



EFFECTS OF ACUPRESSURE ON LACTATION: AN INTEGRATED REVIEW

Miriam A. Rosetti, MAPP, C-IAYT, BSN, RN, and Diane L. Spatz, PhD, RN-BC, FAAN

Abstract

Purpose: To assess the effects of acupressure on lactation.

Methods: A literature search was conducted via Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, and PubMed using keyword search terms *acupuncture*, *Tuina* and *breastfeeding*, *human lactation* or *human milk* and excluded *auricular*. Inclusion criteria were articles in English with no restriction on publication date. We included *acupuncture* as well as *acupressure* to ensure that relevant articles were not missed.

Results: After duplicates were removed, our initial search yielded 217 articles. Using the PRISMA checklist (Liberati et al., 2009), six articles met inclusion criteria (five research studies, one case study).

Preliminary evidence suggests acupressure offers a promising and inexpensive method of enhancing secretory activation following cesarean and vaginal term and late preterm births, specifically when performed at acupoints CV 17, ST 18, and SI 1.

Clinical Implications: Human milk is the optimal source of infant nutrition. Concern of low milk supply is most often cited as the cause for early supplementation with formula as well as early cessation of breastfeeding. Acupressure may be helpful in improving milk supply in early postpartum, but more research on acupressure and lactation is warranted.

Key words: Acupressure; Acupuncture; Breastfeeding; Human; Lactation; Milk.

Importance of Early Initiation of Breastfeeding

The World Health Organization (WHO) and the United Nations Children's Fund recommend that babies initiate breastfeeding within the first hour of birth and be exclusively breastfed on demand for the first 6 months of life (WHO, 2021). As per the American College of Obstetricians and Gynecologists (ACOG, 2021a, p. e55), the "the value of breastfeeding to both parents and infant is unequivocal." ACOG endorses breastfeeding education in prenatal care (p. e58) as well as peer support programs (p. e59) to enhance early initiation and continuation. It is well documented that *not* breastfeeding increases risk for neonatal mortality and children who consume human milk are better protected against infections ranging from gastroenteritis, upper and lower respiratory tract infections, urinary tract infections, neonatal septicemia, necrotizing enterocolitis, acute otitis media as well as sudden infant death syndrome (American Academy of Pediatrics et al., 2012; ACOG, 2021a; Meek et al., 2022a; Meek et al., 2022b; Spatz & Lessen, 2011). Babies fed human milk are less likely to be overweight or obese, less prone to childhood cancers, asthma, type 1 and 2 diabetes, and atopic dermatitis (ACOG 2021a; Spatz & Lessen, 2011). They are better able to relieve pain, regulate their thermal and respiratory statuses, and perform better on intelligence tests (Spatz & Lessen, 2011; WHO, 2021).

Women who breastfeed have a reduced risk of breast and ovarian cancers (WHO, 2021), decreased postpartum blood loss, less postpartum depression, lower risk of postpartum infection and anemia, and greater weight loss. Not breastfeeding is associated with later in life higher incidences of metabolic syndrome, hypertension, hyperlipidemia, diabetes, cardiovascular disease, osteoporosis, rheumatoid arthritis, and increased sleep disturbance for the mother in the immediate postpartum period (Spatz & Lessen, 2011).

Supporting dyads in early initiation of breastfeeding and conversion to secretory activation is the benefit of ensuring that infants receive colostrum. Colostrum is rich in secretory Immunoglobulin A that helps protect the infant from infection, supports baby's immune system and gut function, and is high in proteins that helps early growth (Bryant & Thistle, 2021). Anticipating and preventing delay in secretory activation, which begins at 2 to 3 days postpartum, is a crucial time for establishing and sustaining breastfeeding. As delayed secretory activation is associated with cessation of any and exclusive breastfeeding, routine assessment and early interventions are warranted to support favorable breastfeeding outcomes (Brownell et al., 2012). Early milk expression may help prevent breast engorgement (ACOG, 2021b), which is often a factor complicating

the breastfeeding relationship and increasing risk for inadequate milk supply and undesired weaning. Arranging for early consultation with lactation services is key in ensuring milk supply is protected (ACOG, 2021b).

Risk Factors for Difficulty with Early Initiation and Secretory Activation

Any of the factors implicated in a delay in secretory activation can lead to insufficient lactation if not effectively managed. Some known maternal causes of delayed or impaired lactogenesis include primiparity, cesarean birth, long stage II of labor, maternal fluid loads in labor, type 1 diabetes, labor analgesia, obesity, polycystic ovary syndrome, placental retention, Sheehan's syndrome, stress, isolated prolactin insufficiency, and breast surgeries (Wambach & Spencer, 2021). Any maternal condition that results in incomplete breast emptying such as improper latch, timed (instead of on-demand) feeds, improper use of pacifiers, and unnecessary use of supplements can impair lactogenesis and lead to low supply (Wambach & Spencer, 2021). Possible infant causes include any conditions that result in a weak suck, for example, prematurity, tongue-tie, palatal anomalies, or congenital heart or other defects (Wambach & Spencer, 2021).

