Can Photobiomodulation lower inflammation or pain and support recovery, etc

Photobiomodulation (PBM), also known as low-level laser therapy (LLLT) or red light therapy, has been studied for its potential benefits in reducing pain and inflammation, as well as supporting recovery in various conditions. Below is a summary of key findings from recent studies:

🔥 **Pain Reduction and Inflammation Control**

- **Fibromyalgia:** A study reported a significant decrease in pain intensity, with Visual Analog Scale (VAS) scores dropping from 80.6 to 37.8—a reduction of over 50%. Additionally, the number of tender points decreased from 15.3 to 7.3 after three weeks of treatment. mdpi.com
- **General Pain Relief:** In a review focusing on musculoskeletal conditions, PBM therapy was found to be effective in reducing pain and inflammation, particularly in conditions like fibromyalgia and temporomandibular joint disorders. frontiersin.org
- **Postoperative Pain:** A randomized controlled trial on patients undergoing implant surgery found that those receiving PBM therapy experienced significant reductions in postoperative pain and inflammation compared to control groups. mdpi.com
- **Plantar Fasciitis:** In a randomized controlled trial, patients receiving PBM therapy experienced a reduction in pain scores from an average of 4.5 to 2.8 over three weeks—a 37.8% decrease. In contrast, the usual care group saw a minimal reduction from 4.0 to 3.8. pmc.ncbi.nlm.nih.gov
- **Neck and Shoulder Pain:** In a triple-blinded, placebo-controlled trial, PBM combined with a static magnetic field significantly reduced pain intensity in patients with chronic nonspecific neck and/or shoulder pain, with improvements noted at all measured time points compared to placebo. mdpi.com+1onlinelibrary.wiley.com+1
- **Dental Injection Pain:** A meta-analysis of 13 studies with 972 patients found that PBM therapy using PBM delivered with infrared diode lasers significantly reduced injection pain compared to controls, with a mean difference of -0.90 on the pain scale (95% CI: -1.36 to -0.44; p = 0.0001). pubmed.ncbi.nlm.nih.gov

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🤾 **Recovery and Athletic Performance**

- **Muscle Recovery:** PBM therapy has been shown to aid in muscle recovery post-exercise. For instance, a study observed an 18% reduction in creatine kinase (CK) levels—a marker

of muscle damage—72 hours after high-intensity training in participants who received PBM therapy. researchoutreach.org
- **Sports Performance:** A narrative review highlighted that PBM therapy can enhance muscle performance and recovery in athletes, suggesting its potential as a tool for improving sports performance. pmc.ncbi.nlm.nih.gov

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🧠 **Neurological and Cognitive Benefits**

- **Cognitive Function:** A study on Alzheimer's disease patients found that PBM therapy improved sleep quality, mood, and cognitive function, suggesting its potential in managing symptoms associated with neurodegenerative conditions. health.com

🧬 **Inflammation Control**

- **Rheumatoid Arthritis (RA):** In a study involving 25 female RA patients treated with 820 nm PBM, 72% reported pain relief. pmc.ncbi.nlm.nih.gov
- **Cytokine Modulation:** PBM has been shown to downregulate pro-inflammatory cytokines such as TNF-α, IL-1β, and IL-6, while upregulating the anti-inflammatory cytokine IL-10, thereby reducing inflammation. frontiersin.org
- **Neuroinflammation:** Animal studies have demonstrated that PBM reduces microglial activation and levels of pro-inflammatory cytokines in models of traumatic brain injury, suggesting potential neuroprotective effects. frontiersin.org

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🔗 **Key Studies and Reviews**

- **Efficacy of Photobiomodulation Therapy in the Treatment of Pain:** pmc.ncbi.nlm.nih.govmdpi.com+2pmc.ncbi.nlm.nih.gov+2mdpi.com+2
- **Photobiomodulation in Human Muscle Tissue: An Advantage in Sports:** pmc.ncbi.nlm.nih.goven.wikipedia.org+5pmc.ncbi.nlm.nih.gov+5mdpi.com+5
- **Photobiomodulation and Sports: Results of a Narrative Review:** pmc.ncbi.nlm.nih.govwsj.com+2pmc.ncbi.nlm.nih.gov+2frontiersin.org+2
- **Photobiomodulation Therapy and Its Effects on Muscle Damage Recovery:** researchoutreach.orgresearchoutreach.org
- **Photobiomodulation for the Treatment of Neuroinflammation:** frontiersin.orgacademic.oup.com+7frontiersin.org+7mdpi.com+7
- **Study: Light Therapy May Help Ease Symptoms of Alzheimer's Disease Like Sleep, Mood:** health.comhealth.com

Disclaimer

The information provided in this document is for educational and informational purposes only. It is not intended as a substitute for professional medical advice, diagnosis, or treatment. Individuals should always consult with a licensed physician or qualified healthcare provider before beginning any new therapy, including the use of photobiomodulation (PBM) devices. PBM devices such as the SPRB and GPRB are wellness tools designed to support general health and well-being. They are not medical devices and are not intended to diagnose, treat, cure, or

prevent any disease or medical condition. No medical claims are made or implied. Results may vary based on individual factors, and PBM should not be considered a replacement for appropriate medical care.