



# Efficacy of Low-Level Laser Therapy in Relieving Nipple Pain in Breastfeeding Women: A Triple-Blind, Randomized, Controlled Trial

■ ■ ■ Kelly Pereira Coca, PhD,\* Karla Oliveira Marcacine,\*  
Mônica Antar Gamba, PhD,\* Luciana Corrêa, PhD,†  
Ana Cecília Corrêa Aranha, PhD,†  
and Ana Cristina Freitas de Vilhena Abrão, PhD\*

## ■ ABSTRACT:

Pain accruing from nipple lesions caused by inadequate latching by the baby is a common complaint among breastfeeding women and an important obstacle to successful breastfeeding. Nipple pain occurs during the first days after delivery and is considered one of the main causes for early weaning. To investigate the efficacy of low-level laser therapy as a treatment for nipple pain due to breastfeeding. A triple-blind, randomized, clinical study. A university-affiliated hospital in São Paulo, Brazil. Fifty-nine women with nipple lesions at the time of their admission. Thirty women (intervention group) received three sessions of laser therapy (InGaAIP laser, 660 nanometer, 40 milliwatts of power, 5 Joules per square centimeter of energy density for 5 seconds each, total energy = 0.6 Joules) in the region of the nipples at three different points in time (0 hour, 24 hours, and 48 hours after diagnosis of nipple lesion). Twenty-nine women with similar clinical conditions were randomly assigned to the control group. Self-reported pain was recorded before and after laser therapy using a visual analogue scale. The intervention group experienced a decrease of 2.0 centimeters in intensity of pain ( $p = .016$ ) 24 hours after the first intervention and also presented lower levels of pain compared with the control group. Low-level laser therapy was considered effective for treating nipple lesions in breastfeeding women with pain, providing relief and prolonging exclusive breastfeeding. More clinical trials with

From the \*Escola Paulista de Enfermagem, Universidade Federal de São Paulo, São Paulo, Brazil; †Faculdade de Odontologia, Universidade de São Paulo, São Paulo, Brazil.

Address correspondence to Kelly Pereira Coca, PhD, Women's Health Nursing Department, Escola Paulista de Enfermagem, Universidade Federal de São Paulo, São Paulo, Brazil. E-mail: [kcocaepr@hotm.com](mailto:kcocaepr@hotm.com)

Received March 11, 2015;  
Revised May 11, 2016;  
Accepted May 11, 2016.

The authors received no financial support for this study.  
Complementary data: [clinicaltrials.gov](http://clinicaltrials.gov) No. NCT01723995 - Laser Therapy in Nipples Injured During Breastfeeding (LTNIBF).

1524-9042/\$36.00  
© 2016 by the American Society for Pain Management Nursing  
<http://dx.doi.org/10.1016/j.pmn.2016.05.003>

## different laser dosimetry and parameters are necessary to optimize laser therapy protocols for breastfeeding women.

© 2016 by the American Society for Pain Management Nursing

### BACKGROUND

Breastfeeding is essential to the health of children and is considered the best food available for them (Toma & Rea, 2008; Alzate-Meza et al., 2011; Kramer & Kakuma, 2012). The World Health Organization (WHO, 2009) recommends children be breastfed exclusively in the first 6 months of life, then be provided with breast milk continually for 2 years or more as a complement. However, many infants are weaned much earlier than recommended, and this is considered a public health problem in Brazil and in the world (Victoria et al., 2016).

Nipple trauma stands out among the predictive factors for early weaning and is reported as one of the main causes for early weaning in the first days after birth (Spangler & Hildebrandt, 1993; Giugliani, 2000; França et al., 2008). Breastfeeding abandonment is triggered by intense pain in the nipples. An estimated 80% to 96% of women experience some degree of pain, and 26% experience extreme pain; nipple pain was reported by 65% (Huml, 1994; Pugh et al., 1996). Nipple injuries represent a significant challenge for healthcare providers caring for breastfeeding women, given the lack of scientific evidence for most proposed treatments (Giugliani, 2003).

Exposure to sunlight is recommended to prevent and heal nipple trauma (Brasil, 2009). Even though there are no clinical trials supporting this practice, its preventive use is reinforced by one study showing the importance of pigmentation in the nipple-areola area. The study reported an association between depigmented nipples and the emergence of nipple trauma (Coca, Gamba, de Souza e Silva, & Abrão, 2009a).

Because sunbathing is not always possible, the authors hypothesized that the adoption of other phototherapies, such as a low-level laser, also could benefit breastfeeding mothers because of its analgesic properties and the increased tissue repair it enables (Catão, 2005; Bourguignon-Filho, Feitosa, Beltrão & Pagnoncelli, 2005; Tunér & Hode, 2004). An analgesic effect is obtained by reducing inflammation, removing acidic substances, directly or indirectly stimulating endorphins, and reducing excitability of nociceptors. In regard to tissue repair, the production of adenosine triphosphate is encouraged, consequently promoting greater mitotic speed by stimulating microcirculation

and neovascularization (Catão, 2005; Tunér & Hode, 2004). Even though further evidence is needed on laser efficiency in the repair of skin and mucous wounds that are difficult to heal, studies have reported advantages of low-level laser therapy, especially in regard to its role in speeding the repair process and alleviating pain (Albrektson, Hedstrom, & Bergh, 2014; Sobanko & Alster, 2008). There are few studies addressing the effectiveness of low-level laser therapy in alleviating pain arising from nipple injuries acquired during breastfeeding (Gonçalves, Filipini, & Posso, 2009; Pietschnig, Pani, Kafer, Bauer Wais, & Lischka, 2000). For this reason, this study's aim was to assess the efficacy of low-level laser irradiation in modulating pain among women with nipple lesions.

### METHODS

This triple-blind, randomized, controlled clinical trial included women with nipple lesions. Women presenting with compromised skin on the nipple surface (Biancuzzo, 2000) were considered to have nipple lesions. The largest lesion was chosen for the application of irradiation in the case of women with more than one lesion.

The trial protocol complied with the Helsinki Declaration and was approved by the institutional review board at Unifesp (No. 1710/09). The trial is registered on [clinicaltrials.gov](http://clinicaltrials.gov) under number NCT01723995. All study participants provided informed consent after receiving clarification about the study's objectives.

### Participants

A total of 59 mothers with nipple lesions admitted to the rooming-in unit of a university hospital in São Paulo, Brazil, were included in the study. They were exclusively breastfeeding their full-term newborn weighing  $\geq 2,500$  grams. They were randomly selected and assigned to the intervention ( $n = 30$ ) or control ( $n = 29$ ) group. Women were excluded from the study based on the following criteria: use of any topical substance other than breast milk in the nipple-areola area; inverted or pseudo-inverted nipples; mastitis, malignant lesions, or suspected malignant lesions; or reported photosensitivity or adverse reactions when exposed to light.

### Procedure

Patients were randomly assigned into groups A and B (intervention and control groups, respectively) for the purposes of study-blinding. The groups were stratified into two blocks: primiparous and multiparous. Opaque envelopes, organized by the main researcher,

Download English Version:

<https://daneshyari.com/en/article/2674567>

Download Persian Version:

<https://daneshyari.com/article/2674567>

[Daneshyari.com](https://daneshyari.com)