



Photobiomodulation (PBM) for Cervical Stenosis

What is Cervical Stenosis?

Cervical stenosis refers to the narrowing of the spinal canal in the neck region, which can compress the spinal cord and nerves, leading to neck pain, numbness, weakness, and sometimes impaired coordination. Common causes include age-related degenerative changes, herniated discs, and osteoarthritis. While surgical options are available for severe cases, conservative treatments focusing on inflammation reduction, neural decompression, and functional restoration are preferred in early to moderate stages.

How Photobiomodulation Helps

Photobiomodulation (PBM) uses red and near-infrared light to reduce inflammation, promote cellular repair, and improve microcirculation. In cases of cervical stenosis, PBM can help:

- Reduce inflammation around compressed nerve roots
- Improve blood flow to spinal structures
- Promote tissue healing
- Alleviate muscular tension contributing to pain
- Modulate pain signals through neural pathways

These benefits are mediated via increased ATP production, reduced oxidative stress, and cytokine modulation (\downarrow TNF- α , IL-6; \uparrow IL-10).

Scientific Support

- Hamblin MR. Mechanisms and applications of the anti-inflammatory effects of photobiomodulation. [Link](<https://pubmed.ncbi.nlm.nih.gov/27552266/>)

- Lim et al. Use of PBM in spinal disorders: outcomes and implications. [Link](<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8896016/>)

- de Freitas LF, Hamblin MR. Proposed mechanisms of photobiomodulation therapy for spine-related pain. [Link](<https://pubmed.ncbi.nlm.nih.gov/26785475/>)

Recommended PBM Protocols with Devices

SPRB – Spot Pain Relief Belt

- Placement: Apply to the posterior cervical spine, lateral neck muscles, or upper thoracic area
- Wavelength: 660 nm + 850 nm, 50:50 ratio
- Duration: 15 minutes per session, up to 2× daily
- Frequency: Acute flare-ups – 3×/day; Maintenance – 3–5×/week
- Benefit: Localized anti-inflammatory and pain relief effect

GPRB – General Pain Relief Belt

- Placement: Wrap around neck and upper shoulders (trapezius area)
- Wavelength: 660 nm (1/3), 850 nm (2/3)
- Duration: 20–30 minutes/session
- Frequency: 3×/day for chronic pain relief and then as needed
- Benefit: Broader coverage for diffuse pain, stiffness, and nerve compression symptoms

Therapeutic Yoga Mat

- Placement: Lie flat with cervical spine in alignment, optionally supported with a neck roll
- Wavelength: Full-body red and infrared array
- Duration: 30 minutes/session
- Frequency: daily until symptoms subside and then 3-5 week
- Benefit: Systemic reduction of inflammation, improves spinal alignment, muscle relaxation, and supports long-term neurovascular recovery

Safety and Monitoring Tips

- Ensure skin is clean and dry before use
- Avoid overuse in sensitive areas without clinical supervision
- Monitor for any adverse changes in symptoms
- Encourage stretching and low-impact movement in conjunction
- PBM is safe, non-invasive, and does not interfere with medications or therapy

Conclusion

Photobiomodulation offers a promising adjunct therapy for managing cervical stenosis. Using targeted devices like the SPRB and GPRB for local relief and the Therapeutic Yoga Mat for full-body support, patients may experience reduced pain, improved mobility, and enhanced quality of life. Combined with physiotherapy and ergonomic practices, PBM can be an effective conservative management strategy.

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.