CHAPTER 6

BREASTFEEDING

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Canada

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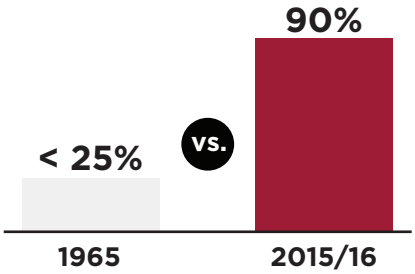
CHAPTER 6

BREASTFEEDING

BREASTFEEDING IN CANADA

Breastfeeding initiation rates in Canada have INCREASED



The most common reasons mothers give for stopping breastfeeding before 6 months are:

- not enough milk
- difficulty with breastfeeding technique

57%

In 2011/12, **OVER HALF** of women who breastfed continued some breastfeeding **beyond 6 months**.

Close to **25%** of women **STOP** breastfeeding before their infant is **one month old**.

Breastfeeding rates also vary across the country along a general west-to-east gradient.

In 2011/12, breastfeeding initiation ranged from **96%** in **British Columbia and Yukon** to **57%** in **Newfoundland and Labrador**.

BABY-FRIENDLY FACILITIES

21 hospitals, 8 birthing centres and **117 community centres** are designated as **BABY-FRIENDLY** facilities in Canada.

Globally only **10% of infants** are born in a hospital designated **BABY-FRIENDLY**.

A hospital providing maternity services or a community health facility is designated as **BABY-FRIENDLY** if it meets the criteria for achieving the **Ten Steps AND adheres to the International Code of Marketing of Breast-milk Substitutes**.

For references consult **Chapter 6: Breastfeeding**: Public Health Agency of Canada. Family-Centred Maternity and Newborn Care: National Guidelines. Ottawa (ON): PHAC; 2018.

PROTECTING, PROMOTING AND SUPPORTING BREASTFEEDING: CANADIAN RECOMMENDATION AND THE TEN STEPS TO SUCCESSFUL BREASTFEEDING

Exclusive breastfeeding for the first 6 months, and sustained for up to 2 years or longer with appropriate complementary feedings.

	WHO/UNICEF (2018)	CANADA (2017)[i]
STEP 1	a. Comply fully with the *International Code of Marketing of Breast-milk Substitutes* and relevant World Health Assembly resolutions. b. Have a written infant feeding policy that is routinely communicated to staff and parents. c. Establish ongoing monitoring and data-management systems.	• Have a written infant feeding policy that is routinely communicated to all staff, health care providers and volunteers.
STEP 2	• Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.	• Ensure all staff, health care providers and volunteers have the knowledge and skills necessary to implement the infant feeding policy.
STEP 3	• Discuss the importance and management of breastfeeding with pregnant women and their families.	• Inform pregnant women and their families about the importance and process of breastfeeding.
STEP 4	• Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.	• Place babies in uninterrupted skin-to-skin contact with their mothers immediately following birth for at least an hour or until completion of the first feeding or as long as the mother wishes. Encourage mothers to recognize when their babies are ready to feed, offering help as needed.
STEP 5	• Support mothers to initiate and maintain breastfeeding and manage common difficulties.	• Assist mothers to breastfeed and maintain lactation should they face challenges including separation from their infants.

PROTECTING, PROMOTING AND SUPPORTING BREASTFEEDING: CANADIAN RECOMMENDATION AND THE TEN STEPS TO SUCCESSFUL BREASTFEEDING

	WHO/UNICEF (2018)	CANADA (2017)[i]
STEP 6	• Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.	• Support mothers to exclusively breastfeed for the first six months, unless supplements are medically indicated.
STEP 7	• Enable mothers and their infants to remain together and to practise rooming-in 24 hours a day.	• Facilitate 24-hour rooming-in for all mother-infant dyads: mothers and infants remain together.
STEP 8	• Support mothers to recognize and respond to their infants' cues for feeding.	• Encourage responsive, cue-based feeding. Encourage sustained breastfeeding beyond six months with appropriate introduction of complementary foods.
STEP 9	• Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.	• Support mothers to feed and care for their breastfeeding babies without the use of artificial teats or pacifiers (dummies or soothers).
STEP 10	• Coordinate discharge so that parents and their infants have timely access to ongoing support and care.	• Provide a seamless transition between the services provided by the hospital, community health services and peer support programs. Apply principles of Primary Health Care and Population Health to support the continuum of care and implement strategies that affect the broad determinants that will improve breastfeeding outcomes.

[i] The Ministère de la Santé et des Services sociaux (MSSS) is the authority for breastfeeding and the Baby Friendly Initiative in the province of Quebec. As a result, the standards applied in Quebec are those of the MSSS.

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Breastfeeding is recognized as the unequalled way to provide optimal nutritional, immunological and emotional nurturing of infants.[1–3] Consistent with the World Health Organization (WHO) global recommendation for public health, Health Canada recommends exclusive breastfeeding for the first 6 months, and sustained for up to 2 years or longer with appropriate complementary feeding to support nutrition needs, for immunological protection and growth and development of infants and toddlers. Breastfeeding is also linked to many of the United Nations Sustainable Development Goals, such as no poverty, zero hunger, good health and well-being, no inequity, and responsible consumption and production.[4]

There is no doubt about the importance of breastfeeding for infants, young children, and mothers. The effects occur both during and beyond the breastfeeding period. Recent studies and position statements reflect findings of the dose–response effect of breastfeeding: the more exclusive breastfeeding is in the first 6 months and the longer the duration beyond 6 months, the greater the impact and protection. Important factors for the infant include:[5–9]

- Breastmilk is easily digested and offers the right quantity of nutrients as it adapts to the needs of infants as they mature;
- Breastfeeding enhances cognitive development and may protect against gastrointestinal infections, acute otitis media, and respiratory tract infection;
- Breastfeeding may be protective against obesity later in life; and
- Breastfeeding is linked to a decrease in sudden infant death syndrome (SIDS).

Important factors for the mother/family include:[10–13]

- Breastfeeding is a preventive health measure for the lactating mother as it is associated with a decrease in the incidence of both breast and ovarian cancers;
- Breastfeeding is associated with a delay in the return of ovulation and greater postpartum weight loss and with decreased risk of hypertension, diabetes, hyperlipidemia, and cardiovascular disease; and
- Breastfeeding is cost saving for families—there is no need to buy bottles or breastmilk substitutes.

Important factors for society include:[14–16]

- Breastfeeding is cost saving to society as improved maternal and child health reduces loss of productivity due to illness and other health care costs; and
- Breastfeeding has little environmental impact as there are no by-products and garbage associated with manufacture and purchase of breastmilk substitutes.

Family-centred care respects parents' informed choices on how they choose to feed their infant. Choosing a feeding method is influenced by a number of factors, including personal experience, knowledge, culture, marketing practices and attitudes of partners, family and friends. Health care providers (HCPs) play an important role in helping families make informed decisions—and in respecting and supporting their decision.

> ADDITIONAL RESOURCES ON BREASTFEEDING: SEE APPENDIX A

Breastfeeding in Canada

Breastfeeding initiation rates in Canada have increased from less than 25% in 1965 to 90% in 2015/16, a significant improvement.[17,18] But breastfeeding duration falls short of recommendations and, of the mothers who initiate breastfeeding, close to 25% stop before their infant is 1 month old.[2] The most common reasons mothers give for stopping breastfeeding before 6 months are "not enough milk" (44%) and "difficulty with breastfeeding technique" (18%).[19]

Although the percentage of Canadian mothers who breastfeed their infant exclusively to 6 months has increased from 17% in 2003, it remains low, at 32%.[18,19] In 2011/12, over half (57%) of mothers who breastfed continued some breastfeeding beyond 6 months. This percentage dropped to 19% after the infant's first year of life.[3]

Breastfeeding rates also vary across the country along a general west-to-east gradient. In 2011/12, breastfeeding initiation ranged from 96% in British Columbia and Yukon to 57% in Newfoundland and Labrador.[19] The greatest increase in breastfeeding initiation between 2003 and 2011/12 was in Quebec, from 76% to 89%.

There is little information about the extent to which Canadian women continue to breastfeed until their children are 2 years or older, as per WHO/UNICEF and Health Canada recommendations.

> **"As a result of becoming designated Baby-Friendly, care is more patient centred, quality of care improves, staff attitudes regarding infant feeding improve, and use of infant formula and nurseries decrease.**

Breastfeeding Protection, Promotion, and Support—The Baby-Friendly Initiative

Breastfeeding initiation and duration increase with active protection, promotion, and support. The evidenced-based policies and practices of the WHO/UNICEF Baby-friendly Hospital Initiative (BFHI) have been shown to improve breastfeeding initiation, duration, and exclusivity.[20–32] The BFHI is based on the policies and practices described in *Ten Steps to Successful Breastfeeding* (the Ten Steps) and the *International Code of Marketing of Breast-milk Substitutes*.[33,34] The process of becoming a designated Baby-Friendly facility can often be a catalyst for changing a facility's environment around infant feeding and it motivates facilities to transform their practices. As a result of becoming designated Baby-Friendly, care is more patient centred, quality of care improves, staff attitudes regarding infant feeding improve, and use of infant formula and nurseries decrease.[33]

The 2017 WHO *Guideline: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services* provides evidence-based recommendations to support the protection, promotion and support for breastfeeding in facilities that provide maternity and newborn services.[35] It examined the evidence of the original Ten Steps and developed 15 recommendations relating to immediate support to initiate and establish breastfeeding, feeding practices and additional needs of infants, and creating an enabling environment.

The 2018 WHO/UNICEF update of the *Implementation Guidance: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services: the revised Baby-Friendly Hospital Initiative* provides the first update of the Ten Steps since 1989 and complements the 2017 WHO guideline.[36] The topic of each of the Ten Steps remains the same; however the updated wording is based on the latest evidence and global policies.[36] Additionally,

the WHO Code of the Marketing of Breast-Milk Substitutes is incorporated into Step 1. The first 2 steps address critical management procedures while Steps 3 to 10 describe clinical practice standards.

In Canada, the Baby-Friendly Initiative (BFI) has been adapted from the BFHI to incorporate the continuum of care between hospital and community health services, and to include recommendations for breastfeeding the older infant and young child.[37] A hospital providing maternity services or a community health facility is designated as *Baby-Friendly* if it meets the criteria for achieving the Ten Steps and adheres to the *International Code of Marketing of Breast-milk Substitutes*. The Breastfeeding Committee for Canada (BCC) is the BFI authority for the majority of Canada, and oversees the initiative's implementation and assessment. Provincial and Territorial Committees collaborate with the BCC and hospital and community facilities to implement the BFI at the local level. In the province of Quebec, the Ministère de la Santé et des Services sociaux (MSSS) is the authority for breastfeeding and the BFI, and applies its own standards and assessment process within the province.

The joint statement, *Nutrition for Healthy Term Infants*: *Recommendations from Birth to Six Months* (NHTI recommendations), co-authored by Health Canada, the Public Health Agency of Canada (PHAC), the Canadian Paediatric Society (CPS), Dietitians of Canada, and the BCC, recommends that hospitals and community health services implement BFI policies and practices.[2] Accreditation Canada has incorporated the BFI and the content of the Ten Steps and WHO Code into the Obstetrics Services Standards for hospitals.[38] In *The BFI 10 Steps and WHO Code Outcome Indicators for Hospital and Community Health Services*, the BCC describes the breastfeeding data collection required for Baby-Friendly designation.[37] Consult the MSSS for data requirements in the province of Quebec.

Despite the recommendations and the endorsement of many professional health organizations, hospitals and community health facilities have a poor record, so far, of implementing the BFI.[39,40] Currently, 21 hospitals, 8 birthing centres and 117 community centres have been designated as Baby-Friendly facilities in Canada.[41] Globally only 10% of infants are born in a hospital designated Baby-Friendly. WHO emphasizes that countries should scale up BFI implementation to universal coverage and ensure sustainability.

A growing body of literature also focuses on optimizing breastfeeding outcomes for newborns within neonatal intensive care units (NICUs). Work is underway internationally to adapt the BFHI to these settings, referred to as *Neo-BFHI*.[42,43]

The underlying philosophy of the BFI is based on the basic principles of family-centred care. Mothers and babies are mutually interdependent units, and breastfeeding is the unequalled method of infant feeding. Each mother–infant dyad and their family is supported in finding the best possible approach within their unique context. The role of HCPs includes supporting this normal process, removing barriers to success, and providing additional support when challenges arise.

