

# ABM Clinical Protocol #32: Management of Hyperlactation

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## Abstract

*A central goal of the Academy of Breastfeeding Medicine is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breast-feeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient.*

## Introduction

**T**HE AIM OF THIS PROTOCOL is to review the diagnosis of hyperlactation and describe management recommendations. Throughout this protocol, the quality of evidence based on the Oxford Centre for Evidence-Based Medicine 2011 Levels of Evidence (Levels 1–5)<sup>1</sup> is noted in parentheses.

Hyperlactation, also termed hypergalactia or “oversupply,” is the production of breast milk in excess of the volume required for growth of healthy infant(s) based on international standards. No precise definition for this term exists, so reported cases constitute a wide spectrum of excess volumes. An average term infant consumes 450–1,200 mL daily (Level 4),<sup>2</sup> and production volumes higher than this may represent hyperlactation.

Multiple factors regulate milk production homeostasis (Levels 3 and 4).<sup>3,4</sup> These include the following:

- Amount of mammary glandular tissue in an individual breast
- Alveolar distension in the breast
- Degree and frequency of milk emptying
- Complex neuroendocrine pathways

In addition, the complex signaling of serotonin and possibly other bioactive factors may mediate some of the actions previously attributed to a single substance termed “Feedback Inhibitor of Lactation” (Level 4).<sup>5</sup>

Patients with hyperlactation may experience multiple breastfeeding complications, including breast pain, plugged

ducts, and mastitis. Dyads are at risk for early weaning and/or exclusive pumping due to latch difficulties and/or forceful letdown. Maternal and infant signs and symptoms of hyperlactation are summarized in Table 1. If medical complications and/or psychological distress occur, women with hyperlactation may be advised to decrease their milk production. Behavioral interventions, herbal therapies, and prescription medications have been used to treat hyperlactation, with varying success rates and levels of evidence. As the effect of each intervention may vary between individuals, determination of optimal therapy regimens, such as dosage and frequency, remains challenging.

## Differential Diagnosis

Hyperlactation may be self-induced, iatrogenic, or idiopathic.

- *Self-induced hyperlactation* occurs when the mother stimulates production of more milk than the infant requires. This may occur from excessive pumping in addition to breastfeeding. Mothers may fear not having sufficient milk in the future, desire to donate milk, or misunderstand that they do not need to store high volumes of milk for return to work. Women who exclusively pump may produce more milk than needed for the infant(s). Women also may self-induce a rate of milk production higher than needed by their infant(s) by taking herbal substances and/or prescription medications that may increase milk production.

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TABLE 1. SIGNS AND SYMPTOMS THAT MAY BE ASSOCIATED WITH HYPERLACTATION IN THE BREASTFEEDING DYAD

<i>Maternal signs/symptoms</i>	<i>Infant signs/symptoms</i>
Excessive breast growth during pregnancy >2 cup sizes	Excessive weight gain
Persistent or frequent breast fullness	Difficulty achieving a sustained, deep latch
Breast and/or nipple pain	Fussiness at the breast
Copious milk leakage	Choking, coughing, or unlatching during feeds
Recurrent plugged ducts	Breast refusal
Recurrent mastitis	Clamping down on the nipple/areola
Nipple blebs	Short feedings
Vasospasm	Gastrointestinal symptoms (e.g., spitting up, gas, reflux, or explosive green stools)

- *Iatrogenic hyperlactation* occurs when health professionals contribute to excessive milk production. Providers may advise women to take galactagogues (i.e., substances that increase the rate of human milk synthesis) without close follow-up and/or guidance regarding cessation. In addition to prescribing metoclopramide and/or domperidone, other medications such as metformin may increase the rate of milk synthesis (Level 4).<sup>6</sup> Health professionals also may advise expressing milk in addition to direct breastfeeding. While this may be appropriate in certain situations, it also may lead to persistent overproduction of milk if not closely monitored.
- *Idiopathic hyperlactation* is a term reserved for mothers who struggle with high rates of milk production with no clear etiology. It is normal for healthy mothers to experience breast fullness in the first several weeks postpartum, as their milk production adjusts to the demands of their infant(s). However, if fullness and high production persist, idiopathic hyperlactation represents a diagnostic consideration.