Insufficient milk supply remains the most common reason cited around the world for premature cessation of breastfeeding (ACOG, 2021b; Brown et al., 2014; Chang et al., 2019; Odom et al., 2013; Sun et al., 2017; Worobey, 2011). Supportive anticipatory guidance on the process of secretory activation along with tools for perinatal health workers and families to provide

skilled support methods promoting effective conversion to secretory activation leading to sufficient milk production should be considered. These measures can support the goal set by WHO and UNICEF of exclusive breastfeeding for the first 6 months to at least 50% by 2025.

Acupressure as a Potential Tool for Supporting Early Initiation and Secretory Activation

Where Western medicine treats disorders of organ systems, Traditional Chinese Medicine (TCM) treats energy balance disorders in the entire body, seeing the physical, physiologic, and psychologic inextricably linked and balanced through meridian channels. *Qi*, commonly translated as vital energy, circulates through these channels, and has its transformations in acupoints. *Tuina*, also known as acupressure, is the important segment of TCM that is most comparable to Western massage. Literally, *tui* meaning "push" and *na* meaning "grasp." The methodology is to stimulate the *Qi* that runs through these channels and eliminate a pathological factor or condition that might exist because of blockage or stagnation in these

Preliminary evidence suggests acupressure offers a promising and inexpensive method of enhancing secretory activation following cesarean, vaginal, term and late preterm births, specifically when performed at acupoints CV 17, ST 18, and SI 1.

channels (Ilić et al., 2012). The first book on Tuina was said to be written between 221 BC and 265 AD and the period from 1368–1911 is the peak in the improvement of Tuina (Ilić et al., 2012). In TCM, insufficient lactation is considered to be caused by two possible factors combined or separately; (1) deficiency of Qi and blood (2) liver Qi stagnation (Betts, 2005; Luo et al., 2017; Tureanu & Tureanu, 1994). Acupoints on TCM meridians that traverse the breast areas are implicated in lactogenesis and any deficiency or blockage of the physiologic process. Further exploration of the common acupoints used along these meridians, the acupressure methods, timing, duration, and frequency of the massage along with their reported impact on lactogenesis and methods used to determine that impact will be detailed below.

Methods

Design

We used the integrative review method, which includes both empirical and theoretical publications, to synthesize English language data on acupressure and lactation (Whittemore & Knafl, 2005). The methodological steps provide rigor and decrease bias in evaluating findings from diverse methodologies which can then be applied to clinical practice to improve evidence-based practice initiatives (Hopia et al., 2016).