The content of this chapter is organized according to the sequence in the *Ten Steps to Successful Breastfeeding* (2018).[33] The heading of each of the Ten steps includes the WHO description from the BFHI, followed by the Canadian wording from the BCC. [37]

This chapter does not outline the specific criteria for achieving Baby-Friendly designation. Refer to *The BFI 10 Steps and WHO Code Outcome Indicators for Hospital and Community Health Services* for Baby-Friendly designation requirements and assessments, and consult the MSSS for criteria in the province of Quebec. [37]

1 WRITTEN BREASTFEEDING POLICY

STEP 1	
WHO/UNICEF	• Comply fully with the *International Code of Marketing of Breast-milk Substitutes* and relevant World Health Assembly resolutions. • Have a written infant feeding policy that is routinely communicated to staff and parents. • Establish ongoing monitoring and data-management systems.
CANADA	• Have a written infant feeding policy that is routinely communicated to all staff, health care providers and volunteers.

The Code

The *International Code of Marketing of Breast-milk Substitutes*, published in 1981 and reaffirmed by the World Health Assembly in 2018, to which Canada is a signatory, was developed in response to inappropriate marketing practices that contributed to the decline of breastfeeding, particularly in developing countries.[44] The WHO Code was developed to ensure that health priorities—not profit interests—influence women's decisions to breastfeed. The Code prohibits the promotion and marketing of infant formula, bottles, nipples, and complementary foods for infants less than 6 months of age. The WHO Code strives to "...provide safe and adequate nutrition for infants, by the protection and promotion of breast-feeding, and by ensuring the proper use of breastmilk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing."

This Code seeks to protect and promote breastfeeding by ensuring the ethical marketing of breastmilk substitutes by industry and states. There should be:[37]

- No advertising of these products (i.e., infant formula, bottles, nipples or teats, pacifiers or soothers) to the public;
- No free samples of these products to be given to mothers or their families;
- No promotion of artificial feeding products in health care facilities or distribution of free or low-cost supplies;
- No company representatives advising mothers;
- No gifts or personal samples given to health care workers; and
- No words or pictures idealizing artificial feeding, including pictures of infants on the labels of products.

In addition:

- Information given to health workers should be evidence-based and factual;
- All information on artificial infant feeding, including the labels, should explain the importance of breastfeeding and the costs and hazards associated with artificial feeding;
- Unsuitable products, such as sweetened condensed milk, should not be promoted; and
- All breastmilk substitutes must be of a high quality and take into account the climatic and storage conditions of the country where they are used.

Governments are responsible for implementing the marketing restrictions through social and legislative means. The infant formula industry must ensure that their marketing and labelling practices are compliant with the legislation. HCPs should promote and protect breastfeeding and avoid any influence by or cooperation with industry marketing of infant formula. The health care system should promote and protect breastfeeding by not promoting infant formula products.[45]

The marketing of infant formula has a negative effect on breastfeeding, playing a role in normalizing a mixed feeding culture of breastfeeding and formula feeding.[46] Aggressive marketing practices are direct violations of the *International Code of Marketing Breast-milk Substitutes*. When a relationship is created between formula companies and HCPs, the result is brand loyalty and dependency.[47]

The Canadian Hospital Maternity Policies and Practices Survey found that 68% of hospitals still had exclusive contracts with formula companies in 2007, although that this was down from 82% in 1993.[39] Still, 90% of hospitals reported that they did not give out sample formula packages—up from 58% in 1993.[48] The MES found that 64% of women reported that they were not offered or given free sample packages. Women who were younger, having their first babies, with lower education level or living in low income were more likely to be offered free samples.[49,50]

The relationship between physicians and the pharmaceutical industry influences professional practice. This is also the case with infant formula companies.[51] International studies have demonstrated that between 80% and 95% of physicians regularly see sales representatives from pharmaceutical companies, despite evidence that their information is biased and affects prescribing habits.[52] A number of medical associations and other groups are calling for specific measures to *disentangle* the relationship between HCPs and industry.

There have been known cases of violations of the WHO Code by the formula industry in Canada.[45] In the *Labelling Requirements for Infant Foods, Infant Formula and Human Milk*, the Canadian Food Inspection Agency (CFIA) and Health Canada strongly urge the infant formula industry to respect and implement the principles of the Code.[53] In addition, certain principles set out in the Code also align with section 5(1) of the *Food and Drug Act*.[53] Two provincial governments (British Columbia and Nova Scotia) have formula purchase agreements supporting facilities to purchase formula and feeding products rather than accepting free gifts or marketing materials.

Refer to *The BFI 10 Steps and WHO Code Outcome Indicators for Hospital and Community Health Services* for the *WHO International Code of Marketing of Breast-Milk Substitutes* code compliance checklist.[37,44]

> **It is important that everyone—managers, administrators, auxiliary staff, students, clerks, allied health professionals, volunteers, and all HCPs—know about the importance of breastfeeding, the BFI, and the *International Code of Marketing of Breast-milk Substitutes*.**

Infant Feeding Policy

Breastfeeding is the unequalled method of infant feeding for their healthy growth and development—and policies to do with infant feeding need to reflect that. Nevertheless, support for mothers who choose to feed their infants breastmilk substitutes (i.e., formula) or who are unable to breastfeed should be included in these policies.

Templates and examples of infant feeding policies are available from Baby-Friendly facilities or online to help in the policy development process. The implementation of policies requires "carefully planned, multipronged and multilevel approaches," ideally involving multiple stakeholders including families, to be effective and sustainable.[46] Change management strategies are available from the growing field of implementation science to target organizational culture and clinical practice.

The infant feeding policy development process should include a scan of all existing policies through a Baby-Friendly lens. For example:

- Policies should encourage and support families to stay together when either mother or infant are readmitted for care;
- Policies on newborn care at birth should refer to skin-to-skin contact;
- Policies on painful procedures should include encouraging mothers to soothe their infant by breastfeeding or providing skin-to-skin contact.

Resources that can help develop breastfeeding policies and practice guidelines include:[2,3,35–37,44,54–56]

- *Implementation guidance: Protecting, Promoting, and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services: The Revised Baby-friendly Hospital Initiative*;
- *International Code of Marketing of Breast-milk Substitutes*;
- *Guideline: Protecting, Promoting and Supporting Breastfeeding in Facilities Providing Maternity and Newborn Services;*
- *The BFI 10 Steps and WHO Code Outcome Indicators for Hospital and Community Health Services*;
- *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* and *Nutrition for Healthy Term Infants: Recommendations from Six to 24 Months*;
- *Breastfeeding Healthy Term Infants*;
- Clinical protocols by the Academy of Breastfeeding Medicine; and
- *The Baby-Friendly Hospital Initiative for Neonatal Wards* (Neo-BFHI).

Because families interact with staff other than their HCPs in hospitals and community health facilities, it is important that everyone—managers, administrators, auxiliary staff, students, clerks, allied health professionals, volunteers, and all HCPs—know about the importance of breastfeeding, the BFI, and the *International Code of Marketing of Breast-milk Substitutes*.

Families also need to be aware of the standard of care that they can expect, and can learn about these from their HCPs and via social media, print materials, and prenatal classes.

Monitoring and data collection

Collecting breastfeeding data is an essential component of health surveillance, and monitoring of trends is important in program development, implementation, and evaluation. Lack of consistent data collection and standardized definitions across facilities and provinces/territories can be problematic and create challenges at all levels.[40]

Data collection should include:

- Rates of breastfeeding initiation and exclusivity at hospital discharge;
- Rates of exclusive breastfeeding to age 6 months; and
- Rates of breastfeeding to age 2 years or older.

2 KNOWLEDGE AND SKILLS TO IMPLEMENT BREASTFEEDING POLICIES

STEP 2	
WHO/UNICEF	• Ensure that staff have sufficient knowledge, competence and skills to support breastfeeding.
CANADA	• Ensure all staff, health care providers and volunteers have the knowledge and skills necessary to implement the infant feeding policy.

Undergraduate and Postgraduate Education

As awareness of the importance of protecting, promoting, and supporting breastfeeding increases, undergraduate and continuing professional education of HCPs needs to address the biological, social, and emotional components of breastfeeding—and the multiplicity of factors that affect this dynamic relationship. However, numerous studies describe the lack of formal breastfeeding information in HCPs' educational programs.[57–60]

HCPs are known to affect the breastfeeding relationship. Women who perceive their HCPs as supportive of breastfeeding are more likely to breastfeed than those who perceive them as neutral or favouring formula feeding.[61,62] In fact, the more often breastfeeding is mentioned during pregnancy, the more likely women will breastfeed.[63]

Continuing Education

Everyone who works at a health facility—administrators, managers, volunteers, allied health professionals, auxiliary staff, students, clerks, and all HCPs—needs to be aware of the facility's policies, including the BFI. Specific training in keeping with everyone's role should be provided. For example, phlebotomists should actively support mothers in breastfeeding or holding the baby in skin-to-skin contact to comfort their child through blood tests.

Continuing professional education needs to be developed to address the breastfeeding needs of families and enhance the care of mothers and babies. A holistic and interprofessional approach to professional continuing education should be a responsibility shared by HCPs and health facilities.

Education Strategies

WHO and UNICEF recommend 18–20 hours of breastfeeding education (including 3 hours of clinical experience) for HCPs who provide direct breastfeeding care, for example, lactation consultants, perinatal nurses, midwives, obstetricians, and family physicians. Providers responsible for clinical support of breastfeeding mothers and infants require specific knowledge, skills, and attitudes.[59] Research suggests that clinical mentorships, didactic learning modules, and Internet learning options are also useful training opportunities.[64] The specific knowledge and skills required are outlined in *The BFI 10 Steps and WHO Code Outcome Indicators for Hospital and Community Health Services*.[37]

At a minimum, all HCPs require orientation in the policies and practice guidelines of the facility, including the BFI (i.e., the Ten Steps and *International Code of Marketing of Breast-milk Substitutes*).

Ongoing Competency Validation

Practice change requires more than education.[65] Numerous professional organizations have breastfeeding guidelines—yet professional practice often does not reflect the guidelines.[59] To be effective, implementation of evidence-based policies in hospitals and community facilities requires a combination of various education strategies and clinical support.

To be effective, implementation of evidence-based policies in hospitals and community facilities requires a combination of various education strategies and clinical support.

3 INFORMING PREGNANT WOMEN AND THEIR FAMILIES ABOUT BREASTFEEDING

STEP 3	
WHO/UNICEF	• Discuss the importance and management of breastfeeding with pregnant women and their families.
CANADA	• Inform pregnant women and their families about the importance and process of breastfeeding.

Informed decision-making is central to family-centred care. Families need to get the information necessary to make decisions about feeding their infant before birth, through their HCP or prenatal classes. Informed decision-making includes having opportunities to discuss goals and concerns with HCPs so that families can expand their knowledge about:

- The process of breastfeeding, including supply and demand;
- The importance of breastfeeding for baby and mother;
- The health outcomes for baby and mother related to a decision not to breastfeed;
- The difficulty of reversing the decision once breastfeeding is stopped;
- Expected newborn behaviour, frequency of feeding (especially at night), and changes in the number of feedings with growth and age;
- The importance of skin-to-skin contact;
- Cue-based feeding, position, and latch;
- Hand expression;
- Sources of support and information;
- Common breastfeeding issues; and
- Sustained breastfeeding—exclusive breastfeeding for the first 6 months, and sustained for up to 2 years or longer with appropriate complementary feedings.

Infants in Specialized Care

Some situations require specialized expertise and care. Mothers at high risk of preterm or medically complicated births require information tailored to their specific needs. If a baby is anticipated to require specialized care, families need additional information about:

- The importance of skin-to-skin care in the NICU;
- Establishing milk production, pumping or hand expressing, if babies cannot breastfeed effectively;
- The vital role of families as part of the infant's care team.

If a mother is unsure or is choosing not to breastfeed her infant in specialized care, sensitively providing information about the value of breastmilk for their sick or preterm infant can be beneficial. For example, breastmilk is effective in preventing necrotizing enterocolitis, leading to fewer severe infections, reducing colonization by pathogenic organisms, improving neural development, and leading to a shorter hospital stay.[66] Given this information, some mothers will choose to express milk for their preterm infant even if they do not plan to breastfeed.

Addressing the Needs and Concerns of Women and Their Families

In Canada, most women choose to breastfeed their infants. The women who are least likely to breastfeed are younger, at lower-income and education levels, and living in Eastern Canada. Also, few women continue to breastfeed for 2 years or longer, falling short of the NHTI recommendations. Effective strategies for improving breastfeeding rates require focusing on the full continuum of the mother–child experience, from before pregnancy and through the early parenting years.[67,68]

Most women decide how to feed their baby early in pregnancy, if not before.[69] However, decisions about breastfeeding initiation and duration are complex and deeply embedded in the cultural context. Lack of positive peer and effective clinical support, lack of confidence in their ability to breastfeed, perceptions of their family's and friends' views about breastfeeding, and exposure to pervasive formula marketing are just a few of the psychosocial factors that affect women's ability to make truly informed, autonomous decisions about initiating breastfeeding and following through with the decision.