Although hyperprolactinemia has been suggested as a cause of hyperlactation, no evidence exists that correlates prolactin level with rate of milk production (Levels 3 and 4).<sup>7,8</sup> In fact, mothers with a history of pituitary adenomas have been reported to have insufficient milk production (Level 4).<sup>9</sup>

No consensus exists regarding how early in the postpartum period a diagnosis of hyperlactation can be made. Hyperlactation can be distinguished from engorgement by lack of interstitial edema and persistence of symptoms beyond 1–2 weeks postpartum (Level 4).<sup>10</sup> Mild cases of hyperlactation may never be formally diagnosed, as they may resolve spontaneously within a few months as prolactin levels decline and regulation of milk synthesis shifts from predominantly hormonal to local control (Level 3).<sup>7,11</sup>

## Management

### *General principles*

Laboratory testing or pituitary imaging tests are not recommended in the setting of hyperlactation. An algorithm for

the suggested management of hyperlactation is presented in Figure 1. In the absence of data on the relative efficacies of different interventions, we recommend using low-risk, low-cost management strategies before progressing to substances or medications with potential adverse drug reactions (Level 5). Specifically, we recommend the following:

- Behavioral interventions and anticipatory counseling to prevent and treat self-induced and iatrogenic hyperlactation.
- For idiopathic hyperlactation, first line therapy should be block feeding under close supervision by a breastfeeding medicine expert, as detailed below.
- For persistent cases of idiopathic hyperlactation that do not respond adequately to block feeding, herbal therapies and/or prescription medications may be considered. Selection of second line and subsequent therapies should be individualized to the dyad, based on factors such as number of weeks postpartum, potential adverse drug reactions, potential medication interactions, patient preferences, and cultural beliefs.
- Dopamine agonists should be reserved for the most refractory cases of idiopathic hyperlactation, due to risks of serious adverse drug reactions and the potential for complete cessation of milk production.

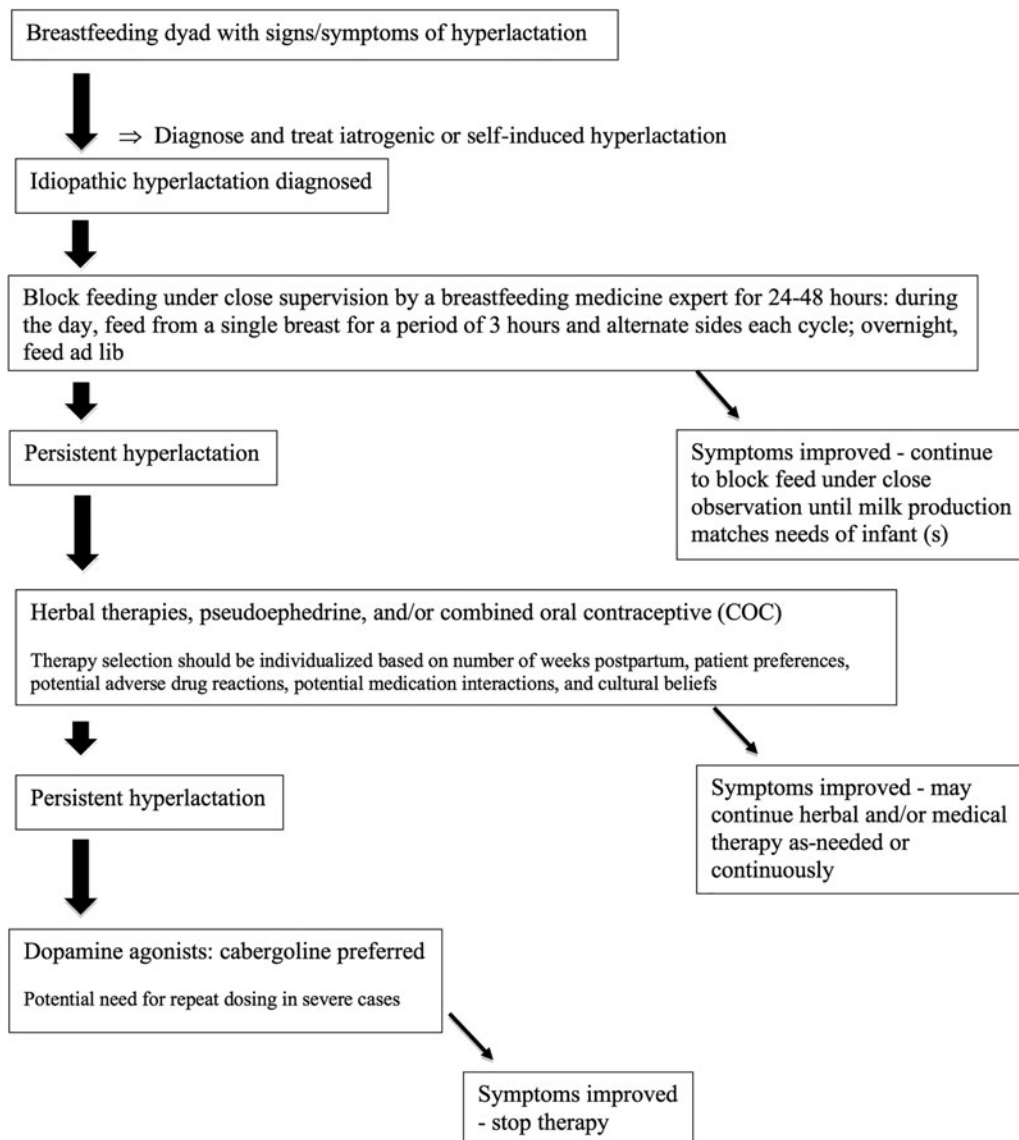
Until the rate of milk production is normalized, mothers can try using the laid-back/biological nursing position to decrease flow rate and maintain a positive direct breastfeeding relationship. To maximize the fat content of the milk—particularly if there is clinical concern for significant foremilk-hindmilk imbalance—mothers can perform gentle breast massage (Level 3)<sup>12</sup> before feeds and prioritize hand expression over mechanical expression (Level 2)<sup>13</sup> when milk expression is needed. No evidence exists to support the use of cabbage leaves or breast binding in hyperlactation.