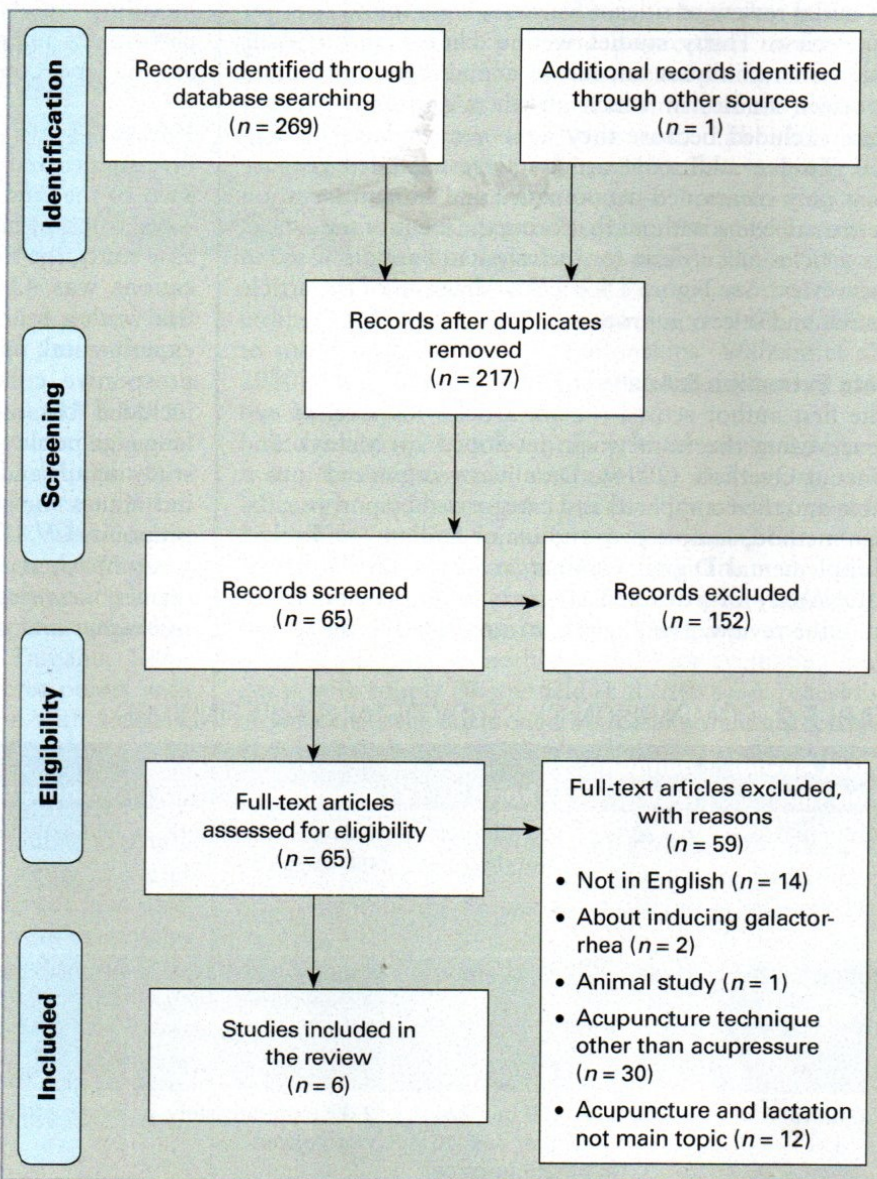
Search Strategy and Sources

In consultation with a biomedical nurse librarian, we searched the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, and PubMed electronic databases to identify relevant articles on human lactation, breastfeeding, and acupressure using the following Medical Subject Headings search terms and keywords: *acupuncture, acupressure, shiatsu, Tuina, lactation, breast milk, human milk, breastfeeding with the exclusion of auricular and auriculotherapy* using the Boolean operators of AND, OR, and NOT. We used the reference sections of relevant articles to identify additional articles. After duplicates were removed, 217 articles remained from the initial search.

Eligibility Criteria

The goal of this integrative review was to report on the common acupressure points that did not require external

FIGURE 1. PRISMA FLOWCHART ILLUSTRATING THE SEARCH STRATEGY



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Med* 6(7): e1000097. doi:10.1371/journal.pmed1000097
For more information, visit www.prisma-statement.org.

tools or acupuncture needles and have proven useful in enhancing human milk coming to volume in the crucial early postpartum period. We conducted an integrative review to provide information and potential direction for further research amidst a paucity of research published in the English language.

We used the methods outlined in the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA; Moher et al., 2015) to identify relevance and compliance with inclusion criteria. Overall, articles were included if they were written in English, discussed human lactation and acupressure or Tuina and did not discuss acupuncture with needling, electro acupuncture, laser acupuncture,

auricular therapy, vaccaria seeds, moxibustion, or any other instrument necessary to perform the therapy. After an initial review of titles, 65 articles were found relevant for review. Thirty studies were excluded due to their focus on techniques outside of acupressure and Tuina. Fourteen studies in which abstracts appeared relevant were excluded because they were not available in English. Twelve additional articles were excluded because they only mentioned acupuncture and human lactation or breastfeeding without that being the focus of the article. Six articles met criteria for inclusion and are discussed in this review. See Figure 1 for a flow diagram of the article search and selection process.

Data Extraction & Analysis

The first author scored the six articles for level of evidence using the framework developed by Melnyk and Fineout-Overholt (2015). Data were organized into a table and then compared and categorized by purpose, design method, sample size, and major finding. See Table 1 (Supplemental Digital Content at <http://links.lww.com/MCN/A82>) for a detailed summary of the articles included in the review. The analytic strategy used in the review

involved first extracting methodological data from the articles. Extracted data included data related to study locations, number and any provided characteristics of participants and providers, characteristics of interventions, and statistical outcomes.

Results

Five studies and one case study included in the analysis. Two of the studies were conducted in China and three were in Indonesia. In total with the five studies and one case study, the total number of participants across publications was 435. There was one randomized control trial with a four-group design. Two studies were quasi-experimental, one was an observational study, two were prospective cohort studies, and one case study was included because of the limited number of English-language publications. Table 2 presents a comparison of study details and findings. Table 3 includes measurement techniques for secretory activation in studies using the acupoints CV 17, ST 18, & SI 1.

