

# Revision Lingual Frenotomy Improves Patient-Reported Breastfeeding Outcomes: A Prospective Cohort Study

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Bobak A. Ghaheri, MD<sup>1</sup> , Melissa Cole, IBCLC<sup>2</sup>,  
and Jess C. Mace, MPH, CCRP<sup>3</sup>

## Abstract

**Background:** Lingual frenotomy improves patient-reported outcome measures, including infant reflux and maternal nipple pain, and prolongs the nursing relationship; however, many mother–infant dyads continue to experience breastfeeding difficulty despite having had a frenotomy.

**Research aim:** The aim of this study was to determine how incomplete release of the tethered lingual frenulum may result in persistent breastfeeding difficulties.

**Methods:** A one-group, observational, prospective cohort study was conducted. The sample consisted of breastfeeding mother–infant (0–9 months of age) dyads ( $N = 54$ ) after the mothers self-elected completion lingual frenotomy and/or maxillary labial frenectomy following prior lingual frenotomy performed elsewhere. Participants completed surveys preoperatively, 1-week postoperatively, and 1-month postoperatively consisting of the Breastfeeding Self-Efficacy Scale–Short-Form (BSES-SF), Visual Analog Scale (VAS) for nipple pain severity, and the Revised Infant Gastroesophageal Reflux Questionnaire (I-GERQ-R).

**Results:** Significant postoperative improvements were reported between mean preoperative scores compared with 1-week and 1-month scores of the BSES-SF,  $F_{(2)} = 41.2$ ,  $p < .001$ ; the I-GERQ-R,  $F_{(2)} = 22.7$ ,  $p < .001$ ; and VAS pain scale,  $F_{(2)} = 46.1$ ,  $p < .001$ .

**Conclusion:** We demonstrated that besides nipple pain, measures of infant reflux symptoms and maternal breastfeeding self-confidence can improve following full release of the lingual frenulum. Additionally, a patient population was identified that could benefit from increased scrutiny of infant tongue function when initial frenotomy fails to improve breastfeeding symptoms.

## Keywords

ankyloglossia, breastfeeding, breastfeeding assessment, health services research, tongue-tie

## Background

Breastfeeding initiation rates in the United States have been increasing, with renewed emphasis on the importance of breastfeeding exclusivity and duration (Office of Disease Prevention and Healthy Promotion, 2017). Previous authors have demonstrated the health risks and financial detriment resulting from premature breastfeeding cessation (Bartick et al., 2017), in addition to how breastfeeding provides a protective effect against dental malocclusion (Peres, Cascaes, Nascimento, & Victora, 2015). It is of vital importance to identify and treat the causes of dysfunctional breastfeeding and associated symptoms that may result in premature cessation (Newby & Davies, 2016). Neonatal ankyloglossia has been identified as an established cause of breastfeeding problems and a risk factor for premature cessation (Ricke, Baker, Madlon-Kay, & DeFor, 2005; Todd &

Hogan, 2015). Prior to ultrasound studies of the infant mouth during breastfeeding, it was thought that the tongue was responsible for milk withdrawal via a peristaltic wave that compresses lactiferous sinuses in the breast (Woolridge,

<sup>1</sup>Division of Otolaryngology/Head and Neck Surgery, The Oregon Clinic, Portland, OR, USA

<sup>2</sup>Luna Lactation, Portland, OR, USA

<sup>3</sup>Division of Rhinology and Skull Base Surgery, Department of Otolaryngology–Head and Neck Surgery, Oregon Health & Science University, Portland, OR, USA

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### Corresponding Author:

Bobak A. Ghaheri, MD, The Oregon Clinic, Division of Otolaryngology/Head and Neck Surgery, 1111 NE 99th Avenue, Suite 101, Portland, OR 97220, USA.

Email: drghaheri@gmail.com