### *Behavioral interventions*

Prevention of self-induced and iatrogenic hyperlactation. To avoid a scenario of self-induced or iatrogenic hyperlactation, we recommend counseling breastfeeding mothers and family about the following:

- Individualized, rather than prescriptive, recommendations for frequency and duration of direct breastfeeding and expressing milk.
- Avoiding unnecessary consumption of galactagogues, including traditional foods that may contain galactagogues (e.g., herbal teas, curry sauces spiced with fenugreek, soups containing moringa) (Levels 4 and 1).<sup>6,14,15</sup>
- Misconception that healthy term infant feeding volumes will increase significantly beyond the initial 6 weeks of life.
- Cultural expectations about normal infant feeding and sleeping patterns.
- Appropriate quantities of stored milk needed for emergency and/or return to work, according to the specific needs of the dyad.
- Prior challenges with breastfeeding, including fear/anxiety or lower production volumes than desired by mother.
- Misinterpretation of infant feeding cues and fussing as a sign of insufficient milk production.

**Block feeding.** Most cases of self-induced and iatrogenic hyperlactation should resolve with removal of external stimuli



**FIG. 1.** Algorithm for the diagnosis and management of idiopathic hyperlactation.

such as excessive expressing and/or galactagogues. Dyads who exhibit persistent signs and symptoms of hyperlactation or those who experience idiopathic hyperlactation may benefit first from intervention with block feeding.

Block feeding—breastfeeding or expressing milk from one breast for a specific period of time—can decrease overproduction of milk by engaging local breast autocrine regulatory mechanisms. The literature describes several variations of this technique (Level 4).<sup>16,17</sup> We recommend direct breastfeeding or expressing milk from a single breast during a period of 3 hours, alternating breasts each cycle (Level 5). Feeding by time blocks should be performed during the day (e.g., 09:00–18:00) and ad lib feeding from both breasts should be performed overnight (Level 4).<sup>18</sup> If the contralateral breast becomes too full, the mother can express small volumes of milk for comfort. If effective for the dyad, these cycles should result in clinical improvement within 24 to 48 hours.

Due to risks of plugged ducts, mastitis, poor infant weight gain, infant reluctance to cooperate with the block schedule, or too great a decrease in milk production, block feeding

requires close supervision by a physician knowledgeable in breastfeeding care. Given differences in response to block feeding, providers should modify management for individual dyads and follow patients throughout the course of block feeding (Level 4).<sup>19</sup> Close monitoring on an individualized daily or weekly basis can help ensure adequate infant growth and reduce maternal complications. Block feeding must be discontinued in the event that milk production falls below the infant's needs.

#### Herbal therapies

Peppermint, sage, jasmine flowers, and chasteberry commonly have been used to reduce milk production (Table 2).

- No published literature has reported the use of peppermint (Level 4)<sup>20</sup> in the treatment of hyperlactation. Anecdotal evidence supports oral ingestion and topical application to the breast, but infant toxicity (e.g., apnea, muscle weakness) may result from the latter (Level 4).<sup>18</sup>

TABLE 2. COMMON HERBAL THERAPIES USED FOR HYPERLACTATION MANAGEMENT

Herb	Dosing/ administration	Potential adverse drug reactions
Peppermint oil	No consensus	Heartburn, nausea, vomiting
Sage	1–3 g dried leaves in one cup of hot water, or one dose of sage extract per manufacturer's recommendations	Nausea, vomiting, dizziness, wheezing, agitation, hypoglycemia, seizures
Jasmine	No consensus	Allergic reaction
Chasteberry	No consensus	Nausea, headache, gastrointestinal symptoms, menstrual irregularity, acne, pruritis, exanthema