Comparison of data led to the identification of common themes: *acupressure points used* ("acupoints"), *specific techniques and duration of acupressure intervention*, the

TABLE 2. COMPARISON OF STUDY DETAILS AND FINDINGS

First Author and Year	Sample Size	Time	Frequency	Technique	Acupoint	Type of Birth
Anita (2020)	<i>n</i> = 30	30 minutes per day	3 days immediately postpartum	Not explained	CV 17 SI 1 LU 1	Vaginal
Erfina (2020)	<i>n</i> = 80	5–10 minutes	1 time per day for 7 days starting within 24 hours postpartum	Not explained	CV 17 SI 1 LU 1	Not described
Lu (2019)	<i>n</i> = 80	30 minutes per day (15 minutes per breast)	2 days immediately postpartum	Not explained	CV 17 ST 18	Cesarean
Mann (2014)	<i>n</i> = 1	Not included	Not described	Not explained	GB 21 & SI 11	Not described
Luo (2017)	<i>n</i> = 174	Not included	1 time beginning 2 hours postpartum for vaginal 1 time beginning 6 hours postpartum for cesarean birth	"Pressing – kneading" "Local pulling" Massaging and/or pinching areola	CV 17 SI 1 ST 18	Cesarean and vaginal
Sulymbona (2020)	<i>n</i> = 70	Not included	3 times a week for 3 weeks	Not explained	CV 17 SI 1 ST 18	Vaginal

TABLE 3. MEASUREMENT OF SECRETORY ACTIVATION IN STUDIES USING CV 17, ST 18, & SI 1

Measurement	First Author and Year
Volume of expressed milk	Sulymbona (2020); Lu (2019)
Serum prolactin levels	Anita (2020); Lu (2019)
Feelings of fullness or milk outflow	Luo (2017)
Frequency and duration of breastfeeding	Erfina (2020)

parity and method of delivery (cesarean vs. vaginal) and the measurement of impact on human milk production.

Acupressure Points Used (CV 17, ST 18, & SI 1 & LU 1)

Standard practice points seen across TCM used to benefit women with a low milk supply are CV 17, known as the influential point used to regulate and invigorate Qi and indicated for all breast conditions; ST 18, which facilitates circulation of Qi and blood through the stomach meridian; and SI 1, specifically used for promoting lactation (Tureanu & Tureanu, 1994). Multiple acupuncture studies (Neri et al., 2011; Tureanu & Tureanu, 1994; Zhao, & Guo, 2006) have used these three points with good results, warranting experimentation with acupressure which does not require needles and therefore can be used more broadly.

CV 17 is also referred to as Ren 17, Danzhong or Shanzong, is located at the center of the sternum, and was most often used among these studies, occurring in five of the studies. ST 18 also referred to as Rugen and is located in lower breast margins; it was used in four of the studies reviewed here. SI 1 also known as Shaoze is on the little finger was present in three studies. LU 1 also known as Zhongfu is not commonly indicated for breast conditions or lactation; it is located on the upper lateral chest level in the first intercostal space and was used in two of these studies because it is close to the breast (Erfina et al., 2020).

Techniques, Duration, and Frequency Used with the Three Most Common Acupoints (CV 17, ST 18, & SI 1)

Four of the six studies did not include details on the acupressure technique used and the case report explained various techniques at Tuina points not common to the other studies, making it difficult to assess the most effective techniques to apply to practice. Each study used a different amount of time and frequency for the acupressure intervention, making it difficult to provide recommendation on standard of care. Number of acupuncture treatments ranged from 1 to 9. Length of intervention ranged from 1 day to 3 weeks. Minimum duration of sessions was 5 minutes. See Figure 2 for the location of acupoints CV 17, ST 18, & SI 1.

Measurement of Lactogenesis in Studies Using CV 17, ST 18, & SI 1

As insufficient milk supply remains the most common reason cited for early cessation of breastfeeding, how

