

Dr. P. Heaton.

Consultant Orthopaedic Surgeon.

FRCS (Tr & Orth) Ph.D.

Lower Limb Arthroplasty

(Hip and Knee).

Trauma.

Acetabular Fracture Surgery

**Cyclo-ssage Pro-Personal Therapy System. [PPTS]
Anti-ageing Therapy
By Dr. P. Heaton-Ph.D.
Consultant Orthopaedic Surgeon.**

PPTS in the concurrent concepts of Anti-ageing therapy

Locomotion, an important bodily function is dependent on a healthy skeletal system comprised predominantly of bones, supported by adjacent muscles and ligaments that afford sufficient range of joint movement in order that the subject is able to undertake activities of daily living. An individual's ability to perform activities of daily living is significantly correlated to their level of independence and health status. The sophisticated control mechanisms of the body systems are found in the neurological system, comprising of the brain, spinal cord and the numerous outflow of nerves branches.

The circulatory systems of arteries and veins alongside the heart, function to perfuse and thus provide nutritional support for the body systems. The circulatory system delivers blood rich in nutrients and oxygen to body organs, affording them the ability to function optimally through programmed cell renewal processes.

At the microscopic level, the cellular metabolic centre, the mitochondria functions to metabolise energy stores in order that renewal processes transpire routinely. This is a natural process that confers optimally functioning population of cells combating the ageing process.

The efficiency of the renewal processes diminishes with ageing, and hence the slower healing times for the elderly population when injury occurs. This time dependent diminution in the rate of the renewal processes ultimately results in loss of muscle and bone mass with accompanying functional deficits and decreased range of movement in the joints. Exercises are routinely recommended for maintaining physical strength, however even high impact loading such as may be seen with vigorous exercise may accelerate the ageing process.

Impact mechanics during and following vigorous exercise often induce muscle soreness and bone pains that impedes the individual's ability to undertake sufficient and regular training that enhances metabolic cellular renewal processes. Without this renewal processes the ageing pathway is unconstrained may be even accelerated. The sole purpose of several high profile international research centres currently lies on this fact, the need to replace high impact mechanics with an alternative modality, whilst completely eliminating the undesirable effects of such mechanical loading principles.

Factors that accelerate the ageing process include ill health, injuries such as fractures and dislocations, drug abuse, dehydration, repetitive vigorous exercise and stress.

PPTS combating the ageing process

The Cyclo-ssage Pro Personal Therapy System is a vital tool in combating the ageing process. Cycloid vibrations from the PPTS accelerate micro-circulatory flow of blood in the end arteries and low-pressure flow venous systems. Nutrient delivery to vital organs is thus accelerated, generating higher energy flow metabolic state that mandates anti-ageing, increased cell turnover rates.

Aesthetically, the earliest positive effect of the regular use of the PPTS is noticed on the improved skin tone of the lower back and trunk. This, we currently hypothesize to be a secondary effect of the improvement in the muscle tone of the large muscles in the trunk and lower back such as the latissimus dorsi and trapezius. By increasing the metabolic rate of large muscles, adjacent fatty tissue are metabolised resulting in an improved skin tone and overall aesthetic appearance.

Regular PPTS use simulates dynamic loading of the muscles. Several researchers have reported dynamic loading to be superior to static loading in accelerating metabolic status and strengthening of muscle fibers. To this effect, we have noticed increased strength in the multifidus muscle group with improvement in posture and decreased incidence of back pain secondary to muscle spasms. The multifidus muscle group has recently been reported to be the most important stabilizer of the vertebral column in deep flexion.

Program two on the PPTS generates cycloid therapy mode that induces the most favoured stimulatory response in our cohort of patients. In this mode un-pulsed global continuous sensory flows generate marked elevations in the endogenous concentration of growth hormone. Overall, this stimulates growth and enhances anti-ageing renewal processes.

Alongside the hormonal stimulation seen with PPTS therapy are the increased secretion of endorphins and other chemicals currently being studied for their positive effects that our research group continue to hypothesize on, such as endocannabinoids.

Additionally, several patients report a perception of the therapy modes of the PPTS relieving them of stress and enhancing body rejuvenation following the treatment protocol at our unit at Barley Cliff sports clinic.