HCPs have a strong influence on women's decisions to breastfeed. Studies have shown that women who perceive their physician as supportive of breastfeeding are more likely to breastfeed than those who perceive their physician as neutral or favouring formula feeding.[61,62] When HCPs take a neutral stance on breastfeeding, women are more likely to consider them not to be in favour of breastfeeding. [61,62] On the other hand, the more often breastfeeding is mentioned during the prenatal period, the more likely women will breastfeed.[63] It is important that all HCPs and all health care facility staff know about the importance of breastfeeding and provide positive messages about it.

Current feeding practices are affected by a long tradition of bottle-feeding in North America.[49,70–72] Beliefs that feedings need to be scheduled or timed and that breastfeeding babies have to learn to bottle-feed must be addressed. Cultural beliefs that breastfeeding is only appropriate for young babies—that extended breastfeeding is abnormal—can limit the duration of breastfeeding.

Families may come from a culture with a long tradition of breastfeeding. Recent immigrants, noticing the lack of visible breastfeeding, may assume that the norm in Canada is to bottle-feed. Others may have come from countries where breastfeeding is not the norm. Special care must be taken to avoid making assumptions about new immigrants' feeding beliefs based on their country of origin.[73]

> **Effective strategies for improving breastfeeding rates require focusing on the full continuum of the mother–child experience, from before pregnancy and through the early parenting years.**

> **A variety of types of education strategies over a period of time are most likely to influence a woman's decision about breastfeeding initiation and duration.**

Women need the opportunity to discuss their concerns and have them addressed to facilitate their decision to breastfeed. Self-efficacy strategies benefit all women even while such strategies need to be tailored to meet their personal needs.[68,74–76] The attitudes and beliefs of partners, parents, and extended family affect women's decisions to breastfeed and how long they choose to breastfeed.[77–79]

Strategies for Providing Information

HCPs need to adopt the principle that women will breastfeed—especially as over 90% of Canadian women intend to. For example, asking open-ended questions before asking a woman to make a decision about breastfeeding helps HCPs provide information; this method has been shown to increase the likelihood of breastfeeding initiation.[80]

A variety of types of education strategies over a period of time are most likely to influence a woman's decision about breastfeeding initiation and duration.[32,81–83] Reports stress the value of face-to-face interaction rather than just providing print materials. Similarly, needs-based and repeated informal sessions are more effective than generic, formal prenatal sessions. Because partners and family members affect women's decisions, it is important to find strategies to include the family in breastfeeding education.[77]

Evidence suggests that it is best to avoid routine, forced choice questions about feeding on hospital admission forms. After placing her newborn in skin-to-skin contact with the mother, ask her how she plans to feed her baby.[84] Women who choose not to breastfeed will let staff know. Regardless, babies who will not be breastfed require the same supportive skin-to-skin contact in the early hours following birth.

Dispelling Common Myths

Mothers and families are often influenced in their decisions about breastfeeding by the many common myths on the subject.

COMMON MYTHS ABOUT BREASTFEEDING

Myth	Truth
Women with flat or inverted nipples cannot breastfeed	• Most women can breastfeed. Support the mother by placing the infant in skin-to-skin contact with her at birth. Assess how well the infant feeds. If the infant has difficulty latching, provide skilled assistance and encourage hand expressing and, if necessary, pumping until the infant is able to feed effectively.
Mothers with flat and inverted nipples need to use nipple shields	• A nipple shield may be useful if, despite expert assistance and a baby eager to feed, the baby is unable to latch and feed effectively. As nipple shields can be associated with inadequate milk transfer, families must know how to ensure adequate weight gain in the infant and have a plan for close follow-up. Mothers may require additional emotional support as they become comfortable with the technique as they may feel added stress because of having to use aids to breastfeed.[85] • Nipple shields may be helpful for breastfeeding the preterm infant.[85]
Breastfeeding is complicated and painful	• As with any skill, mothers and infants may need time to learn how to breastfeed. Realistic expectations, commitment, and support from family and HCPs help mothers as they learn. • Most mothers have some nipple soreness in the first week. Strategies to help the infant latch and feed better usually alleviate more severe pain.
The father cannot be involved with the baby if mother breastfeeds	• There is plenty to do with babies besides feeding. Mothers are most likely to be successful when partners provide encouragement and practical and emotional support.[86-88]
Breastfeeding "ties the mother down"	• A breastfed baby is very portable. As mothers get comfortable with breastfeeding, babies can go anywhere. Welcome breastfeeding mothers everywhere—not only is it their right to breastfeed, but mothers and babies will be healthier.
Breastfeeding ruins the mother's figure	• Pregnancy and aging cause the most significant changes to women's breasts. Breastfeeding is the normal transition from pregnancy.
Families cannot tell if their infant is getting enough to eat	• Almost all families worry about how well their infant is feeding. Teach families about infant cues and signs of satiation, so that they can determine how well their infant is feeding. Encourage mothers to watch their babies rather than the clock. If there are concerns, help them find breastfeeding solutions.
Women need to have a perfect diet to breastfeed	• A healthy diet helps mothers meet the demands of mothering. Breastmilk is the best food for the infant even if the mother's diet is not perfect. Breastfeeding helps mothers to lose weight and benefits the health of these mothers later life.

Supporting Families who are not Breastfeeding

WHO uses the acronym AFASS (for Acceptable, Feasible, Affordable, Sustainable, Safe in their situation) to describe the process of assisting families who are not breastfeeding to choose breastmilk substitutes. The *Nutrition for Healthy Term Infants*: *Recommendations from Birth to Six Months* joint statement provides guidance on the use of breastmilk substitutes including safe preparation and storage.[2]

It is important to provide families with information on responsive, cue-based feeding; signs of satiation; and the importance of skin-to-skin contact as well as information on professional and peer support regardless of feeding method.

Provide non-judgmental and supportive care for families who choose not to breastfeed, whether for medical, personal, or social reasons. Families may feel guilt or shame for not breastfeeding and may require individualized support to deal with these emotions as well as information to optimize their infant's nutritional well-being.

Lactation Suppression

If women do not breastfeed, lactogenesis still occurs. Research on lactation suppression has primarily focused on pharmacological measures. It is important that HCPs provide women with information on comfort measures for sore breasts, including analgesics, cold compresses, supportive bras, and limited hand expression.[89] Breast binding and restricting fluids are not recommended.

If lactation suppression is required because the child dies or is placed for adoption, comfort measures and gradually increasing the time between expressing/pumping milk will allow breasts to gradually involute. Mothers who are bereaved or who place their baby for adoption may also want to express their milk and donate it as part of their grieving or separation process.[90] Consider providing the mothers with information about the process of becoming a milk donor.

It is important to provide families with information on responsive, cue-based feeding; signs of satiation; and the importance of skin-to-skin contact as well as information on professional and peer support regardless of feeding method.

4 SKIN-TO-SKIN CONTACT IMMEDIATELY FOLLOWING BIRTH

STEP 4	
WHO/UNICEF	• Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
CANADA	• Place babies in uninterrupted skin-to-skin contact with their mothers immediately following birth for at least an hour or until completion of the first feeding or as long as the mother wishes. Encourage mothers to recognize when their babies are ready to feed, offering help as needed.

Research over the last 40 years has clearly identified the importance of caring for mothers and babies as an inseparable biological unit, especially in the hours immediately following birth, and on promoting uninterrupted skin-to-skin care during those hours. Incorporating this research into practice requires a shift from the northern European and North American routine of separating mothers and babies at birth.[91–93] Skin-to-skin care means placing the naked infant (who may be in diaper) with their chest and abdomen against the mother's naked chest in a position that enables the baby to fully expand the lungs. The infant's arms should be on either side of their body, and not trapped underneath, and the mouth and nose should be uncovered and easily visible.[94] Warm blankets should cover the mother and baby together until temperature stability is achieved or if the newborn's temperature becomes unstable.

Skin-to-skin care benefits the infant by:[25,95–102]

- Enhancing thermoregulation;
- Increasing cardiorespiratory stability;
- Increasing postnatal metabolic adjustment;
- Decreasing infant stress;
- Decreasing crying; and
- Decreasing nosocomial infections.

In North America, the media, especially television, still show images of non-evidence-based hospital practices.[103] For example, babies are often shown being dried off, cleaned up, and weighed before being given to the mother for bonding. Consequently, families are sometimes not aware that optimal care of the newborn includes immediate skin-to-skin care and uninterrupted contact with the mother until the first feeding is completed. Public health and prenatal class messaging can help change the knowledge and expectations of the family.

Current evidence demonstrates that Canadian practices, although changing, still need to be improved. The Canadian Maternity Experiences Survey (MES) found that although 71.9% of mothers reported holding their infant immediately or within 5 minutes of birth, only 31.1% had skin-to-skin contact. Younger women (15–19 years) were even less likely (18.1%) to report skin-to-skin contact with their babies immediately following birth. Only 29.0% of women who had a caesarean birth reported holding their baby immediately following birth (compared with 85.7% of those giving birth vaginally), and only 7.5% reported holding their infant skin-to-skin.[49]

The Importance of the First Hour Following Birth

Generally, infants show signs of readiness to latch on to the breast and feed within the first hour of birth.[104] Families should be supported in keeping their baby in uninterrupted skin-to-skin contact immediately following birth until at least after the first feeding is completed. The partner can also provide skin-to-skin contact if the mother cannot.[105] If the mother and newborn are separated for medical reasons, babies should be reunited as soon as possible.

Newborn infants should be dried and assessed while in skin-to-skin contact with the mother.[94,106] Unobtrusively check to see that families know how to position their infant safely while skin-to-skin, breastfeeding, or otherwise holding the baby, and encourage partner participation. Ensure the safety of the infant if the mother has received opioid medications for pain or is very fatigued.

Babies who went through a stressful birth or infants of mothers given medication during labour may take longer to complete the first feeding.[107] They may be at risk for lower rates of breastfeeding initiation and earlier cessation.[108] Special attention needs to be given to these mothers and infants.

Mothers who have a caesarean birth are more likely to experience breastfeeding difficulties, and their babies are more likely to receive supplements in the hospital.[49,109,110] The delay in skin-to-skin contact and early suckling because of separation after caesarean birth may be responsible for these difficulties.[25] Early skin-to-skin contact as well as breastfeeding when babies cue to feed while in the operating room and the recovery room can decrease the need for early supplemental feeding.[111] Skin-to-skin care with appropriate supervision should be the norm for all births, including caesarean births.

> **Families should be supported in keeping their baby in uninterrupted skin-to-skin contact immediately following birth until at least after the first feeding is completed.**

Effects of Skin-To-Skin Care on Breastfeeding

When placed in uninterrupted skin-to-skin contact with their mother, newborns exhibit a pattern of behaviours—breast seeking, rooting, licking, sucking, and feeding—that may be triggered by maternal odour.[112,113] Skin-to-skin contact also increases the likelihood of a successful first feeding and improves breastfeeding in the early postpartum period as well as rates of exclusive breastfeeding.[114–117] Bramson et al (2010) found a dose–response relationship between early skin-to skin contact and exclusive breastfeeding in the hospital.[118]

See the CPS practice point *Kangaroo Care for the Preterm Infant and Family* and *Neo-BFHI: The Baby-friendly Hospital Initiative for Neonatal Wards* for more information on the benefits of skin-to-skin care of the preterm infant.[56,119]

Maternal Hormonal Response

Delivery of the placenta triggers the maternal hormonal responses necessary for lactation. Skin-to-skin contact and newborn suckling enhance this hormonal response by releasing surges of oxytocin. Oxytocin facilitates uterine contractibility. When the infant stops suckling, he or she may start massage-like movements of their hands on the mother's breast. These hand movements also cause surges of oxytocin release.[120] Early skin-to-skin contact and suckling may increase maternal sensitivity towards and reciprocity with their infants even up to the age of 1 year.[25,121]

Providing Information

HCPs need to remove institutional barriers (customary practices, attitudes, values, and environmental limitations) and inform mothers and families about how essential skin-to skin care is to the stability of their infant, regardless of how families choose to feed their infants. Babies who will not be breastfed require the same supportive skin-to-skin care in the early hours following birth.

Painful Procedures

Breastfeeding comforts infants when they experience painful procedures such as heel pokes, blood tests, and immunizations. Numerous studies support the use of skin-to-skin contact and breastfeeding to help infants endure painful procedures.[97,122–126] Skin-to-skin contact and breastfeeding before a painful procedure helps infants cope with pain. Ideally, this skin-to-skin contact should be maintained for at least 15 minutes before the procedure. Reassure parents that even if their child reacts, cries, or fusses their perception of pain is lessened.