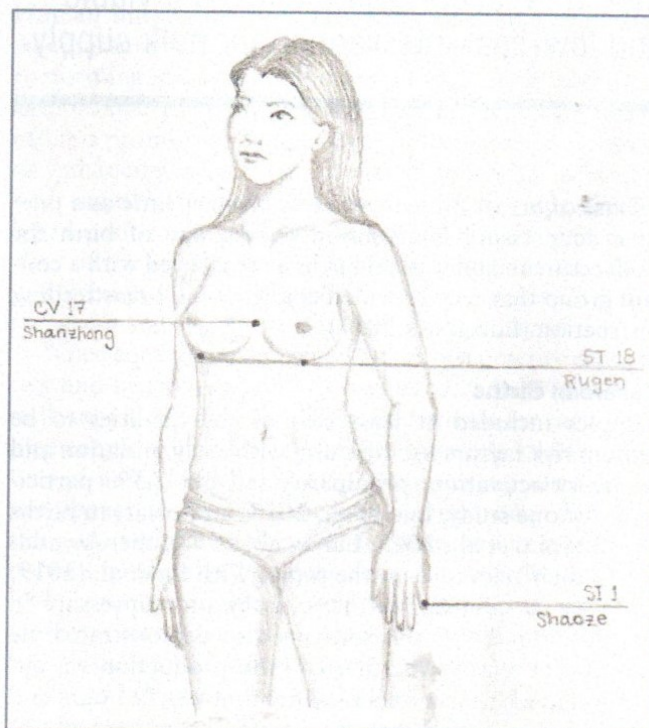
“sufficiency” is measured is important. See Table 3 for measurement methods used. Test weighing procedures, where the infant is weighed pre- and postfeeding to estimate milk intake during breastfeeding is considered the ideal measurement of the onset of secretory activation and milk sufficiency (Westerfield et al., 2018). Test weighing has been shown to improve breastfeeding outcomes, especially when performed at critical time periods such as within the first 3 to 4 days postpartum; it is also associated with

mother’s self-efficacy for breastfeeding over time leading to sustained breastfeeding relationships (Wilhelm et al., 2010). None of the studies in this integrative review used test weighing.

However, some authors report that maternal perception of lack of breast fullness, swelling, and leaking at 72 or more hours postpartum is an effective starting point in diagnosing a delay in secretory activation. Luo et al. (2017), Mann and Zhang (2014), and Erfina et al. (2020) each used this as part of their assessment showing significant results. Assessing feedings, pumping, and infant stooling patterns is another method for evaluating adequate milk supply (Westerfield et al., 2018). A “checklist of defecate” was mentioned but details were unreported in Sulymbona et al. (2020).

A sudden feeling of breast fullness is a marker used in conjunction with other biomarkers of increased concentrations of lactose, citrate, and glucose (Wambach & Spencer, 2021) is ideal in identifying the onset of secretory activation. Earlier secretory activation measured by

FIGURE 2.



Drawing courtesy of: Amy E. Zhuo, BSN, RNC-OB.



Anastasia Stahailo

Insufficient milk supply remains the most common reason cited around the world for early cessation of breastfeeding; therefore, acupressure may be a viable and low-cost intervention for milk supply.

a sense of breast fullness was seen from as little as a one-time acupressure intervention on the day of birth for both cesarean and vaginal births as compared with a control group that was provided conventional breastfeeding instruction (Luo et al., 2017).

Cesarean Births

Samples included at least two of the qualities to be known risk factors for difficulty with early initiation and secretory activation; primiparity (all but 7.5% participants of one study, Luo et al., 2017) and cesarean births ($n = 226$; Lu et al., 2019; Luo et al., 2017), thereby adding to their relevance on the topic. With Lu et al. (2019) research on cesarean births, efficacy of acupressure in promoting milk production was also demonstrated via substantial relative increase of milk production via circumferential measurement of breast at 48–72 hours and 72–96 hours in both breasts. The Tuina group had sig-

nificant and notably higher increases than the control group at both time intervals. See Table 2.

Prolactin is a major hormone that controls the underlying physiology of lactation and is essential for both initiating and maintaining milk production (Wambach & Spencer, 2021). Lu et al. (2019) found a significant slight increase (net changes of 16.72 ± 117.62 ng/mL) in serum prolactin in the acupressure treatment group and slight decrease (net changes -39.69 ± 82.40 ng/mL) in the control group when comparing levels from 24 and 72 hours. Even if the acupressure expedited what would have occurred without acupressure, this is important especially as much of the concern around low milk supply is maternal perception without measures. The early days are precarious and the more self-efficacy parents feel earlier on, the greater the likelihood of continuation of breastfeeding. Breastfeeding self-efficacy has been positively associated with breastfeeding duration and exclusivity in various cultures and age groups (Otsuka et al., 2014). Women with negative early breastfeeding experiences have also been shown to be at increased risk for postpartum depression (ACOG, 2021b), making preventative measures additionally important.

Prolactin

Anita et al. (2020) was the only study to evaluate vaginal births and secretory activation by measuring serum prolactin levels. Acupressure was done one time per day every morning for 3 consecutive days postpartum. Results

showed the hormone prolactin pre- and postacupressure 84.47 (± 10.28) and 96.13 (± 12.44) nm/dL having significance, although there was no control group to know if this increase would have happened with any intervention.