- There are no scientific studies on the impact of sage (Level 4)<sup>21</sup> on milk production. If a dose of sage is ingested, it is advisable to monitor for effect on milk production for 8–12 hours before repeating the dose (Level 4).<sup>18</sup>
- Jasmine flowers placed on the breast and replaced every 24 hours for 5 days was shown in an older study to be as effective as bromocriptine 2.5 mg three times daily to suppress lactation (Level 2).<sup>22</sup>
- Chasteberry has phytoestrogenic and phytoprogestogenic activity and traditionally has been used to treat gynecologic conditions. The effect of chasteberry (*Vitex agnus castus*) on milk synthesis is controversial (Level 1)<sup>23</sup> and some advise against its use during lactation due to lack of safety data (Level 1).<sup>24</sup>
- Other less widely used herbs, but which are utilized more regionally, include basil, caraway, and parsley (Level 4).<sup>15</sup>

#### Prescription medications

Pseudoephedrine is a nonprescription decongestant medication that can decrease milk production, although the mechanism of action remains unknown. Aljazaf et al. found that a 60 mg dose decreased milk production by 24% (Level 2).<sup>25</sup> We recommend starting with 30 mg once and observing for infant and maternal adverse drug events for 8–12 hours (Table 3); if no adverse events or decrease in milk production is observed, increase to 60 mg (Level 5). Mothers can continue dosing every 12 hours as needed. The dyad must be followed closely: most mothers will require only as-needed dosing or otherwise risk a too great drop in production. However, a select few may require more scheduled dosing.

Estrogen may significantly decrease milk production in some women (Level 1),<sup>26</sup> particularly at high doses in the early postpartum period (Level 4).<sup>27</sup> The World Health Organization recommends against the use of estrogen-containing oral contraceptives in breastfeeding women in the first 6 weeks after delivery and cautions against use before 6 months postpartum (Level 4).<sup>28</sup> For the treatment of hyperlactation, we recommend prescribing a combined oral contraceptive (COC) that contains 20–35 micrograms (mcg) of estradiol, no sooner than

TABLE 3. COMMON PRESCRIPTION MEDICATIONS USED FOR HYPERLACTATION MANAGEMENT

Medication	Dosing/ administration	Potential adverse drug reactions
Pseudoephedrine	30–60 mg once to twice daily	Jitteriness, insomnia, irritability, hypertension, tachycardia, arrhythmia
Estrogen	Combined oral contraceptive with 20–35 µg estradiol	Venous thromboembolism, pulmonary embolism
Cabergoline	0.25–0.5 mg every 3–5 days as needed	Headache, nausea, depressed mood, dizziness, drowsiness or nervousness
Bromocriptine	2.5 mg daily for 3 days	Stroke, seizure, severe hypertension, myocardial infarction, psychosis

6 weeks postpartum (Level 5). Milk production may significantly decrease within 7 days, at which point the COC could be stopped to prevent further decline (Level 4).<sup>18</sup> For some mothers, continual use of COC maintains milk production at a reasonable rate. Close monitoring is essential given the variability in individual responses.

If hyperlactation persists despite all other interventions, dopamine agonists such as bromocriptine or cabergoline can be utilized. The more ideal side effect profile of cabergoline makes it preferred over bromocriptine in lactating women (Level 4).<sup>29,30</sup> Cabergoline is a long-acting medication with a half-life of ~68 hours (Level 4).<sup>29</sup> We recommend starting with a single dose of 0.25 milligrams (mg) (Level 5). If the mother experiences no decline in milk production by 72 hours, repeat this dose. If this low dose has no effect, increase the dose to 0.5 mg 3 to 5 days later. If cabergoline is unavailable, bromocriptine may be dosed at 0.25 mg daily for 3 days (Level 2).<sup>31</sup>

#### Recommendations for Future Research

As current knowledge of physiologic factors associated with endocrine and autocrine control of lactation is largely based on bovine and other animal studies, further research is needed to determine whether similar pathways regulate human milk production. There is a particular need for human lactation research on factors that cause idiopathic hyperlactation and development of dramatic pathology such as gigantomastia. Targeted therapies, such as an upregulator of local inhibitory mediators, can be identified through translational research.

In addition, as limited data exist regarding the methods used to manage hyperlactation, further studies are needed to evaluate the relative efficacies of different management strategies for hyperlactation. Prospective studies would provide high-level data on the effect of specific therapies on milk production. Case series of women treated with a single therapy would

improve our understanding of the natural range of responses as well as side effects. Clinical research studies comparing various treatment approaches would provide evidence on relative efficacies. In addition, observational studies could be done to compare different doses of a single therapy.

### Annotated Bibliography

For more information on management of hyperlactation, please see the Supplementary Data.

### Disclosure Statement

No competing financial interests exist.

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### Supplementary Material

Supplementary Data

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ABM protocols expire 5 years from the date of publication. Content of this protocol is up-to-date at the time of publication. Evidence-based revisions are made within 5 years or sooner if there are significant changes in the evidence.

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