5 ASSISTING MOTHERS WITH BREASTFEEDING CHALLENGES

STEP 5	
WHO/UNICEF	• Support mothers to initiate and maintain breastfeeding and manage common difficulties.
CANADA	• Assist mothers to breastfeed and maintain lactation should they face challenges including separation from their infants.

Step 5 encompasses 2 components: providing breastfeeding support and assistance when mothers and infants are together, and providing this support when they are separated because of newborn instability or illness of mother or child.

Creating the Context for Successful Breastfeeding

Mothers and babies find a wide range of successful approaches to breastfeeding. Many babies placed skin-to-skin with their mothers find the breast and feed well, while others may need assistance. Timely intervention by knowledgeable staff is helpful. Learning about breastfeeding and newborn care and feeding ideally occurs in a family-centred context with many of the other BFI steps:

- Mother–baby togetherness;
- Ongoing skin-to-skin contact;
- Early, frequent, unrestricted feedings;
- Response to early feeding cues; and
- Family involvement and presence to help mothers.

Key Skills for Mothers

In addition to the emotional and physical changes mothers experience after birth, mothers need to learn skills that their HCPs can help them develop:

1. **Supporting their infant's feeding abilities: Understanding and responding to infant cues**

Infants feed best when they are in a quiet, alert state. If babies are in skin-to-skin contact, they may begin to demonstrate feeding cues. If not in skin-to-skin contact, babies should be close to their mother so that she can become aware of early cues rather than waiting for crying, which is a very late feeding cue. Crying infants usually require calming before they will attempt to feed.[54] Similarly, infants wakened from a deep sleep often will not feed.

2. Positioning for mothers and infants

Mothers and babies find a wide range of positions that are comfortable and effective, and mothers should be encouraged to experiment and find their preferred positions. It is important to support mothers in using the principles of body mechanics to be comfortable while feeding. Using pillows for support can be helpful.

3. How babies latch

At birth, many babies latch unassisted on to the breast while the mother is in a recumbent position, as a result of the infant's rooting reflex, which may influence breastfeeding.[127] Some mothers also find this position effective postpartum if their baby is having difficulty attaching to the breast. Other mothers prefer to sit up using a conventional cradle, modified cradle, or football (clutch) position. With practice, mothers often find lying on their side enables them to rest while they feed. Initially, mothers may appreciate help in assisting their baby to latch in this position.

A variety of latching techniques are described in the literature, and mothers should be encouraged to find what works for them.[128] General principles include:

- If the mother is using 1 hand to support her breast from underneath, her fingers should be away from the areola so they do not get in the way of the infant attaching to the breast.
- Dress the infant in a diaper only or light clothing, i.e. not wrapped in a blanket.
- The infant should be as close as possible to the mother, with their ventral surface against the mother ("chest to chest and tummy to tummy") and the head and shoulders supported with the baby's nose level with the mother's nipple.[54]
- The infant's head should be slightly extended with the chin touching the breast.[129]
- Encourage the mother to wait until the infant opens their mouth as wide as a yawn.
- Avoid putting pressure on the infant's head or forcing the infant on to the breast.
- The mother should aim the nipple slightly toward the roof (soft palate) of the baby's mouth.[128]
- The infant's nose may be close to the breast as this does not usually impede breathing. Some mothers with large soft breasts may find it helpful to tuck the infants bottom closer to her body, which will bring the infant's head back and ensure the airway is free.

4. Effective feeding

HCPs can support mothers to learn to recognize how well their infants are feeding. When babies are well-positioned on the breast, their cheeks appear full and their mouth is wide open. The infant will suck with brief pauses between bursts of sucking and does not easily slide off the breast. At the end of the feeding, the nipple is not distorted when released. While most mothers experience some nipple soreness in the first week, breastfeeding should not be painful.[130] When feeding well, infants exhibit signs of milk transfer: sounds of swallowing, satiety following feedings, appropriate output (stool and urine), and appropriate weight loss in the first 72 hours with subsequent weight gain.

5. Hand expression

There is limited evidence that any 1 type (hand, manual or electric pump) to express breast milk is better than another, yet women should be taught to hand express as it is always readily available and there is reduced potential for microbial contamination if a pump cannot be easily cleaned.[36] It is important that all mothers learn to hand express their colostrum or milk.[34,131,132] Hand expression helps to:

- Entice a sleepy baby to feed;
- Collect colostrum for infants who require extra milk (late preterm infants or infants unable to feed effectively);
- Stimulate the breasts;
- Express colostrum onto tender or sore nipples;
- Relieve fullness of breasts or engorgement; and
- Collect milk for later use.

Encouraging mothers to hand express early and often enables them to practice this skill and become more comfortable with their breasts.

Teaching mothers that they can express milk by hand may diminish the growing perception that all breastfeeding women need breastmilk pumps. One study found that mothers with initial breastfeeding difficulties who hand expressed were more likely to be breastfeeding at 3 months than those who used pumps.[133]

TIPS FOR TEACHING HAND EXPRESSION[134]

Teach women to:

- Expect that it will take practice and they may not express much milk the first few times.
- Wash their hands and get comfortable.
- Have a clean cup, bowl or jar ready to catch the milk.
- Gently massage their breast. The let-down reflex may be stimulated by gently touching/massaging the nipple.
- Put their fingers on the bottom and thumb on the top at the outer edge of the areola, in the shape of the letter C.
- Push their thumb and fingers back towards their chest and squeeze their fingers and thumb together.
- Press and release, repeat the movement on their breast.
- Adjust their technique to find what works for them.
- Catch the milk in a clean cup, bowl or jar.
- Move their fingers around the areola in a circle to express from different parts of their breast.
- Switch between breasts every few minutes.

There has been little research on the best techniques for hand expression, and mothers are encouraged to experiment with techniques to learn what works for them.[135] See the Perinatal Services BC *Breastfeeding Healthy Term Infant* guideline for guidance on hand expression.[54]

Key Skills for Health Care Providers

Fundamental skills for HCPs include breastfeeding assessment and knowing the key skills for mothers described above and how to teach those skills. Effective teaching/counselling helps mothers become increasingly confident in their ability to understand their infant's cues, feed their baby, and recognize the signs that their infant is feeding well.

1. Feeding assessment

Feeding assessments require knowing the normal changes that mothers and infants go through and the feeding relationship—and how each of these parameters changes with time. Perinatal Services BC *Breastfeeding Healthy Term Infants* guideline has recommendations on breastfeeding assessment and discharge criteria.[54]

As the length of hospital stay for mothers and infants varies from just a few hours to 72 hours or more, appropriate follow-up after discharge, including breastfeeding assessment by a skilled HCP, is essential. The Society of Obstetricians and Gynaecologists of Canada (SOGC) recommends that all mothers and infants be assessed by an HCP within 48 hours of discharge from a hospital or birthing centre.[136] The CPS gives recommendations on newborn surveillance related to breastfeeding and jaundice in their *Guidelines for Detection, Management and Prevention of Hyperbilirubinemia in Term and Late Preterm Newborn Infants*.[137]

Several tools exist for breastfeeding assessment; however, clinically relevant, reliable and valid tools have yet to be developed.[138] If breastfeeding assessment tools are used, additional assessment parameters must also be applied by HCPs to ensure effective feeding and milk transfer: elimination pattern, infant weight, and growth.[138] Test weighing may be helpful in some clinical settings but should not be part of a routine assessment. A complete feeding assessment should include all 3 components of the breastfeeding relationship: mother, baby, and feeding.

Mother: Breast changes that begin during pregnancy continue as milk production (lactogenesis II) increases. Breast fullness usually occurs within 72 hours of giving birth, but may be delayed in primiparous women or women with caesarean births. Lactogenesis that occurs later than 96 hours after birth is considered delayed.[139] Assessment of the mother includes reviewing history relevant to breastfeeding, for example, hormonal issues; breast changes during pregnancy and appearance of breasts and nipples (including breast filling, nipple variations or anomalies that make latch difficult, nipple damage); previous breastfeeding experience(s); breast surgery; postpartum hemorrhage; and separation of mother and baby.

Health conditions that may impact breastfeeding are outlined in **Appendix B**.

INCREASING MILK PRODUCTION

Medications to increase milk production

- The usefulness of medications to increase breastmilk production (galactagogues) is unclear. The Academy of Breastfeeding Medicine recommends that medicinal galactagogues be considered only after other modifiable barriers have been addressed and mothers have been provided with ample support and strategies to enhance milk production.[140]

Traditional foods as galactagogues

- Most cultures use a variety of foods or herbal products for breastfeeding mothers—many to help increase milk. Families that use traditional foods to increase milk productions need to be respected in their decision, as they may help to relax the mother and give her confidence.
- However, in spite of a long history of the use of herbs, there is a lack of evidence of the safety and effectiveness of herbal galactagogues.[128] Herbal preparations lack standardization, regulation, and evidence as to their efficacy and should be used with caution.

INFANT URINE AND STOOL OUTPUT ON DAYS 1–28 POST BIRTH[54]		
Infant age in days	**Voids**	**Stools**
1	1 or more wet, clear, pale, yellow	1 or more meconium
2–3	2–3 wet, clear, pale, yellow	1 or more meconium or greenish brown transition stools
3–5	3–5 wet, clear, pale, yellow	3–4 transition stools changing to loose, yellow
5–7	4–6 wet, clear, pale, yellow	3–6 yellow or golden, generally loose
7–28	Frequent and clear pale yellow	5–10+ yellow

Research on elimination patterns in the first few days is inconsistent.[138] Stooling rather than voiding may indicate sufficient milk intake more reliably.[141]

In the first few days, the amount of urine may be small and it may be concentrated, with uric acid crystals that appear as brick-red staining in the diaper. By day 3, when the milk supply increases, more urine is produced (diapers are heavier) and it becomes paler, with no uric acid crystals. Three or fewer stools on day 4 post birth in combination with delayed lactogenesis requires further assessment and monitoring.[142]

Baby: History relevant to breastfeeding (birth trauma, separation from mother); overall health; gestational age; physical appearance (tone, colour); hydration and elimination patterns; oral anatomy; behaviour (alertness for feeding, cueing to feed at least 8 times in 24 hours); and pattern of weight loss and gain.

Feeding: Frequency (newborns typically feed at least 8 times in 24 hours after the first 24 hours); effectiveness (active sucking: rapid sucking that slows and becomes deeper, infant is firmly attached and cannot easily be removed from the breast, mother's nipple everts but is not distorted or damaged when the infant releases the nipple); signs of milk transfer (sounds of swallowing, satiety following feedings, appropriate output, and weight loss and gain); and mother is comfortable and experiences only transient if any nipple pain.

2. Infant weight loss and expected gain

In the first two weeks, newborns experience normal weight decline and recover, provided they are feeding well.[2] Milk intake in the first 24 hours varies by newborn from 15cc +/- 11 cc.[143] A newborn's stomach capacity gradually increases over the first 3 days of life.[144] The exact parameters of weight loss and gain remain unclear, but a typical weight loss of an exclusively breastfed infant can be 6–8% of their birth weight by 3 days after birth.[137] Loss of greater than 7–10% in the first 4 postpartum days indicates a need for close assessment and possible intervention.[54] From day 4 onward, weight gain of approximately 20–35g per day during the first 2 months of life should continue.[13,145] CPS recommends that an infant who loses more than 10% of their birth weight be carefully assessed by an HCP experienced in supporting breastfeeding mothers.[137]

The CPS, College of Family Physicians, Community Health Nurses of Canada and Dietitians of Canada recommend using the WHO growth charts to monitor infant and child growth.[146]

3. Interventions to support breastfeeding and overcoming challenges

Time, support, and patience resolve most breastfeeding concerns. Common problems in the early postpartum days include an infant who is unable to latch or feed effectively, sore nipples, engorgement, and insufficient milk or, more likely, mistaken perceptions of insufficient milk.

When families are struggling with feeding issues, plans for overcoming challenges should be simple, easily understood, and manageable by the family. There are 3 guiding principles:

- the breasts need stimulation and milk removal (milk production);
- the infant needs food (milk transfer);
- time and support enables most infants to feed well at the breast.

These principles apply regardless of the age of the infant. Specific interventions may be required (such as antibiotics for mastitis, frenotomy for tongue-tie, or a brief interruption of breastfeeding for severely damaged nipples), but the basic tenets underlying interventions should include these 3 principles.

Appendix C lists common concerns with breastfeeding.

