



By Dr Alan Kwong Hing

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Photobiomodulation for Mastitis in Breastfeeding Women

Clinical Application of PBM in Mastitis

Photobiomodulation (PBM), has shown potential as a supportive treatment for mastitis in breastfeeding women. Studies suggest that PBM may provide anti-inflammatory effects, pain relief, improved tissue repair, and support for continued breastfeeding.

Mechanisms and Clinical Benefits

- Anti-inflammatory effects: PBM can reduce cytokine activity and promote lymphatic drainage.
- Pain relief: It can stimulate endorphin release and reduce nociceptor sensitization.
- Tissue repair: Useful for healing nipple trauma or abscess.
- Milk flow restoration: PBM may alleviate ductal inflammation and promote milk flow.

Clinical Studies and Case Reports

Systematic Review and Meta-Analysis (2025)

A comprehensive review analyzed randomized clinical trials assessing PBM's effectiveness on nipple trauma and pain during breastfeeding. The studies utilized 660-nm wavelength lasers and reported reductions in pain and improved healing. (1)

Randomized Controlled Trial (2016)

This triple-blind study evaluated PBM's efficacy in relieving nipple pain among breastfeeding women. Significant pain reduction was reported in the PBM treatment group. (2)

Case Report on Mastitis-Associated Breast Abscess (2022)

A case study showed PBM's effectiveness in treating a breast abscess following puerperal mastitis. Complete healing was achieved after 15 sessions. (3)

Comparative Study on PBM vs. Topical Creams (2024)

This study found PBM more effective than anti-inflammatory creams in reducing nipple fissure size, redness, and pain. Milk production and infant weight gain were also improved. (4)

Integrative Review on Postpartum Breast Complications (2023)

This review examined PBM for nipple trauma and mastitis, concluding that both LED and laser PBM accelerated healing and reduced pain associated with mastitis. (5)

PBM FEM Protocol for Mastitis

- Wavelength: 660 & 850 nm (50:50)
- Treatment time: 1 to 2 treatments of 15 minutes each, resulting in 15 to 30 minutes of total treatment
- Frequency: 1 to 3 treatments per day ideally equally spaced out
- Duration :until symptoms subside or for preventive reasons as needed

For Optimal effects the FEM belt should be placed against the skin covering the nipples and breasts as much as possible, without any clothing on.

SENSITIVITY - If the tissues are extremely sensitive to the heat generated then shorter treatment times can be used with shorter intervals between treatments. For example: 5 minutes per treatment and 2-3 hr break between exposure times. If the tissues are still too sensitive a thin white cloth can be placed between the skin and the light and with the belt not directly against the sensitive area.

Instructions for Use:

1. Ensure the skin is clean and dry before use
2. If actively bleeding cover the area with a cloth, do not use if pus is present
3. Apply the FEM device directly over the affected areas, if necessary use Velcro strap to secure the pad by wrapping the strap around the back and over the FEM belt
4. Activate the on off switch and complete 15 minute treatment session. If necessary complete another session with maximal treatment time of 30

minutes. If doing more than one session per day ensure as much time between sessions, ideally no more than 3 treatments per day.

"Please consult your healthcare provider before using this device to ensure it is appropriate for your condition."

References

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3. Veloso, Luiza & Ribeiro, Aldmilla & Pinto, Nathali & Campos, Thiago & Palma, Luiz & Campos, Luana. (2022). Photobiomodulation therapy in the post-operative management of puerperal mastitis-associated breast abscess. *Research, Society and Development.* 11. e32411427484. 10.33448/rsd-v11i4.27484.
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5. I Gomes de Oliveira Garbuggio, Anicheriene & Paraizo-Horvath, Camila & Leite, Eliana & Freitas, Patrícia & Terra, Fábio & Dázio, Eliza. (2023). USE OF PHOTOBIMODULATION IN THE TREATMENT OF BREAST POSTPARTUM INTERCURRENCY: INTEGRATIVE REVIEW. *ESTIMA, Brazilian Journal of Enterostomal Therapy.* 10.30886/estima.v21.1329_IN.