).

## SECOND PHASE:

The second phase is often referred to as the 'defence' phase, where white blood cells (neutrophils) focus on destroying bacteria. Macrophage cells then arrive to remove cellular debris. This phase is often associated with inflammation.

*The first 10 minutes of each 30-minute protocol of Oska Pulse is devoted to assisting with capillary arcade, (a network of capillary arches) increasing blood supply to the area being treated. It also stimulates the lymph system to assist in removing cellular debris.*

*With regards to wound healing, this is the most significant of all four treatment protocols delivered by Oska Pulse.*

## THIRD PHASE:

The Proliferation is the process of manufacturing and laying down the fibrous protein - Collagen. New blood vessels are formed, and epithelial cells are created to migrate and cover the wound area.

*The second protocol of Oska Pulse is designed to assist the process of collagenisation.*

*The frequency chosen for this part of the process is listed as significant to the enhanced development of collagen fibre. This stage also assists in the maturation phase. (see below)*

## FOURTH PHASE:

During the final Maturation phase, much of the capillary arcade collapses and is compressed with surrounding collagen. As this new tissue gains strength, restructuring occurs in response to body movement, creating stress over the scar area. The scar senses the direction of movement and lines up collagen fibres parallel to these lines of force.

*With regards to wound healing, the Oska Pulse is designed to reduce scarring by helping to re-organise collagen fibres, thus also improving tensile strength.*



## EXAMPLES OF OSKA PULSE IN ACTION ON A 50-YEAR-OLD MALE:

The images below show examples of using Oska Pulse on the face and hand, and the results of not using Oska over the same period of time on the elbow. Note the differences in how tissue and scarring has been resolved.



**Day one  
after cycling  
accident**

1<sup>st</sup> April, 2019



**After Oska  
Pulse use**

8<sup>th</sup> April, 2019



**Day one**



**After Oska  
Pulse use**

8<sup>th</sup> April, 2019



**Day one**



8<sup>th</sup> April, 2019  
**But not  
using  
Oska Pulse**

### References:

- <https://onlinelibrary.wiley.com/doi/abs/10.1002/bem.21832>
- <https://www.pemftherapyeducation.com/2017/08/pemf-therapy-accelerates-wound-healing/>
- <https://www.ncbi.nlm.nih.gov/pubmed/24395219>
- Electromagnetic fields and cells J Cell Biochem 1993 Apr;51(4):436-41.
- Human Physiology, Rhoades and Pflanzer (1992). Saunders College Publishing, USA.
- Disorders of Wound Healing. T.K Hunt (1972).
- Wound Healing for the Dermatologic Surgeon, JG Goslen (2012) Springer Science & Business Media.
- Sports Induced Inflammation, American Academy of Orthopaedic Surgeons (1990).