Discussion

Pregnant people need sufficient anticipatory guidance, and the lactating parent needs critical support and intervention during the crucial early postpartum is essential to ensure coming to volume. This crucial physiological process is necessary for families to be able to reach the recommended goals of feeding infants 100% human milk for the first 6 months of life, as recommended by the WHO (2021). Acupuncture, an aspect of TCM, has been well described for treating insufficient milk supply with numerous studies using points CV 17, SI 1, and ST 18 (National Library of Medicine, 2021). However, our integrative review focused on acupressure because it does not require additional tools such as needles or vaccaria seeds, which may be a barrier to use, especially within Western medicine. Acupressure therapy can be provided by nurses, midwives, doulas, and family support members making it inexpensive intervention to assist families in breastfeeding.

Being able to translate the research published only in Chinese could provide further evidence for the use of TCM specifically acupressure. However, in the United States, high-quality research with methodologic rigor using a single acupressure point CV 17 is warranted. The specific acupressure technique, optimal timing, minimum duration, and frequency for effectiveness in promoting secretory activation are all key variables to examine, as well as the use of pre-post weights to measure milk volume.

Limitations

Consistent with other criticisms of many alternative medicine studies, the research reported in this integrative review has limitations related to the extreme difficulty in double-blinding and placebo-controlling, with one study having no negative control (Anita et al., 2020). A literature review by Lu et al. (2009) contained citations for research that would build on our review; however, 12 of those citations were available only in Chinese and we did not have access to Chinese translators for this integrative review.

There were significant design details missing from recent studies. Sulymbona et al. (2020) did not mention which day postpartum acupressure intervention began and did not report results of what they termed “the baby’s defecating checklist,” making it difficult to fully understand the effectiveness of the acupressure. The methods section of Erfina et al. (2020) is not explicit about how milk production was measured. They report “breast milk production is measured using frequency and duration of breastfeeding” without further details. Therefore, it is difficult to conclude the most effective duration, frequency, or acupressure technique because either information was missing from some research or there was a lack of consistency among the studies to find an optimal approach.

IMPLICATIONS FOR NURSES

- Nurses, midwives, doulas, lactation consultants, and partners could learn and provide acupressure to assist postpartum people in human milk coming to volume via an acupuncture professional in their community. The American Society of Acupuncturists offers information on how to locate an acupuncture professional and other information <https://www.asacu.org/find-a-practitioner/>
- Acupressure at acupoints CV 17, ST 18, and SI 1 may assist in earlier conversion to lactogenesis II during postpartum, helping to build confidence and self-efficacy in new parents, which is linked to longer breastfeeding duration.
- Anticipatory guidance on acupressure points for lactation may be useful in preventing concerns of low milk supply for postpartum people, helping them reach their breastfeeding goals.
- If the breastfeeding parent is supported with acupressure for lactation within the first 1 to 7 days postpartum, it is possible that routine formula supplementation could be reduced.

Only Luo et al. (2017) reported that an experienced Tuina practitioner provided the intervention. In all other studies, who provided the acupressure was not reported. Luo et al. also mentioned that if the practitioner felt it warranted based on their assessment, they included additional acupoints which does not allow clinicians to translate this into clinical practice.

Clinical Implications

Human milk is the optimal source of infant nutrition. Acupressure, also known as Tuina, is the practice of performing massage techniques on traditional acupuncture points. Preliminary evidence suggests acupressure offers a promising, inexpensive, and low barrier method of enhancing secretory activation following cesarean and vaginal term and late preterm births, specifically when performed at acupoints CV 17, ST 18, and SI 1. Two of the studies reviewed in this paper (Anita et al., 2020; Lu et al., 2019) used acupressure point C17 and showed a significant increase in serum prolactin.

When considering implementation of a practice change, risk and benefits should be considered. Concerns of low milk supply are the most often cited reason for early supplementation with formula as well as early cessation of breastfeeding (ACOG, 2021b). Because acupressure does not appear to have any negative consequence and it is free and easy to implement when the technique is learned, it meets the threshold for consideration when clinicians are looking for alternatives to help families on their lactation journey. Nurses, midwives, doulas, lactation consultants, and partners could learn this technique as a potential preventive strategy that may help with secretory activation and coming to volume. ❖

Miriam A. Rosetti is a Graduate Student in Nurse Midwifery and Women's Health/Gender-Related Nurse Practitioner, School of Nursing, University of Pennsylvania, Philadelphia, PA.

Dr. Diane L. Spatz is a Professor of Perinatal Nursing, Helen M. Shearer Professor of Nutrition, School of Nursing, and Nurse Scientist, Children's Hospital of Philadelphia, University of Pennsylvania, Philadelphia, PA. Dr. Spatz can be reached via email at spatz@nursing.upenn.edu

The authors declare no conflicts of interest.