When Baby is Preterm, Late Preterm, or Ill

PRETERM INFANTS

International work on Neo-BFHI recommends that all NICU babies room-in with their mothers; experience unrestricted skin-to-skin care and other care provided by the parent; and become fully breastfed. Breastfeeding initiation and progression should be based on the infant's stability rather than the length of gestation or weight.[43,56,147]

For preterm infants, the best outcome—sufficient milk for infants and eventual breastfeeding—is supported by skin-to-skin care, early hand expression, and breast expression. HCPs should be supporting and assisting mothers throughout. Starting expression as soon as possible, ideally within the first hour of birth, is associated with increased milk supply.[132,148–150] Promotion of early colostrum can increase the success and duration of feeding with breastmilk among infants in the NICU.[151] Mothers need to establish an ample volume of milk even before their preterm infant requires full feeding volumes. As a general guideline, mothers who are able to establish milk production sufficient for a full-term baby by 2 weeks are more likely to have enough milk when their preterm baby needs it. Mothers who can pump at least 500ml per 24 hours at 2 weeks postpartum are more likely to have sufficient milk for their infants.[152] Mothers may be producing enough milk for their premature infant and not recognize that their total 24-hour volume is below 500ml.

It is important to provide ongoing support for mothers as they continue to express milk for their preterm infants. See the CPS practice point *Kangaroo Care for the Preterm Infant and Family* for more information on the benefits of skin-to-skin care between the preterm infant and parent.[119]

> **HCPs need to continually assess the mother–infant dyad to ensure that mothers have the support and assistance needed to effectively breastfeed or provide sufficient milk for their infants.**

THE LATE PRETERM OR NEAR-TERM INFANT

The late preterm infant (34^{+0} through 37^{+6} weeks) is increasingly considered mature enough to room-in with the mother and is cared for in standard postpartum units. However, late preterm infants can exhibit characteristics of both term and preterm infants.[131,153] They are at higher risk for readmission for jaundice, excessive weight loss, and poor feeding. Careful monitoring, skin-to-skin contact, early hand expression and spoon feeding of colostrum are essential elements of care.[131,133,148] The Perinatal Services BC guideline *Breastfeeding Healthy Term Infants* and the CPS position statement *Safe discharge of the late preterm infant* offer guidance on breastfeeding the late preterm infant.[54,154]

INFANTS IN PEDIATRIC FACILITIES

Establishing and maintaining breastfeeding when infants and children are ill can be challenging. Illness often affects feeding behaviours. It is important to support breastfeeding whenever the infant or child is able to, and effective milk removal if the child is unable to breastfeed. HCPs need to continually assess the mother–infant dyad to ensure that mothers have the support and assistance needed to effectively breastfeed or provide sufficient milk for their infants.

Breastfeeding When the Mother is Hospitalized

Being hospitalized postpartum—for a short or long time—for reasons other than the birth can be potentially difficult for the mother, infant, and family. If the mother's goal is to breastfeed, hospitals need to support her in her efforts and help her maintain her milk supply through hand expressing/ pumping if feeding at the breast is interrupted. Hospital policies need to support breastfeeding by minimizing separation as much as possible; by encouraging skin-to-skin contact; by supporting and assisting with expressing/ pumping; and by helping families in their time of crisis.[155] Expert lactation support may be required to assist in the selection of breastfeeding-compatible medications, if at all possible, as well as to advise on appropriate collection and storage of breastmilk being fed to the baby.

6 SUPPLEMENTING ONLY WHEN MEDICALLY INDICATED

STEP 6	
WHO/UNICEF	• Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.
CANADA	• Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.

The *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* advocate exclusive breastfeeding for the first 6 months, and sustained for up to 2 years or longer with appropriate complementary feeding.[2,3] Exclusive breastfeeding means an infant is only fed breastmilk. No other food or liquid (not even water) is given to the infant, although exclusively breastfed infants may still receive vitamin and mineral supplements, medicines and oral rehydration solution if needed.[156] It is essential to support families in exclusive breastfeeding for the first 6 months of the infant's life unless there is a medical need to give additional or alternative foods.

Supplemental Feeding

Supplemental feeding of newborns occurs frequently in Canadian hospitals. In 2009/10, 32% of breastfed babies were given fluids other than breastmilk (water, glucose solution, or infant formula) before being discharged from hospital.[39] Similarly, only about two-thirds of newborns in Ontario and British Columbia had been exclusively breastfeeding at discharge.[157,158]

Supplemental feedings can interfere with establishing and maintaining the maternal milk supply and contribute to engorgement.[22,138] Because supplemental feedings may interfere with successful breastfeeding, it is important that HCPs support families in making informed decisions before providing or recommending supplements.

Occasionally, the infant's medical condition may mean they require supplementation. Infants may also require supplemental feeding when, in spite of effective breastfeeding support, the mother's milk supply is insufficient to sustain infant growth. Once supplements are started, even for short-term medical indications such as hypoglycemia, the practice tends to continue, and babies often continue to receive supplements after the medical indication has resolved.[159] If supplemental feedings are indicated, give small, physiologically appropriate amounts of breastmilk substitutes and advise families about how to withdraw the supplement once it is no longer needed.[160] It is important to assist families who provide supplemental feedings with strategies to preserve and improve the breastfeeding relationship.

Choice of Supplements

In situations when infants are not exclusively breastfed for personal, social, or medical reasons, the family requires information on breastmilk substitutes and support in choosing, safely storing, and handling these.[3] The *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* states "infants who cannot or should not be fed their mother's breastmilk, pasteurized human milk from appropriately screened donors and commercial infant formula are suitable alternatives."[2] Access to pasteurized breastmilk from milk banks in Canada is limited and is primarily for sick and preterm infants. Milk banks currently exist in 4 provinces: British Columbia (BC Women's Provincial Milk Bank), Alberta (NorthernStar Mothers Milk Bank), Ontario (Rogers Hixon Ontario Human Milk Bank), and Quebec (Public Mothers' Milk Bank). See the CPS Position statement *Human Milk Banking* and the *Human Milk Banking Association of North America (HMBANA)*.[66]

Increasingly, families are looking for donor milk from other mothers, a process referred to as "milk sharing."[161] Although women have shared milk (wet nursed) throughout history, milk sharing usually occurred between relatives and close friends.[162] The use of the Internet as a vehicle for milk sharing between strangers is a relatively new practice. Concerns about sharing milk between strangers are because:[163,164]

- Infections can be transmitted through milk;
- Home heat treatment methods do not guarantee safe milk;
- Non-human milk has been sold as breastmilk;
- Quality and safety of milk collection and storage;
- Mothers are not screened to the same level as done in milk banks that follow HMBANA guidelines.

The *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* does not endorse the sharing or use of unprocessed and unscreened human milk.[2]

Contraindications to Breastfeeding

Some rare conditions require replacement of human milk with an appropriate artificial substitute, for example:[15,34,165,166]

In infants

- Metabolic disorders such as classic galactosemia;

In mothers

- Human immunodeficiency virus (HIV) infection or human T-cell lymphotrophic virus type I or II (HTLV) infection;
- Active untreated tuberculosis;
- Maternal medications or medical procedures that are incompatible with breastfeeding (e.g., radioisotopes, chemotherapy, etc.).

Temporary Interruptions

Most cases of maternal illnesses are compatible with breastfeeding. See the CPS practice point *Maternal Infectious Diseases, Antimicrobial Therapy or Immunizations: Very Few Contraindications to Breastfeeding* for recommendations to do with breastfeeding and maternal infectious diseases.[167] *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* also offers guidance on maternal infection, medication use, and natural health products while breastfeeding.[2] If a mother's severe illness or injury prevents her from caring for her infant, families who wish to express breastmilk may require assistance from HCPs.

> **It is important to reassure families and explain about normal feeding patterns and the effect of this typical newborn behaviour on establishing maternal milk production.**

Substance Use

It is important that families know about the effects on breastfeeding before using alcohol, tobacco, or drugs.

- Alcohol—Breastfeeding mothers should be advised to limit their alcohol intake because of their infant's rapidly developing central nervous system and underdeveloped ability to metabolize alcohol. Frequent or heavy drinking can also impair the mother's judgment and functioning.
- Smoking—Even women who smoke should be encouraged to breastfeed. Support breastfeeding mothers to stop or reduce smoking.[2] Smoking may decrease milk production and affect infant sleep patterns.[168,169] Breastmilk itself loses many of its health benefits because of changes in its composition.[170] Second-hand smoke also increases the risk of SIDS. Encourage not smoking in the home and hand washing before touching the infant.
- Drug Use—Women who use illicit drugs should be helped to abstain during breastfeeding. Advise women of the importance of breastfeeding and the risks drug use poses. Inform women of passage of drugs into breastmilk and the long-term potential cognitive effects on their infant.

See the *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* for guidance on alcohol, smoking, and drug use.[2]

Barriers to Exclusive Breastfeeding

Among the most common reasons breastfeeding infants receive supplements is the concern that the infant is not getting enough milk and mothers' lack of breastfeeding self-efficacy.[171–173] In the first few days following birth, families may perceive frequent cueing to feed, especially during the night, as an indication of insufficient breastmilk rather than the typical behaviour of the newborn who depends on frequent feeding for calories and comfort.[159] It is important to reassure families and explain about normal feeding patterns and the effect of this typical newborn behaviour on establishing maternal milk production.

It is common for infants to feed frequently, or *cluster feed*, during the evening, when many mothers feel their breasts are softer and that they have less milk. In addition, infants increase their frequency of feeding every few weeks as they go through growth spurts. The increased feeding frequency usually lasts 24 to 48 hours, during which time milk production increases. After the growth spurt, the infant may feed less frequently. Parents may interpret increased cueing to feed as a shortage of breastmilk. Informing families ahead of time can help families recognize this increased feeding frequency as normal infant behaviour.

Some hospitals contribute to the short duration of exclusive breastfeeding by not adhering to the Ten Steps: they do not promote skin-to-skin contact or rooming-in; and they supplement without medical indications, do not follow a cue-based feeding strategy, use pacifiers, and provide mothers with free samples of infant formula.[174]

Creating a Breastfeeding Culture

Families need to feel comfortable breastfeeding their children *anytime, anywhere*. However, many families do not, or feel they need to cover up—a practice often rejected by the older baby. Feeling pressured to breastfeed discretely or in private contributes to early weaning.[178] If mothers request privacy, it is important that HCPs and agencies provide a comfortable environment.

STRATEGIES TO SUPPORT EXCLUSIVE BREASTFEEDING[2,175-177]

DURING PREGNANCY

- Explore parental attitudes, values, and beliefs about breastfeeding;
- Provide clear information about the recommendations for exclusive breastfeeding for the first 6 months, and sustained for up to 2 years or longer with appropriate complementary feeding; and
- Discuss concerns and correct misinformation to support fully informed decisions about infant feeding.

BIRTH

- Make sure families understand the reasons for skin-to-skin contact;
- Provide an unhurried atmosphere, leaving babies undisturbed on their mother's chest until they finish their first feeding or for at least the first hour following birth.

EARLY POSTPARTUM DAYS

- Inform parents about normal newborn behaviour;
- Reassure mothers and their families by providing accurate information specific to their situation;
- Help mothers breastfeed effectively;
- Show mothers how to hand express their milk;
- Encourage a family member to stay overnight to help with infant care and provide support, including skin-to-skin contact;
- Suggest soothing techniques other than pacifier use; and
- Encourage mothers to participate in mother-to-mother (peer) support groups.

EARLY POSTPARTUM WEEKS

- Support mothers and their families as they face breastfeeding challenges;
- Provide anticipatory guidance about normal behaviours such as frequent cueing to feed during growth spurts and night waking;
- Encourage families to focus on what behaviours indicate hunger, effective feeding, and satiation rather than on the number and timing of feedings; and
- Discuss strategies that involve the partner and family in caring for the infant in ways other than feeding.

IF SUPPLEMENTS ARE USED

- When supplements are required for a medical reason, support families to give physiologically normal amounts and help them discontinue supplementing when the medical indication has resolved;
- Document the use of supplements—the type and volume and how it is given—and include the family in discussions about the supplements to help them make informed decisions;
- Make sure the parents understand how to feed their infant and that they receive written information.

7 MOTHER AND INFANT ROOMING-IN

STEP 7	
WHO/UNICEF	• Enable mothers and their infants to remain together and to practise rooming-in 24 hours a day.
CANADA	• Facilitate 24-hour rooming-in for all mother–infant dyads: mothers and infants remain together.

Continuous contact between mothers and their infants enhances the stability of the newborn, breastfeeding, and their emotional bonding and attachment. In Canada, 24% of women reported that their infants spent between 1 and 5 hours outside of their rooms in the first 24 hours following birth. Another 11.2% said their infants were not in their rooms for 6 hours or longer.[49] Mothers who have had a caesarean birth are less likely to room-in with their infants (46.5%) than those who had a vaginal birth (70.9%).[49] Facilities need to develop policies and an environment that supports rooming-in, such as having a cot for a family member so they can stay overnight and help care for the mother and infant.[79]

As typical hospital stays range from several hours to a few days, maximize opportunities to educate families by caring for mother and babies together and including the family. Keeping mothers and infants together for all routines (vital signs, blood tests, and assessments) optimizes the opportunity to provide information about care and feeding of the infant.

