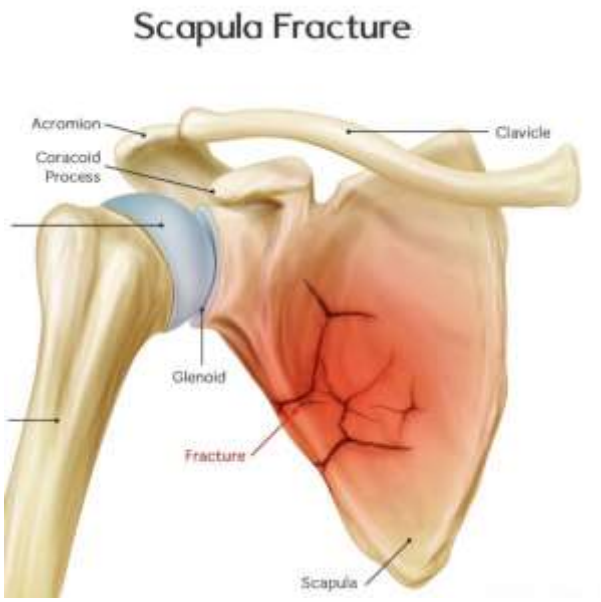
Photobiomodulation (PBM) for Fractured Scapula: Protocol and Device Use

Overview

Photobiomodulation (PBM) therapy is a non-invasive light-based therapy that uses red and near-infrared light to promote tissue healing, reduce inflammation, and relieve pain. It can be safely and effectively used to support healing in scapular (shoulder blade) fractures, including non-displaced and post-surgical cases with metal fixation.



☑ Safety Considerations

- PBM does not generate heat or ionizing radiation, making it safe for use around bone and soft tissues.

- There is no electromagnetic interference with plates, screws, or other orthopedic implants.

- PBM is well-tolerated and can be initiated early post-injury or post-surgery once cleared by the treating physician.

Therapeutic Benefits

1. Stimulates osteoblast activity to accelerate bone healing.

2. Reduces inflammation and associated pain.

3. Enhances lymphatic drainage and reduces swelling.

4. Supports muscle relaxation and shoulder mobility recovery.

PBM Protocol for Scapular Fracture

Recommended Devices: PBM Healing SPRB, GPRB, or TYM (Therapeutic Yoga Mat)

Stage	Time Post-Injury	PBM Settings	Target Area
Acute Phase	Days 0–5	15 – 30 min per session / 4× daily	Over scapula + nearby muscles (trapezius, rhomboids)
Subacute Phase	Days 5–21	15 – 30 min / 2- 3x daily	Full scapular region and shoulder girdle
Remodeling Phase	Day 21+	15 min / as needed daily	Broader area including rotator cuff + back muscles

Use red (660nm) and near-infrared (850–880nm) light. Apply directly to skin if possible or over thin fabric. Consider treating both posterior and lateral aspects of the shoulder.

WHY PBM DEVICES?

PBM devices can be used alongside physical therapy to support range of motion and rehabilitation goals.

Enhances patient compliance due to comfort, convenience, and minimal side effects.

Non-invasive, drug-free treatment option with no downtime or recovery delays.

Devices are portable and easy to use at home or in clinical settings.

May reduce or eliminate the need for pain medications, decreasing reliance on opioids or NSAIDs.

Device Placement Guidelines

- SPRB or GPRB: Position over the scapula and upper back; cover both shoulder blades if possible.

- TYM: Lay patient supine or prone on the mat to deliver full-body systemic benefit and targeted back coverage.

- Avoid pressure on surgical sites and ensure patient comfort throughout.

⚠ Cautions

- Do not use over infected wounds or open incisions.

- Avoid carotid sinus and thyroid exposure for prolonged time.

- Ensure medical clearance if using in postoperative cases with implants.

☑ Conclusion

PBM therapy provides a supportive and non-invasive approach to managing scapular fractures. It promotes pain relief, faster bone healing, and improved functional recovery without interfering with surgical hardware. With proper use of SPRB, GPRB, or TYM devices, PBM can be safely integrated into rehabilitation programs for scapular injury.