Copyright © 2022 Wolters Kluwer Health, Inc. All rights reserved.

DOI:10.1097/NMC.0000000000000866

References

- American Academy of Pediatrics, Section on Breastfeeding, Eidelman, A. I., Schanler, R. J., Johnson, M., Landers, S., Noble, L., Szucs, K., & Viehmann, L. (2012). Breastfeeding and the use of human milk (Policy Statement). *Pediatrics*, 129(3), e827–e841. <https://doi.org/10.1542/peds.2011-3552>
- American College of Obstetricians and Gynecologists. (2021a). Barriers to breastfeeding: Supporting initiation and continuation of breastfeeding: (Committee Opinion, No. 821). *Obstetrics and Gynecology*, 137(2), e54–e62. <https://doi.org/10.1097/AOG.00000000000004249>
- American College of Obstetricians and Gynecologists. (2021b). Breastfeeding challenges (Committee Opinion, No. 820). *Obstetrics and Gynecology*, 137(2), 394–395. <https://doi.org/10.1097/AOG.00000000000004254>
- Anita, N., Ahmad, M., Usman, A. N., Sinrang, A. W., Alasiry, E., & Bahar, B. (2020). Potency of back massage and acupressure on increasing of prolactin hormone levels in primipara postpartum; consideration for midwifery care. *Enfermeria Clinica*, 30(Suppl. 2), 577–580. <https://doi.org/10.1016/j.enfcli.2019.07.165>
- Betts, D. (2005). Postnatal acupuncture. *Journal of Chinese Medicine*, 77, 5–1542.
- Brown, C. R. L., Dodds, L., Legge, A., Bryanton, J., & Semenik, S. (2014). Factors influencing the reasons why mothers stop breastfeeding. *Canadian Journal of Public Health*, 105(3), e179–e185. <https://doi.org/10.17269/cjph.105.4244>
- Brownell, E., Howard, C. R., Lawrence, R. A., & Dozier, A. M. (2012). Delayed onset lactogenesis II predicts the cessation of any or exclusive breastfeeding. *The Journal of Pediatrics*, 161(4), 608–614. <https://doi.org/10.1016/j.jpeds.2012.03.035>
- Bryant, J., & Thistle, J. (2021). Anatomy, Colostrum. In *StatPearls*. StatPearls Publishing.
- Chang, P. C., Li, S. F., Yang, H. Y., Wang, L. C., Weng, C. Y., Chen, K. F., Chen, W., & Fan, S. Y. (2019). Factors associated with cessation of exclusive breastfeeding at 1 and 2 months postpartum in Taiwan. *International Breastfeeding Journal*, 14, 18. <https://doi.org/10.1186/s13006-019-0213-1>
- Erfina, Ahmad, M., Usman, A. N., Sinrang, A. W., Alasiry, E., & Bahar, B. (2020). Potential of acupressure to be complementary care by midwives in postpartum women's breast milk production. *Enfermeria Clinica*, 30(Suppl. 2), 589–592. <https://doi.org/10.1016/j.enfcli.2019.12.001>
- Hopia, H., Latvala, E., & Liimatainen, L. (2016). Reviewing the methodology of an integrative review. *Scandinavian Journal of Caring Sciences*, 30(4), 662–669. <https://doi.org/10.1111/scs.12327>
- Ilić, D., Djurović, A., Brdareški, Z., Vukomanović, A., Pejović, V., & Grajić, M. (2012). The position of Chinese massage (Tuina) in clinical medicine. *Vojnosanitetski Pregled*, 69(11), 999–1004. <https://doi.org/10.2298/VSP110104013I>
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. *PLoS Medicine*, 6(7), e1000100. <https://doi.org/10.1371/journal.pmed.1000100>
- Lu, P., Ye, Z. Q., Qiu, J., Wang, X. Y., & Zheng, J. J. (2019). Acupoint-tuina therapy promotes lactation in postpartum women with insufficient milk production who underwent caesarean sections. *Medicine*, 98(35), e16456. <https://doi.org/10.1097/MD.00000000000016456>
- Lu, P., Zheng, J., Zhao, Y., Chen, J., & Huang, L. (2009). Research advance on Tuina and postpartum milk secretion. *Journal of Acupuncture and Tuina Science*, 7(6), 375–378. <https://doi.org/10.1007/s11726-009-0375-2>
- Luo, Q., Hu, Y., & Zhang, H. (2017). Effects of point massage of liver and stomach channel combined with pith and trotter soup on postpartum lactation start time. *Journal of Obstetrics and Gynaecology*, 37(7), 872–876. <https://doi.org/10.1080/01443615.2017.1309366>
- Mann, B. R., & Zhang, H. (2014). Improvement in lactation with traditional Chinese medicine and Western herbal medicine: A case study. *The Journal of Chinese Medicine*, 105, 50–55.
