Quantum Devices, Inc.

"Improving the Quality of Life through the Power in Light"

Quantum WARP 10

WARP-10 LED device delivers high intensity therapeutic photon energy.

The innovative WARP 10 is brought to you by Quantum Devices, Inc. (QDI) the company that invented the high intensity, solid state, lighting systems, for NASA, that have become the gold standards for photobiomodulation research, photo dynamic cancer therapy and agriculture research. The WARP 10 is a high intensity, portable LED unit intended for the treatment of chronic pain by emitting energy in the near-IR spectrum for the temporary relief of minor muscle and joint pain. This includes arthritis and muscle spasms, relieving stiffness, promoting relaxation of muscle tissue, and to temporarily increase local blood circulation where applied.

Quantum WARP 10 Features:

- High intensity 50 mW/cm^2 illuminated surface
- Produces 4 Joules/cm^2 dose in 80 seconds
- Large 10 cm^2 treatment area
- Dose accuracy controlled by electronic timing circuit
- Easy to operate with one hand
- Battery Life: 50 doses with eight (8), AA Alkaline batteries
- Designed to use AA Alkaline disposable or AA NiMH rechargeable batteries
- Low battery indicator to ensure full dose delivery
- Certified wavelength and power output

Light Source of Choice:

Originally developed under a contract for the Defense Advanced Research Projects Agency (DARPA), by QDI the pioneers of the NASA LED technology, the WARP 10 is designed to assist armed forces personnel on the front lines with immediate first aid and care for minor injuries and pain, thereby improving endurance in combat.

The Quantum WARP 10 light delivery system is used for applying therapy for the mitigation of chronic pain, by emitting near infrared light via an electric light emitting diode energy source. System controls are conveniently located on the top panel for easy light dose delivery. This device is solid state and hand held for placement directly on the skin where treatment is to occur. Recommended treatment is one or more timed light delivery cycles to the treatment area per day.

Photobiomodulation

Photobiomodulation, also known as low level laser therapy (LLLT), is an emerging medical technique in which exposure to low-level laser light or light emitting diodes stimulate cellular function leading to beneficial clinical effects.

Every eukaryotic cell in an animal's body has one or many thousand cellular power plants called the mitochondrion. These mitochondria are responsible for providing most of the required ATP for cells. ATP is the chemical responsible for energy release within cells that drives a multitude of cellular and physiological functions including those directly related to injury repair and pain relief.

When a cell is damaged through injury or trauma, the mitochondrion, figuratively speaking, curls up like a hedgehog. Once this happens, the production of ATP is drastically reduced, or even ceased. As a result, the rate of healing slows dramatically. Cells exposed to infra-red light (LLLT) at the right frequency, causes the mitochondrion to spring into action almost immediately producing increased amount of ADP. The ADP then links with free oxygen singlets to produce ATP. Again, infra-red light (LLLT) increases the production of ATP in damaged or resting mitochondria.

Laser therapy is the application of red light over injuries or lesions to stimulate healing and relieve pain without sensation or side effects. It is popularly used for the treatment of sports injuries, several different chronic pain syndromes and non-healing wounds such as diabetic ulcers. Many new applications are being investigated including muscle atrophy for astronauts on long term missions. The term adopted by NASA and the US Military scientists is Photobiomodulation.

NASA research further explains:

"Low-energy photon irradiation by light in the far-red to near-IR spectral range with LLLT or LED arrays has been found to modulate various biological processes in cell culture and animal models. This phenomenon of photobiomodulation has been applied clinically in the treatment of soft tissue injuries and the acceleration of would healing. The mechanism of photobiomodulation by red to near-IR light at the cellular level has been ascribed to the activation of mitochondrial respiratory chain components, resulting in initiation of a signaling cascade that promotes cellular proliferation and cytoprotection."