

## **BioCare Systems, Inc. - Company Backgrounder**

BioCare Systems, Inc., was co-founded in 1999 by Sherry Fox and her late husband, Joe Pecukonis, for the purpose of designing, developing and marketing new and innovative health-care devices that use deep-tissue light therapy to decrease pain, accelerate healing and improve quality of life. Prior to his death in 2001, Mr. Pecukonis, an electrical engineer and inventor, held 14 U.S. patents; his 15<sup>th</sup> and most recent was granted posthumously in 2002 for the infrared-light therapy device he invented.

Today, BioCare Systems continues to advance Pecukonis' work by bringing products to market based on his patented technology. The company received FDA-clearance in 2004 to market its first non-surgical, deep-tissue, infrared-light therapy device, *PremIR818*. Predicated upon the proven science and therapeutic application of photobiostimulation (using light to stimulate natural biological processes in the areas where it is applied), the device is cleared for the temporary relief/reduction of minor pain or discomfort associated with muscles (including back pain caused by muscle tension), joints, arthritis, sprains and strains.

The company has patented technology and seven patents pending for multiple products designed to address additional medical applications.

## **The Product**

LumiWave™ is BioCare Systems' newest FDA-cleared device, and was specifically developed and designed as an over-the-counter product for consumers to use in the home. Its patented technology uses Light Emitting Diodes (LEDs) to deliver therapeutic levels of infrared light directly through the skin and into the affected area to temporarily reduce pain. LumiWave's light weight, comfortable fit, durability and portability, along with its optimal power-emission rate, light-source wavelength and dosage duration, make it as effective, less costly and potentially safer than treatment patients might receive in professional or clinical settings. Users have described it as an easy and highly effective way for them to manage their pain.

## **The Science**

Numerous studies — both in humans and in experimental models, in vitro and in vivo — have documented a wide variety of biological actions of light at the levels and spectral ranges employed in deep-tissue, light therapy. Studies have provided evidence to support the concept that light, at proper power level, wavelength and dosage duration, has biostimulatory, ameliorative effects that promote the inherent healing capacities of the body, such as increased circulation and regeneration of normal tissue.<sup>1</sup>

Clinical studies conducted for NASA and the Russian Academy of Science have shown that the stimulating effect of photon (light) penetration and cell absorption are critical to biological results: deep-tissue, light therapy increases the speed, quality and tensile strength of tissue repair; provides pain relief; resolves inflammation; and improves function of damaged neurological tissue.

Researchers are currently investigating additional light-therapy applications for spinal cord injuries, Parkinson's disease, strokes, brain tumors and tissue, muscle and organ regeneration, wound treatment, ophthalmic applications and diabetic neuropathy.

## **The Advisory Board**

A management advisory board — comprising experts in biomedical technology, research and development, and business operations — provides ongoing guidance and direction to the company. Members include:

- Arlen D. Meyers — M.D. and M.B.A., professor of otolaryngology-head and neck surgery at the University of Colorado Health Sciences Center and executive director of the Colorado Alliance for Bioengineering
- Paulette Murphy — M.S. physiology and biophysics, Colorado State University; research consultant
- Steven K. Nordeen — M.S. and Ph.D., University of Rochester School of Medicine, Department of Radiation, Biology and Biophysics; post-doctoral, University of California, San Francisco, Departments of Medicine and Biochemistry and Biophysics; professor of pathology at the University of Colorado Health Sciences Center

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<sup>1</sup> Nordeen, Steven K., Low Level Light Therapy for Pain Management, 2004