

The Role of the Low-level Light Therapy of Pain Management in Physiotherapy

The use of either low-level near-infrared light or low level laser therapy is a common electro-physical agents in relieving pain for rheumatoid arthritis, osteoarthritis, acute and chronic neck pain and tendinopathy. (Bjordal et.al (2003), Bjordal et al.(2008), Brosseau et al(2005), Huang. et al.(2009), Chow et al (2009), Jamtvedt et al(2007) and Tumilty et al(2010))

Contemporarily, it is believed that pain and inflammation over the injury site can be relieved by the light therapy with the mechanisms of photo-biomodulation and photo-biostimulation. The energy of a 'dose' of light was transformed into bio-chemical energy adenosine triphosphate (ATP). The binding of nitric oxide (NO) to mitochondrial respiratory chain changes in mitochondrial metabolism, influences redox signaling, and affects intracellular homeostasis or the proliferation of cells. (Karu (2008), Tafur et al, (2008) and Hamblin (2012).

Physiotherapists will select appropriate light modalities e.g., infra-red therapy, anodyne therapy and laser therapy for treatment of pain based on our assessment and critical analysis. The efficiency and effectiveness of treatments will be accumulated after a course of 10 to 20 treatments with 15-30 minutes in duration over the painful areas or specific acupuncture points. The treatments can be applied daily, an alternate day or weekly basis. The course of treatments can be up to two weeks.

One of the limitations of light therapy is the lack of appropriate controlled and blind clinical trials to validate its effects statistically. Further studies on low-level near-infrared light and laser therapy are the directions to further proven the role of the light therapy in clinical pain management.

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Prepared by Mr. Eyckle Wong, Physiotherapist I, Tuen Mun Hospital
MSocSc (Geron), MBA(HSM), BSc Physio, ACSM (CES)