Safe Sleep

Night feedings make an important contribution to total milk intake and infants continue to feed through the night for many months.[175,179] In addition, breastfeeding is associated with lowering the risk of SIDS, and exclusive breastfeeding raises the protective effect. However, any amount of breastfeeding provides some protection compared with no breastfeeding.[180]

The need to breastfeed during the night may be perceived as a conflict with recommendations against bed-sharing as a measure to reduce the incidence of SIDS.[175] It is important to reassure mothers that they can successfully breastfeed during the night without bed-sharing. HCPs need to support families in finding strategies that enable them to meet their infants' nighttime needs and get enough rest. Close proximity to the infant facilitates breastfeeding during the night, and sleeping in the same room as the parents is recommended for the first 6 months.[181]

While PHAC's *Joint Statement on Safe Sleep: Preventing Sudden Infant Deaths in Canada* does not discuss swaddling, the Registered Nurses' Association of Ontario guidelines *Working with Families to Promote Safe Sleep for Infants 0–12 Months of Age* highlights concerns with swaddling.[181,182]

8 CUE-BASED FEEDING

STEP 8	
WHO/UNICEF	• Support mothers to recognize and respond to their infants' cues for feeding.
CANADA	• Encourage responsive, cue-based feeding. • Encourage sustained breastfeeding beyond six months with appropriate introduction of complementary foods.

Cue-based, Responsive Feeding

In Canada, half (49.8%) of all mothers reported feeding their infants *on cue* in the first week following birth.[49] Frequent, unrestricted breastfeeding is associated with successful breastfeeding.[183] Feeding on cue supports the demand-and-supply basis of establishing breastmilk production and flow. Timed, restricted, or delayed feedings should be avoided.[179] With cue-based or infant-led feeding, the mother learns to recognize and respond to her infant's signals about their appetite, hunger, and fullness.[2]

HCPs need to support new parents in identifying and responding to infant feeding cues—restlessness, rooting, or sucking on a hand—and in identifying signs that their infant is receiving sufficient breastmilk.[2] Feeding cues can be subtle, and babies who are tightly wrapped or swaddled are less likely to show these cues.[121] Responsive feeding recognizes that successful breastfeeding is a sensitive, reciprocal relationship between a mother and her child. Breastfeeds can be long or short, and breastfed babies cannot be overfed or *spoiled* by too much feeding.[37]

Infants who are fed when they are hungry, and who suckle effectively, will obtain what they need for satisfactory growth. Infant-led breastfeeding encourages self-regulation.[184]

> **Responsive feeding recognizes that successful breastfeeding is a sensitive, reciprocal relationship between a mother and her child.**

To encourage mothers to breastfeed on cue, it is important to avoid setting limits on the number of feedings infants should have in a 24-hour period. In the early postpartum period when families are looking for guidance, language such as "offer the breast at least 8 times in 24 hours" is more appropriate than limits such as "feed every 3 hours" or "8–12 times a day," as infants exhibit a wide range of frequency of feedings.[179]

Addition of Solid Foods

Exclusive breastfeeding provides the nutrients most healthy infants need until they are 6 months old. The infant may be ready for complementary foods a few weeks before the 6-month mark or just after. The *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* recommends that HCPs and families consider the infant's signs of readiness before introducing complementary foods.[2] The signs of physiological and developmental readiness for complementary foods include:[2,185]

- Better head control;
- Ability to sit up and lean forward;
- Ability to let the caregiver know when they are full (e.g., turns head away); and
- Ability to pick up food and try to put it in their mouth.

The first complementary foods to introduce include iron-rich foods, such as meat, meat alternatives (e.g., eggs, tofu, and legumes), and iron-fortified infant cereals.[3] For further guidance on the introduction of complementary foods, see *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months and Nutrition for Healthy Term Infants: Recommendations from Six to 24 Months*.[3]

The principles of cue-based feeding apply when other foods are added to the diet, and are not confined to one stage of infant or child development. Responsive feeding means that a parent or caregiver responds in a prompt, emotionally supportive, and developmentally appropriate manner to the child's hunger and satiety cues.[186]

Supporting Sustained Breastfeeding of the Older Infant and Young Child

Breastfeeding is also an important source of nutrition for the older infant and young child. Breastfeeding can provide 50% or more of the energy needs of the infant aged 6 months to 1 year, with other foods supplying the remainder.[187,188] One-third of the 12- to 24-month-old toddler's energy needs can come from breastmilk.[188,189] In addition, the act of breastfeeding is comforting to the child.

Many mothers continue to breastfeed because they believe it enhances their relationship with their child.[190] Breastfeeding beyond infancy and well into toddlerhood is common in many cultures.

In 2011/12, the rate of breastfeeding beyond the baby's first year of life was 19%.[3] Although the reasons for earlier weaning are multifactorial, lack of knowledge about the value of prolonged breastfeeding and the lack of support for mothers breastfeeding older infants and toddlers are contributing factors. Mothers who continue to breastfeed into toddlerhood may face negative attitudes and criticism, and be reluctant to say they are still breastfeeding, a practice called *closet nursing*.[2,128,191,192]

Increased public awareness of the importance of breastfeeding beyond infancy, including by visually representing breastfeeding toddlers, facilitates sustained breastfeeding. Sustained or long-term breastfeeding must be destigmatized and normalized, with education targeted at the public and HCPs rather than focusing on the mothers themselves.[191]

If a breastfeeding mother becomes pregnant, encourage her to continue and reassure her that breastfeeding is not contraindicated during pregnancy unless the mother is not gaining enough weight, there is unexplained vaginal bleeding, or there is a risk of premature labour. The *Nutrition for Healthy Term Infants: Recommendations from Six to 24 Months* has strategies for encouraging sustained breastfeeding.[3]

Weaning

Weaning practices are largely culturally determined. In many countries, breastfeeding continues for 2 years or longer.[128,193] One anthropological analysis of when humans would wean based on physiology alone rather than culture suggested that the physiological age of weaning is between 2.5 and 7 years.[193]

For some families, weaning is the natural progression from exclusive breastfeeding, to the addition of other foods and liquids to the infant's diet while they continue to breastfeed, until the child no longer breastfeeds. For other families, weaning is the intentional replacement of breastfeeding with other fluids (often human milk substitutes) and solid foods. This weaning strategy can be done very quickly (e.g., the mother requires long-term use of medication or treatment where breastfeeding is contraindicated) or over a longer period of time. Ideally, the process is done as slowly as possible to allow the mother's body and for the infant to adjust. Mothers may be surprised by the feelings of sadness and loss they experience at the end of the breastfeeding relationship and the hormonal shift that occurs.[194] Weaning may also be unintentional such as because the infant refuses to breastfeed. Refusing to breastfeed can occur for many reasons and is usually temporary and can be resolved.[195] Informing families ahead of time that infants can have *nursing strikes* and how to resolve these, can support families in continuing sustained breastfeeding.

It is important that HCPs provide families with information to make informed decisions about weaning. See the CPS position statement *Weaning from the Breast*.[195]

Working and Breastfeeding

Women have always skilfully combined parenting, breastfeeding, and working. Breastfeeding and working only became problematic when the places of employment separated mothers and young children. Families with children benefit from community support wherever mothers work, be it at home or away.

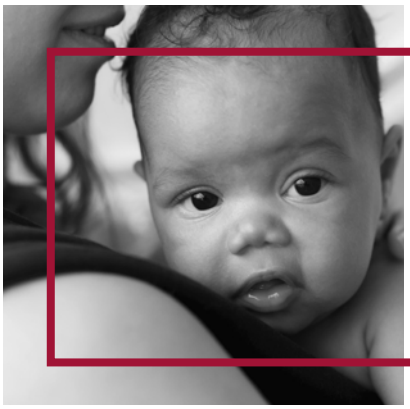
Canadian women have the right to breastfeed their children. "For children breastfeeding provides the highest attainable standard of health; a basic human right. For women, the right to breastfeed in public and the right to be accommodated by the employer or educational institution to continue to breastfeed on returning to work or school is a human right."[196] Accommodations in the work environment must consider the needs of breastfeeding mothers.[197] Unsupportive workplaces could be in violation of the *Canadian Charter of Rights and Freedoms* and of provincial human rights legislation/policies.

Evidence shows that women can successfully work or go to school and breastfeed, although support from the work or school environment is essential.[198–200] HCPs also need to provide guidance and support breastfeeding mothers returning to work or school to facilitate this transition.

BREASTFEEDING AND HUMAN RIGHTS[197,201-204]

Canadian women have the right to breastfeed their children wherever women have the right to be, including in the work environment. International and national statements affirm this right:

- **United Nations Convention on the Rights of the Child:** Article 24, relating to health and health services, "Children have the right to good quality health care—the best health care possible—to safe drinking water, nutritious food, a clean and safe environment, and information to help them stay healthy."
- **Global Strategy for Infant and Young Child Feeding (GSIYCF):** Governments should enact imaginative legislation protecting the breastfeeding rights of working women and establishing means for its enforcement in accordance with international labour standards. The Operational Targets for GSIYCF were reaffirmed by the Innocenti Declaration 2005.
- **Canadian Charter of Rights and Freedoms:** The Charter includes the equality rights of women. Furthermore, the ***Canadian Human Rights Act*** prohibits discrimination related to pregnancy. Pregnancy-related discrimination is considered a form of sex discrimination, because only women can become pregnant (by extension, only women can breastfeed).
- The **Canadian Human Rights Commission Policy on Pregnancy and Human Rights in the Workplace** states that: "Women in the workplace are valued employees entitled to equality, dignity, respect and accommodation of their needs when they are attempting to become pregnant, while they are pregnant and as they return to work following a pregnancy-related absence."
- The **Policy on Pregnancy & Human Rights in the Workplace** identifies best practices such as flexible start times to deal with breastfeeding schedules; allowing women to breastfeed their babies during a work visit; longer or extra breaks; and a private place to breastfeed or express milk. Upon return to work, in order to support breastfeeding, women "who breastfeed or express/pump breastmilk should be provided with accommodation for this purpose, including providing a suitable clean place to breastfeed or express milk and to store milk; providing longer or extra breaks for the purpose of breastfeeding or expressing milk; allowing for the extension of maternity leave and allowing for alternative work arrangements."



9 ARTIFICIAL TEATS AND SOOTHERS

STEP 10	
WHO/UNICEF	• Counsel mothers on the use and risks of feeding bottles, teats and pacifiers.
CANADA	• Support mothers to feed and care for their breastfeeding babies without the use of artificial teats or pacifiers (dummies or soothers).

Artificial Teats

The onset of lactogenesis II, or copious milk production, depends on frequent, effective milk removal from the breasts.[192] Feeding in ways apart from breastfeeding (with donor milk or infant formula) may interfere with the supply-and-demand process of establishing milk production. Supplemental feedings, unless medically indicated, are not recommended for breastfed infants. For small amounts of supplement given for documented medical indications during the early postpartum period, spoons or small cups may be used.[54,205,206] Using these alternatives to bottles when providing supplements in the hospital is associated with increased breastfeeding duration.[160,207,208] Though research into other feeding devices is scarce, supplemental feedings can be given via a syringe, dropper, or a feeding tube at the breast.[206] Cup feeding has also been used for preterm infants during the transition from gavage (tube) feeding to full breastfeeding.[147]

Studies on the effects of artificial teats on breastfeeding duration are inconclusive. The possibility of an infant imprinting on a particular type of nipple, preferring a fast flow of milk requires further research as does the possibility of nipple confusion.[192,209] Although occasional bottle use after breastfeeding has been established may not be problematic, routine use, especially when milk is not frequently removed from the breasts, may jeopardize milk production. Some families may be concerned that they need to *teach* their breastfeeding infant to take a bottle just in case a situation rises where the mother cannot breastfeed. Reassure the family that this is not necessary.

The *Nutrition for Healthy Term Infants: Recommendations from Six to 24 Months* encourages the use of an open cup when introducing liquids other than breastmilk at 6 months, and when transitioning from a bottle. HCPs are referred to the joint statement for further advice.[3]

Pacifiers

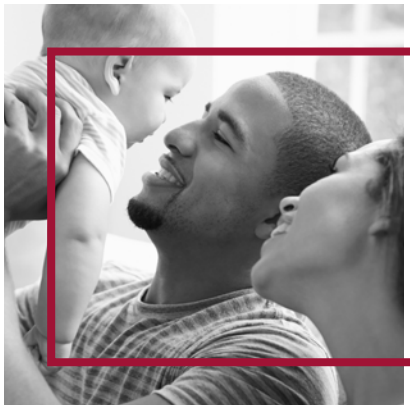
The use of pacifiers, also called soothers or dummies, varies depending on the culture, and remains controversial in Canada. Many authorities suggest using these with caution, especially in the early postpartum period before breastfeeding is established.[15,78,128,205] Routine use of pacifiers can delay breastfeeding or decrease the frequency, and interfere with breastmilk production. Some studies also link pacifier use with decreased breastfeeding duration or with breastfeeding difficulty in the first 3 months.[20,208] Other concerns include:

- Dental and orthodontic problems;
- Infections; and
- Accidents and injuries.

