Exercise – Electrical Energy Fields – Oska Pulse

Exercise is vitally important to cell regeneration and therefore recovery after injury, surgery, or in order to combat degenerative conditions such as osteoarthritis.

It's the compression and re compression of the proteoglycan cellular matrix during exercise that, through chemical action, causes a voltage differential across the cell membrane, stimulating regeneration.

These stimuli are referred to as Strain Generated Potentials or SPG's.

Exercise results in the movement of positively charged ions of the fluid matrix past the fixed negatively charged sulphated proteoglycans. Thus when bone and other tissues are mechanically deformed, they become electrically charged. These charges have an effect on cell function.

When we walk, run or move, the weight of our body causes the cartilage to compress. This compression deforms the entire matrix and forces the high negative charges in the proteoglycans to move closer together. At the same time, the charges across the collagen fibers are deformed, which increases the total negative charge around the fibers. This attracts sodium (NA+) and potassium (K+) ions toward the area.

When the compression forces are released, electro-static and osmotic effects force the matrix back to its original shape. Negative bond concentrations return to normal and, by diffusion, the collagen fibers re-inflate. NA+ and K+ ions move away from the collagen matrix thus allowing the exchange of ions providing an environment for optimal cell regeneration. The energies released during this make and break process, dissipate through the matrix as an electrical pulse.

Oska has been designed to mimic this endogenous electrical energy by producing a modulated PEMF signal that contains four stimuli important to the natural phases of tissue repair and pain reduction.

- Oska, therefore, is invaluable in mimicking exercise but without the loading associated with physical exercise which can sometimes exacerbate a condition rather than assist.

- It is ideal for speeding or assisting recovery from sporting injuries, accidents, wounds, surgery or for combating degenerative conditions such as osteoarthritis and osteoporosis.

Michael Hawker
Medic Technology International Pty Ltd.
mike@medictechnology.com.au