

PBM Laser Therapy – Spine, Injury

Light promotes regeneration and functional recovery and changes the immune response after a spinal cord injury

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Background and Objectives: Photobiomodulation (PBM) has been suggested as a potential therapy for spinal cord injury (SCI). We wanted to show that 810 nm light can penetrate deep into the body and promote neuronal regeneration and functional recovery.

The Methods: Adult rats underwent T9 dorsal hemisection followed by treatment with an 810 nm, 150 mW diode laser (dose = 1,589 J / cm²). Axonal regeneration and functional recovery were assessed using single and double label tract tracing and various musculoskeletal functions. The immune response within the spinal cord was also assessed.

Results: The PBM with 6% power penetration deep into the spinal cord significantly increased the number of axons and the distance between regrowth (P <0.001). PBM also brought aspects of function back to baseline and significantly suppressed immune cell activation and cytokine / chemokine expression.

Conclusion: Our results indicate that light, applied transcutaneously, improves recovery from injury and suggests that light will be a useful treatment for human SCI. - CNOTE: Copyright 2005 Wiley-Liss, Inc