The *Joint Statement on Safe Sleep: Preventing Sudden Infant Deaths in Canada* identifies a protective effect of pacifiers against SIDS.[181] The joint statement recommends delaying the introduction of a pacifier until breastfeeding is well established. The statement also recommends that infants who use a pacifier have one consistently, for every sleep.

Pacifiers may also be helpful for preterm infants during gavage feedings or painful procedures if breastfeeding is not possible.[210,211] However, minimizing the use of a pacifier is positively associated with earlier attainment of exclusive breastfeeding by preterm infants and with exclusive breastfeeding at discharge.[149,150]

See the CPS guideline *Recommendations for the Use of Pacifiers* guideline for further recommendations on pacifiers.[212]



10 BREASTFEEDING SUPPORT IN THE COMMUNITY

STEP 10	
WHO/UNICEF	• Coordinate discharge so that parents and their infants have timely access to ongoing support and care.
CANADA	• Provide a seamless transition between the services provided by the hospital, community health services, and peer-support programs. • Apply principles of primary health care and population health to support the continuum of care and implement strategies that affect the broad determinants that will improve breastfeeding outcomes.

> **Collaboration between public health agencies and between HCPs (e.g., midwives, general practitioners, and pediatricians) ensures that families receive support from the most appropriate service in a timely manner.**

Partnerships between hospitals and community services to seamlessly transition care during pregnancy, labour, birth, and the postpartum period is essential given the short length of hospital stays and the importance of establishing breastfeeding and lactation in the first 1 to 2 weeks following birth. Collaboration between public health agencies and between HCPs (e.g., midwives, general practitioners, and pediatricians) ensures that families receive support from the most appropriate service in a timely manner, which is vital for the well-being of the baby and mother.

The BFI provides a model of community-wide care. The specifics of how continuity and seamless transition are accomplished vary, but certain essential components increase its effectiveness:[37,67,68,82]

- Support and interventions spanning pregnancy through the postpartum period;
- Direct, skilled breastfeeding support via face-to-face home or clinic visits, and 24-hour telephone support;
- Assessment of breastfeeding before discharge, with the provision of appropriate feeding plans;
- Assessment of effectiveness of breastfeeding in the community, with the feeding plans in place or being adapted;
- Strong liaison and communication between hospitals and community health facilities;
- Presence of a community-based, interprofessional, and interagency breastfeeding committee that includes representation from hospitals, community services, public health, and peer-support groups to promote breastfeeding and provide consistent information and coordinated professional and peer-support services;
- Multifaceted approaches that include face-to-face professional and peer support;
- Referral to mother-to-mother (peer) support groups;
- Written information for parents describing the signs of successful breastfeeding and where to get help;
- Outreach to women and families who do not routinely use hospital and community services; and
- Scheduled support so families know what is available.

Sources of Information and Support

INTERNET

Federal and provincial government departments, regional/local health agencies, and professional groups, are important sources of information for breastfeeding women, and these can be accessed via the Internet and social media. But because there are plenty of sources of inaccurate information, it is helpful if agencies and HCPs direct families to credible sources and even show them how to recognize such sources when they are searching for breastfeeding information.

TELEPHONE HELPLINE

Some provinces or communities have implemented specialized lactation support phone lines. For example, the Breastfeeding Hotline in Ontario provides 24/7 access to advice on breastfeeding. In some jurisdictions, public health or community agencies offer telephone support lines for breastfeeding women.

PEER SUPPORT

Breastfeeding mother-to-mother (peer) support groups emerged in the 1950s with groups such as La Leche League and Nursing Mothers of Australia (now called Australian Breastfeeding Association). These community-based organizations developed as a grass roots network of support for breastfeeding mothers. The model of mother-to-mother support also now exists in a variety of health-related organizations. Research demonstrates that peer support positively impacts the duration and exclusivity of breastfeeding, likely because it normalizes the breastfeeding experience as women learn they are not alone in their successes and challenges. Participants were satisfied with this form of support, benefitting from the sense of community and belonging.[69,82] Peer-support programs can also help connect women with important community resources, which can be particularly important for those who cannot easily access mainstream services.[213]

Hospitals and community health agencies should actively support existing peer-support groups and facilitate the development of new ones. The Best Start Resource Centre has developed a useful resource to help communities develop and sustain breastfeeding peer-support programs.[214]

Vulnerable Populations

Some groups of women have lower rates of breastfeeding. These include women who are younger; have lower levels of education; are living in low income situations; have little or no support from their partners, family, or friends; face cultural or societal barriers; and find accessing health care and other types of support challenging. Geographical location also makes a difference: women in the Atlantic provinces were less likely to breastfeed than those living elsewhere in Canada.[49] It is critical that vulnerable populations have support that is tailored to their needs.[215,216]

A focus on support, education, intervention, and care is the best strategy for reaching women at risk of not breastfeeding or stopping breastfeeding early.[215] An example is the Canada Prenatal Nutrition Program (CPNP), a population health intervention jointly managed by the federal and provincial/territorial governments that aims to improve health outcomes for pregnant women and their newborn children facing conditions of risk. CPNP has resulted in an increased likelihood of women breastfeeding and breastfeeding for longer. The overall rate of breastfeeding initiation among CPNP participants (89%) was the same as the rate for the general Canadian population (88%)—a significant finding given the risks faced by the women in the program. Participants with high exposure to CPNP programming were 4 times more likely to breastfeed longer than those with lower program exposure.[217,218]

CONCLUSION

Family-centred care creates the context for successful breastfeeding. This includes supporting early and ongoing skin-to-skin contact; mother–baby togetherness and rooming-in; family involvement; and informed decision-making about infant feeding. Regardless of the chosen feeding method families require support and education, and to be treated with respect and dignity.

Breastfeeding is recognized as the unequalled method of feeding infants, and being unparalleled with respect to supporting normal growth and development and protecting from acute and chronic illness. Health Canada, PHAC, CPS, Dietitians of Canada, and the BCC recommends that babies be breastfed exclusively for the first 6 months, and sustained for up to 2 years or longer with appropriate complementary feeding to support the nutrition, immunological protection, growth and development of infants and toddlers. This is consistent with the WHO global public health recommendation.

In Canada, breastfeeding initiation rates have significantly improved, although breastfeeding exclusivity and duration do not achieve the WHO recommendations. Breastfeeding rates also vary across the country, decreasing along a general west-to-east gradient. Breastfeeding initiation and duration increase with active protection, promotion, and support. The WHO/UNICEF BFHI evidenced-based policies and practices have been shown to improve breastfeeding outcomes—duration and exclusivity. Canada continues to work on improving breastfeeding rates across the country through ongoing research, policy development, education, and collaborations and partnerships.

APPENDIX A—ADDITIONAL RESOURCES

CLINICAL PRACTICE GUIDELINES RELATING TO BREASTFEEDING

Canadian Paediatric Society
www.cps.ca/en/documents/authors-auteurs/fetus-and-newborn-committee

Infection Prevention and Control Canada
https://ipac-canada.org/photos/custom/OldSite/pdf/Human%20Milk%20Position%20Statement%20-%202015May%20-%20FINAL.pdf

Perinatal Services BC
www.perinatalservicesbc.ca/health-professionals/guidelines-standards

Registered Nurses' Association of Ontario
https://rnao.ca/sites/rnao-ca/files/bpg/Breastfeeding_BPG_2018.pdf

Society of Obstetricians and Gynaecologists
www.jogc.com/guidelines-english

COMMUNITY-BASED AND SUPPORT PROGRAMS

Best Start—Developing and Sustaining Breastfeeding Peer-Support Programs
www.beststart.org/resources/breastfeeding/B10_BF_Peer_Support_Programs_ENG_final.pdf

Public Health Agency of Canada—Protecting, Promoting And Supporting Breastfeeding: A Practical Workbook For Community-based Programs
www.canada.ca/en/public-health/services/health-promotion/childhood-adolescence/publications/protecting-promoting-supporting-breastfeeding.html

GUIDES FOR HEALTH CARE PROVIDERS

Agence de la santé et des services sociaux de la Capitale-Nationale—Guide pratique en allaitement pour les médecins
http://collections.banq.qc.ca/ark:/52327/bs1971954

Baby-Friendly Newfoundland & Labrador—Physician's Toolkit Breastfeeding: Quick Reference Guide
http://jrc.libguides.com/ld.php?content_id=20925313

Best Start—Breastfeeding Guidelines for Consultants—Desk Reference
www.beststart.org/resources/breastfeeding/pdf/breastfdeskref09.pdf

Health Canada—Nutrition for Healthy Term Infants
www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding.html

Toronto Public Health—Breastfeeding Protocols for Health Care Providers
www.toronto.ca/wp-content/uploads/2017/11/9102-tph-breastfeeding-protocols-1-to-21-complete-manual-2013.pdf

HAND EXPRESSION

Healthy Families BC
www.healthyfamiliesbc.ca/home/articles/video-hand-expressing-breastmilk

HUMAN MILK BANKS

BC Women's Provincial Milk Bank
www.bcwomens.ca/our-services/labour-birth-post-birth-care/milk-bank

Health Canada—Safety of Donor Human Milk in Canada
www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding/safety-donor-human-milk-canada.html

Human Milk Banking Association of North America—Guidelines and Best Practices
www.hmbana.org/publications

NorthernStar Mothers Milk Bank
http://northernstarmilkbank.ca

Public Mothers' Milk Bank
www.hema-quebec.qc.ca/lait-maternel/donneuses-lait/banque-publique-lait-maternel.en.html

The Rogers Hixon Ontario Human Milk Bank
www.Milkbankontario.ca

APPENDIX B—MATERNAL CONDITIONS THAT MAY IMPACT BREASTFEEDING

Postpartum Anxiety and Depression

Breastfeeding can reduce the risk of postpartum depression.[128] The release of oxytocin and prolactin during breastfeeding can bring about a sense of calm and encourage a positive mood. Breastfeeding can also reduce the mother's stress levels.[219–222]

Little is known about the efficacy and safety of antipsychotic and antidepressant medications during breastfeeding.[175,223] HCPs need to consider individual medications and their effects on breastfeeding and infant health to balance the risk of exposure against the benefits of the treatment and the importance of breastfeeding.

Chronic Illness

As the average age of childbearing is increasing, a higher number of pregnant and breastfeeding women have chronic illnesses. Many chronic illnesses are exacerbated by a lack of sleep. Therefore, women require not only assistance with breastfeeding, but also practical assistance with infant and family care so that they can get adequate rest.

ASTHMA

Approximately 9% of Canadian girls/women over the age of 12 years have asthma.[224] It may improve, worsen, or remain unchanged during pregnancy. If women have asthma or a family history of asthma, they should be encouraged to breastfeed since it has long-term protective effects on asthma for the breastfed child.[225]

DIABETES

Since studies show that women with diabetes are less likely to initiate breastfeeding, they should be given information about the importance of breastfeeding and the necessary encouragement sooner.[226,227] Evidence indicates that lactation improves glucose metabolism in the early postpartum period.[228] Because women with gestational diabetes may have a delayed onset of lactogenesis II, they often require support from a lactation specialist.[229,230] Women who have type 1 diabetes typically have a delay in lactogenesis II of about 1 day.[231–235] Therefore, early frequent feedings and support are important.

As with all women and babies, breastfeeding should begin as soon as possible after birth as colostrum helps to stabilize the infant's blood sugar. Sometimes babies of mothers with type 1 diabetes require care in a NICU. Families should be encouraged to stay with the infant and mothers to hand express or pump breastmilk.[128] Increasingly, women with diabetes are expressing colostrum in the last weeks of their pregnancy to use if their infants blood sugar is low immediately after birth.[236]

The physical and emotional issues for women with type 2 diabetes are similar to those with type 1 diabetes, except that their glucose control may not be as unstable during the early postpartum period.[128]

Women with diabetes may be more susceptible to mastitis. They should be knowledgeable about the signs—particularly if their blood glucose is not well controlled or if any infection raises their blood glucose levels.[237,238]

THYROID DISEASE

Pospartum thyroid dysfunction is fairly common and includes hypothyroidism, hyperthyroidism, and postpartum thyroiditis (PPT). Most women who have thyroid disorders can continue to breastfeed with treatment.[128]

If women with hypothyroidism are on replacement therapy, they need to be re-evaluated postpartum to see if any changes need to be made to their treatment. Usually, the thyroid replacement dose is reduced to the level it was before pregnancy.[239] If a woman has undiagnosed hypothyroidism postpartum, her milk supply may be reduced, but if she receives acceptable replacement therapy, her milk supply is likely to increase dramatically and her symptoms will be relieved.[128]

Hyperthyroidism does not affect the ability to breastfeed. The usual treatment for hyperthyroidism is antithyroid medication.[240]

Postpartum thyroiditis is the most common form of postpartum thyroid dysfunction, affecting about 7% of women in the first year postpartum. The symptoms, which may go undiagnosed, are fatigue, depression, and anxiety.

