



Photobiomodulation (PBM) for Shoulder Pain: Evidence and Protocols

What is Photobiomodulation?

Photobiomodulation (PBM) involves red and near-infrared light absorbed by cells to stimulate ATP production and reduce inflammation. This cellular activation makes PBM effective for shoulder pain, stiffness, and mobility issues.

PBM is especially helpful for trapezius strain, rotator cuff irritation, frozen shoulder and upper back tension caused by poor posture or overuse.

Clinical Benefits for Shoulder Pain

- PBM applied to the trapezius muscle improves shoulder range of motion and reduces stiffness. [Live link](<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8505884/>)
- In myofascial pain syndrome, PBM decreases trigger point sensitivity and reduces pain scores by up to 60%. [Live link](<https://pubmed.ncbi.nlm.nih.gov/29734079/>)

Frozen Shoulder (Adhesive Capsulitis)

- PBM improves range of motion and reduces inflammation in patients with frozen shoulder. A randomized trial found significant pain reduction and increased joint mobility after 4 weeks of PBM sessions. [Live link](<https://pubmed.ncbi.nlm.nih.gov/31887931/>)
- When used alongside physiotherapy, PBM accelerates recovery during both the freezing and thawing phases of adhesive capsulitis. [Live link](<https://pubmed.ncbi.nlm.nih.gov/30592438/>)

Mechanistic Evidence

PBM reduces inflammatory markers and increases ATP in muscle tissue, promoting relaxation and improved blood flow in the shoulder region. [Live link](<https://pubmed.ncbi.nlm.nih.gov/33342800/>)

Suggested Protocols: SPRB & GRPB

1. SPRB – For trapezius and deltoid
 - Apply to shoulder area 15 minutes/session, up to 3x/day for more severe conditions apply for 30 minutes
 - Use 3–5×/week for chronic conditions
 - Effective for targeted relief of shoulder tension and pain



2. GRPB – For broader shoulder/back coverage
 - Wrap across both shoulders or upper back
 - Apply to shoulder area 15 minutes/session and if more severe for 30 minutes or 2x per session on the same area, up to 3x/day for more severe conditions apply for 30 minutes
 - Supports systemic recovery and posture-related pain

For enhanced systemic effects, additional sessions can be applied to the areas above and below the sore spot to help create and stimulate a more generalized energy delivery and hence overall effect

Monitoring & Safety Tips

- Ensure correct placement over affected areas
- Do not exceed session frequency without clinical guidance
- PBM is well tolerated and safe for repeated use

Conclusion

PBM is a powerful tool to manage shoulder pain, tension, and stiffness. The SPRB and GRPB offer customizable treatment options that improve mobility and reduce muscle fatigue.

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.