- Meek, J. Y., Noble, L., & American Academy of Pediatrics Section on Breastfeeding. (2022a). Breastfeeding and use of human milk (Policy Statement). *Pediatrics*, 150(1), e2022057988. <https://doi.org/10.1542/peds.2022-057988>
- Meek, J. Y., Noble, L., & American Academy of Pediatrics Section on Breastfeeding. (2022b). Breastfeeding and use of human milk (Technical Report). *Pediatrics*, 150(1), e2022057989. <https://doi.org/10.1542/peds.2022-057989>
- Melnik, B. M., & Fineout-Overholt, E. (2015). "Box 1.3: Rating system for the hierarchy of evidence for intervention/treatment questions." In *Evidence-based practice in nursing & healthcare: A guide to best practice* (3rd ed., p. 11). Wolters Kluwer Health.
- Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P., Stewart, L. A., & PRISMA-P Group. (2015). Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*, 4(1), 1. <https://doi.org/10.1186/2046-4053-4-1>
- National Library of Medicine. (2021). *Acupuncture*. <https://www.ncbi.nlm.nih.gov/books/NBK501890/>
- Neri, I., Allais, G., Vaccaro, V., Minniti, S., Airola, G., Schiapparelli, P., Benedetto, C., & Facchinetti, F. (2011). Acupuncture treatment as breastfeeding support: Preliminary data. *Journal of Alternative and Complementary Medicine*, 17(2), 133–137. <https://doi.org/10.1089/acm.2009.0714>
- Odom, E. C., Li, R., Scanlon, K. S., Perrine, C. G., & Grummer-Strawn, L. (2013). Reasons for earlier than desired cessation of breastfeeding. *Pediatrics*, 131(3), e726–e732. <https://doi.org/10.1542/peds.2012-1295>
- Otsuka, K., Taguri, M., Dennis, C. L., Wakutani, K., Awano, M., Yamaguchi, T., & Jimba, M. (2014). Effectiveness of a breastfeeding self-efficacy intervention: Do hospital practices make a difference? *Maternal and Child Health Journal*, 18(1), 296–306. <https://doi.org/10.1007/s10995-013-1265-2>
- Spatz, D. L., & Lessen, R. (2011). *The risks of not breastfeeding* (Position Statement). The International Lactation Consultant Association.
- Sulymbona, N., As'ad, S., Khuzaimah, A., Miskad, U. A., Ahmad, M., & Bahar, B. (2020). The effect of acupressure therapy on the improvement of breast milk production in postpartum mothers. *Enfermeria Clinica*, 30(Suppl. 2), 615–618. <https://doi.org/10.1016/j.enfcli.2019.12.002>
- Sun, K., Chen, M., Yin, Y., Wu, L., & Gao, L. (2017). Why Chinese mothers stop breastfeeding: Mothers' self-reported reasons for stopping during the first six months. *Journal of Child Health Care*, 21(3), 353–363. <https://doi.org/10.1177/1367493517719160>
- Tureanu, L., & Tureanu, V. (1994). A clinical evaluation of the effectiveness of acupuncture for insufficient lactation. *American Journal of Acupuncture*, 22, 23–27.
- Wambach, K., & Spencer, B. (2021). *Breastfeeding and human lactation* (Sixth ed.). Jones & Bartlett Learning.
- Westerfield, K. L., Koenig, K., & Oh, R. (2018). Breastfeeding: Common questions and answers. *American Family Physician*, 98(6), 368–373.
- Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, 52(5), 546–553. <https://doi.org/10.1111/j.1365-2648.2005.03621.x>
- Wilhelm, S., Rodehorst-Weber, T. K., Flanders Stepan, M. B., & Hertzog, M. (2010). The relationship between breastfeeding test weights and postpartum breastfeeding rates. *Journal of Human Lactation*, 26(2), 168–174. <https://doi.org/10.1177/0890334409352904>
- World Health Organization. (2021). *Breastfeeding*. https://www.who.int/health-topics/breastfeeding#tab=tab_2
- Worobey, J. (2011). Why some mothers stop breast-feeding: Self-reported reasons for switching to formula. *Topics in Clinical Nutrition*, 26(3), 228–233. <https://doi.org/10.1097/TIN.0b013e3182260d9b>
- Zhao, Y., & Guo, H. (2006). The therapeutic effects of acupuncture in 30 cases of postpartum hypogalactia. *Journal of Traditional Chinese Medicine*, 26(1), 29–30.