EPILEPSY (SEIZURE DISORDERS)

As most seizure disorders are so well controlled with medication that seizures rarely occur, all women with epilepsy should be encouraged to breastfeed their babies.[128] If the mother does have seizures, breastfeeding is not contraindicated: the risk of harm to the infant during breastfeeding is no more likely than during bottle-feeding.

OBESITY

Maternal obesity is associated with lower rates of breastfeeding initiation, duration, and exclusivity. Research suggests that these lower rates of breastfeeding among obese women are due to delayed lactogenesis II, thyroid dysfunction, and psychological factors.[241] As a result, obese mothers may benefit from additional support and guidance on how to know if their infant is getting enough milk; demonstrations of different feeding positions; assistance in supporting large breasts and seeing the baby's latch; and demonstrations of reverse pressure softening around the areola to enable deeper latch. Support from a lactation consultant has been demonstrated to positively affect breastfeeding outcomes for obese women.[241]

Autoimmune Disorders

INFLAMMATORY BOWEL DISEASE

Rates of inflammatory bowel disease (IBD) have increased with time and the highest incidence and prevalence rates are in western countries—northern Europe, Canada, and Australia.[242]

While older studies on other autoimmune disorders found that breastfeeding may be associated with an increased risk for developing postpartum relapse, more recent studies found that the risk of relapse of Crohn's disease was either reduced or unchanged in mothers who were breastfeeding versus those who were not.[243–245]

SYSTEMIC LUPUS ERYTHEMATOSUS

Systemic lupus erythematosus (SLE) is a multisystemic autoimmune disease that primarily affects women of childbearing age, which means that lactation experts need to be familiar with the disease. Most women with SLE are able to breastfeed.[246] As with all conditions, treatment is based on the individual woman's needs. The safety of her medications during breastfeeding needs to be considered and balanced with the importance of breastfeeding.

MULTIPLE SCLEROSIS

In most cases, the disease-modifying therapies used to treat multiple sclerosis (MS) are discontinued prior to conception or when pregnancy is diagnosed.[128] Women need to make informed decisions regarding what medications to take postpartum and infant feeding choices. The evidence on the impact of breastfeeding on postpartum exacerbations of MS is mixed, but a recent study found that mothers with MS who exclusively breastfed their babies for the first 2 months postpartum increased their well-being and had a reprieve from their illness for 6 months.[247]

While more research is needed on the impact of breastfeeding on the risk of relapse, a woman with MS must be given evidence-based information so that she can choose what is right for her and so that support is tailored to her needs.[128]

RHEUMATOID ARTHRITIS

It is common for women with rheumatoid arthritis (RA) to have their symptoms go into remission during pregnancy and then to relapse postpartum.[128] This occurs more often with breastfeeding mothers, most likely due to their hyperprolactinemic condition (prolactin has been shown to act as an immunostimulator).[248,249] Limited and largely older studies exist about the experiences of women with RA and breastfeeding. Breastfeeding women with RA can feel very fatigued and while they need rest, they also need continued range-of-motion exercises.[250] Lactation experts can help support women with RA to meet their individual needs and consult with her care team to ensure she has individualized care.

Women with Physical Disabilities

Support for breastfeeding by women with disabilities should be based on their individual goals and abilities. A normalized approach to the care of mothers and babies and appropriate assessment are essential for families. Women's experiences enhance their ability to problem-solve creatively.[128] Breastfeeding is an important confidence and self-esteem booster for all women, confirming their body's ability to nourish her infant.

Many women with spinal cord injuries breastfeed without difficulties. However, the higher and more complete the injury, the more likely difficulties will occur. The physical ability of the breasts to function normally will become apparent over time during early postpartum. Family and other support are essential to assist mothers with their own physical needs as well as the needs of their infants. HCPs can help mothers define their own breastfeeding success given their sensory completeness and mobility.

Women with disabilities often find breastfeeding more convenient than bottle-feeding. However, there may be stigma associated women with disabilities breastfeeding. HCPs may need education and families and mothers support in overcoming any challenges and breastfeed effectively. Peer support from other women with disabilities can often be helpful for the breastfeeding mother.

APPENDIX C—COMMON BREASTFEEDING CONCERNS

Nipple Pain

There is widespread clinical consensus on the importance of effective position and latch technique in preventing and resolving sore nipples.[251,252] Despite the plethora of pharmacological and non-pharmacological treatments and devices for sore or damaged nipples, there is little evidence of their effectiveness. Applying no treatment or expressing breastmilk may be equally or more beneficial than applying an ointment.[251] In fact, there is evidence that several nipple treatments, such as occlusive dressings and hydrogel dressings, are potentially harmful and should be avoided.

Applying expressed breastmilk to the sore nipple before and after every feeding may help to prevent or hasten healing of sore nipples.[252] Given the availability of breastmilk in breastfeeding women, the lack of cost, the biological components, and the widespread endorsement of breastfeeding by international bodies such as WHO and UNICEF, this may be the optimum treatment.

It is important to examine the infant's mouth. If the lingual frenulum is attached to the anterior portion of the tongue, the mobility of the tongue may be restricted, causing nipple damage. There is no standard definition or assessment technique to diagnose *tongue-tie* (ankyloglossia).[253] The CPS statement, *Ankyloglossia and Breastfeeding*, recommends a frenotomy only if significant tongue-tie is associated with major breastfeeding difficulties.[253]

Mammary candidiasis, a yeast infection of the nipple, can also lead to nipple pain. Caused by *Candida albicans*, a normal constituent of the gut microbiota in 80% of the population, this symbiotic organism can become invasive given the right conditions. The risk factors for mammary candidiasis include antibiotic use, a history of vaginal yeast infections, and thrush or a monilial diaper rash in the child.[254,255]

The most common symptom of candidiasis is burning, deep, or sharp pain in the affected breast that is out of proportion to any physical finding. The pain can radiate along the T4 dermatome around the body to the base of the scapula. Physical findings are erythema with lichenification, or flaking, of the central areola. The erythema has a sharp active edge and does not typically extend beyond the area of the baby's latch. Secondary bacterial infection can develop. Diagnosis is clinical as *C. albicans* is difficult to culture in breastmilk; the lactoferrin in breastmilk inhibits the growth of *C. albicans*.[256] Careful consideration of other causes of nipple pain, including vasospasm or Raynaud's phenomenon, and local nipple trauma should be ruled out before treatment with antifungal agents.[257]

Depending on the severity, mammary candidiasis may clear up on its own. Treatment options can include antifungal ointment, cream, or gel on the nipples or in the infant's mouth, or maternal oral antifungal medications in resistant cases. Pain medication may be used with severe symptoms.[258] As *C. albicans* is common on skin and in the gut, there is no need to discard milk that was pumped prior to treatment.[259]

Engorgement

Breast fullness at around the third day postpartum is a reassuring sign of normal lactation. About two-thirds of women experience at least moderate signs of engorgement or swelling and distension of the breasts, usually between the third and fifth day postpartum.[192] Frequent, effective feeding (or milk removal) and breast massage may minimize severe symptoms.

With engorgement, "the breast is enlarged, painful, shiny and edematous with diffuse red areas. The nipple may be effaced, milk often does not flow easily, and the infant can have difficulties latching. Contributing factors include delayed breastfeeding initiation, infrequent or time-restricted feedings, supplementation, inefficient infant latch, breast surgery, or any situation where milk stasis occurs."[54]

Prevention and treatment of engorgement is important as unrelieved engorgement can decrease milk production and cause involution of the breast tissue. The most effective prevention and treatment of engorgement is effective breastfeeding.

Plugged Ducts

Plugged or blocked ducts are usually seen as a tender area of local engorgement or palpable lump. They are often associated with missed feedings, pressure from restricting clothing, and an overabundant milk supply.[54]

Care for plugged ducts can include warm compresses prior to breastfeeding, breast massage before and during feeding, breastfeeding often and starting with the affected breast, avoid missing feedings, and not wearing tight clothes/bras.[54]

Mastitis

Mastitis is characterized by localized tenderness, redness, heat, and systemic symptoms of fever, malaise, and occasionally nausea and vomiting.[192] Onset is usually within the first 6 weeks postpartum, but can occur at any point during lactation. "Technically, mastitis is an inflammation of the breast, which may or may not involve an infection. It is not uncommon for the problem to start with engorgement, then become noninfective mastitis, followed by infective mastitis."[192]

Mastitis can also be a precursor to abscess formation. In this case, the clinical symptoms of mastitis improve but a tender mass develops. Once the mass is fluctuant, generally within 1 week, treatment is with needle aspiration, ideally under ultrasound guidance. Patients who do not respond to aspiration may require surgery.[260]

Jaundice

It is important to understand the interaction between jaundice and breastfeeding. Infants who become jaundiced may feed poorly and, conversely, infants who feed poorly are at risk of becoming jaundiced ("starvation jaundice" of the newborn or breast non-feeding jaundice).[128] All jaundiced infants should be carefully assessed by experienced HCPs to determine the cause and if therapy is required.

When phototherapy is required, most babies can be treated at the mother's bedside—mothers and babies should remain together as much as possible to ensure breastfeeding is not compromised as the CPS recommends that breastfeeding continue during phototherapy.[3,137] If the infant is not breastfeeding effectively, it is important to support the mother in expressing/pumping her milk for the baby. Similarly, if babies are readmitted, mothers should be accommodated to stay with their baby to encourage continued breastfeeding.

The CPS *Guidelines for Detection, Management and Prevention of Hyperbilirubinemia in Term and Late Preterm Newborn Infants* and *Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months* offer recommendation on assessing and monitoring infants.[2,137]

COMPARISON OF ENGORGEMENT, PLUGGED DUCTS, AND MASTITIS[54,128,192,257]

	Engorgement	Plugged duct	Mastitis
Onset	Gradual, usually 3–5 days postpartum or with sudden cessation of breastfeeding or pumping.	Gradual—usually over a few hours.	Sudden after 8–10 days.
Site	Bilateral	Unilateral	Usually unilateral, can be bilateral with group strep

COMPARISON OF ENGORGEMENT, PLUGGED DUCTS, AND MASTITIS[54,128,192,257]

		Engorgement	Plugged duct	Mastitis
Symptoms	**Swelling and heat**	Generalized warmth and fullness; painful, shiny, and edematous with diffuse red areas. The nipple may be effaced, milk often does not flow easily, and the infant can have difficulties latching.	May shift in size, with little or no heat. Palpable and mobile mass with sharp edges. Can have over-lying erythema.	Localized, red, hot, swollen. Can involve part of or all of the breast. Erythema and pain are present. Can be accompanied by induration or an inflammatory mass.
	Pain	Generalized	Mild, localized	Intense but localized
	Body temperature	<38.4 °C	<38.4 °C	Associated with a fever >38.4 °C
	Systemic symptoms	Feels well	Feels well	Flu-like symptoms
Cause		Infrequent or ineffective feedings, unnecessary supplements, or any conditions causing milk stasis.	Specific cause is unknown but may be due to inadequate draining of the breasts (possibly because of missed feedings, restricting clothing, or an overabundant milk supply).	Sore damaged nipples or inadequate draining of breasts.
Treatment		Continue breastfeeding. A warm shower or compresses or breast soaks before breastfeeding may facilitate the milk ejection reflex. Massaging the breast gently and hand express breastmilk or colostrum to soften the areola and facilitate latch before breastfeeding. Cold compresses between feedings reduces edema and can provide comfort. Frequent breastfeeding, starting with the engorged breast, may provide relief. Anti-inflammatory medications compatible with breastfeeding may be required.	Continue breastfeeding. Different feeding positions, such as having the infant's chin or nose towards the blocked area plus frequent effective feeding and hand expressing if necessary. Massaging the area of the plugged duct after feedings. Rule out the presence of a milk blister or pimple on the surface of the nipple. In extreme cases, the blister can be drained.	Continue breastfeeding. If breastfeeding is too painful, hand express or use a breast pump Start breastfeeding on the affected side. If this side is too painful, start on the unaffected side until milk let-down and then switch. Antibiotic treatment may be required. Recurrence in the same location warrants further evaluation to rule out an underlying mass or other abnormality.

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