



Author: Dr Alan Kwong Hing

Photobiomodulation (PBM) for Migraine Relief

1. Introduction and Scientific Mechanisms

Photobiomodulation (PBM) is a non-invasive therapy that uses red and near-infrared light to stimulate cellular function and reduce inflammation. In migraine management, PBM helps regulate neurological inflammation, improve cerebral blood flow, and modulate pain signaling pathways. It is a promising adjunctive therapy for both episodic and chronic migraine sufferers.

Key mechanisms include:

- Modulation of trigeminal nerve inflammation
- Reduction of cortical spreading depression via mitochondrial support
- Vasodilation and normalization of cranial blood flow
- Reduction of pro-inflammatory cytokines (e.g., TNF- α , IL-1 β)
- Stabilization of neuronal membrane potential

2. Clinical Evidence and Research

Multiple studies have investigated PBM for headache and migraine treatment:

- Bolay et al. (2011) demonstrated the role of neurogenic inflammation in migraines and potential photonic modulation.
- Chow et al. (2007) found PBM effective in treating chronic neck pain, a common migraine trigger (<https://pubmed.ncbi.nlm.nih.gov/17372691>).
- Yousuf et al. (2020) reported PBM reduced headache frequency and severity in patients with tension-type and migraine headaches (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7502752>).
- Hamblin (2016) highlighted the benefits of transcranial PBM for neurological and mood-

related disorders including migraine
(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5066074>).

3. Incorporating PBM Healing Devices

PBM Healing International's SPRB (Small Pad), GPRB (General Pad), and Yoga Mat deliver therapeutic wavelengths of red and NIR light for full-body or localized applications. For migraine relief, these devices can be used at the onset of symptoms or preventively.

Symptom / Target	Device	Placement Area	Duration	Frequency
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Migraine Onset	SPRB	Base of skull / upper neck	15 min	At symptom onset & 2-3 x per day
Tension Headache	SPRB	Shoulders / trapezius	15 min	Daily or as needed
Preventive Therapy	GPRB	Upper back / neck	15 min	3-5x/week
Full-body Stress	Yoga Mat	Full body (lie down)	15 min	Daily

4. Suggested Device Parameters

- Wavelengths: 660 nm (Red) and 850-940 nm (NIR)
- Mode: Continuous
- Application: Direct on skin or through light fabric; avoid eyes

5. Summary

Photobiomodulation provides a novel, evidence-based option for managing migraines. With devices like the SPRB, GPRB, and Yoga Mat, users can safely incorporate red/NIR light therapy at home to reduce headache frequency, intensity, and related symptoms such as stress and muscle tension. Consistent use supports neurological balance, inflammation reduction, and improved quality of life for those with migraines.

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.