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Breastfeeding - Promoting and Supporting the Initiation, Exclusivity, and Continuation of Breastfeeding for Newborns, Infants, and Young Children

Third Edition



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Greetings from Doris Grinspun, Chief Executive Officer, Registered Nurses' Association of Ontario



The Registered Nurses' Association of Ontario (RNAO) is delighted to present the third edition of the clinical best practice guideline *Breastfeeding - Promoting and Supporting the Initiation, Exclusivity, and Continuation of Breastfeeding for Newborns, Infants, and Young Children*. Evidence-based practice supports the excellence in service that health professionals are committed to delivering every day.

We offer our heartfelt thanks to the many stakeholders who are making our vision for best practice guidelines a reality, starting with the Government of Ontario, for recognizing RNAO's ability to lead the program and for providing multi-year funding. For their invaluable expertise and stewardship of this Guideline, I wish to thank the co-chairs Dr. Cindy-Lee Dennis (Professor in Nursing and Medicine, University of Toronto) and Dr. Sonia Semenic (Associate Professor, McGill University). Thanks to RNAO staff Katherine Wallace (Guideline Development Lead), Glynis Gittens (Project Coordinator), Zainab Lulat (Lead Nursing Research Associate), Giulia Zucal (Nursing Research Associate), Dr. Lucia Costantini, (Associate Director of Guideline Development, Research and Evaluation), and the rest of the RNAO Best Practice Guidelines Research and Development Team for their intense work in the production of this Guideline. Special thanks to the members of the RNAO expert panel for generously providing their time and expertise to deliver a rigorous and robust clinical resource. We couldn't have done it without you!

Successful uptake of best practice guidelines requires a concerted effort from educators, clinicians, employers, policy-makers, and researchers. The nursing and health-care community, with their unwavering commitment and passion for excellence in patient care, have provided the expertise and countless hours of volunteer work essential to the development and revision of each best practice guideline. Employers have responded enthusiastically by nominating best practice champions, implementing guidelines, and evaluating their impact on patients and organizations. Governments at home and abroad have joined in this journey. Together, we are building a culture of evidence-based practice.

We invite you to share this Guideline with your colleagues from other professions and with the patient advisors who are partnering within organizations because we have so much to learn from one another. Together, we must ensure that the public receives the best possible care every time they come in contact with us—making them the real winners in this important effort!

A handwritten signature in black ink that reads "Doris Grinspun". The signature is stylized with a long horizontal flourish underneath.

Doris Grinspun, RN, MSN, PhD, LLD (Hon), Dr (hc), O. ONT
Chief Executive Officer
Registered Nurses' Association of Ontario

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Table 1: Abbreviations Used in This Best Practice Guideline

ABBREVIATION	TERM
AFASS	<p>A = acceptable</p> <p>F = feasible</p> <p>A = affordable</p> <p>S = sustainable</p> <p>S = safe</p>
AGREE II	Appraisal of Guidelines for Research and Evaluation II
AMSTAR	Assessing the Methodological Quality of Systematic Reviews
Apgar	<p>A = appearance</p> <p>P = pulse</p> <p>G = grimace</p> <p>A = activity</p> <p>R = respiration</p>
ASL	American Sign Language
BCC	Breastfeeding Committee for Canada
BFI	Baby-Friendly Initiative
BMI	body mass index
BORN	Better Outcomes Registry & Network (Ontario)
BPG	best practice guideline
BPSO®	Best Practice Spotlight Organization®
BSE	breastfeeding self-efficacy
BSES	Breastfeeding Self-Efficacy Scale
BSES-SF	Breastfeeding Self-Efficacy Scale-Short Form

ABBREVIATION	TERM
BTAT	Bristol Tongue Assessment Tool
CASP	Critical Appraisal Skills Program
CIHI	Canadian Institute for Health Information
CPNP	Canadian Prenatal Nutrition Program
EBM	expressed breast milk
FDA	Food and Drug Administration
HATLFF	Hazelbaker Assessment Tool for Lingual Frenulum Function
GDM	gestational diabetes mellitus
HSV	herpes simplex virus
IBCLC®	International Board Certified Lactation Consultant®
IBLCE®	International Board of Lactation Consultant Examiners®
ILCA®	International Lactation Consultant Association®
IMS	insufficient milk supply
LATCH	<p>L = how well the baby latches</p> <p>A = audible number of swallows</p> <p>T = type of nipple</p> <p>C = comfort level with breastfeeding</p> <p>H = amount of assistance required when positioning the infant at the breast</p>
LC	lactation consultant
LEAARC	Lactation Education Accreditation and Approval Review Committee
LGBTQ	lesbian, gay, bisexual, trans, and queer

ABBREVIATION	TERM
LGBTQ+	lesbian, gay, bisexual, transgender, queer or questioning, and other
LOA	leave of absence
NICU	neonatal intensive care unit
NQuIRE®	Nursing Quality Indicators for Reporting and Evaluation
RNAO	Registered Nurses' Association of Ontario
SIDS	sudden infant death syndrome
SUPC	sudden unexpected postnatal collapse
THC	tetrahydrocannabinol
T2DM	type 2 diabetes mellitus
UK	United Kingdom of Great Britain and Northern Ireland
UNICEF	United Nations Children's Fund
USA	United States of America
WHA	World Health Assembly
WHO	World Health Organization

How to Use This Document

This nursing Best Practice Guideline (BPG)^{G*} is a comprehensive document that provides resources for evidence-based nursing practice. It is not intended to be a manual or “how to” guide, but rather a tool to guide best practices and enhance decision-making for nurses^G, the interprofessional team^G, and peers^G who work with breastfeeding persons^G and their families^G to promote and support breastfeeding initiation^G, exclusivity^G, and continuation^G for newborns^G, infants^G, and young children^G. The BPG should be reviewed and applied in accordance with both the needs of individual organizations or practice settings, and the needs and preferences of persons and their families accessing the health system for care and services. In addition, the BPG provides an overview of appropriate structures and supports for providing the best possible evidence-based care.

Nurses, the interprofessional team, and administrators who lead and facilitate practice changes will find this document invaluable for developing policies, procedures, protocols, educational programs, assessments, interventions, and documentation tools. Nurses, the interprofessional team, and peers who provide direct care will benefit from reviewing the recommendations and supporting evidence. We encourage practice settings to adapt the BPG in formats that are feasible for daily use.

If your organization is adopting this BPG, we recommend that you follow these steps:

1. Assess your existing policies, procedures, protocols, and educational programs in relation to the recommendations in this Guideline.
2. Identify existing needs or gaps in your policies, procedures, protocols, and educational programs.
3. Note the recommendations that are applicable to your setting and that can be used to address your organization’s existing needs or gaps.
4. Develop a plan for implementing the recommendations, sustaining best practices, and evaluating outcomes.

Implementation science^G resources, including the Registered Nurses’ Association of Ontario (RNAO) *Toolkit: Implementation of Best Practice Guidelines* (2012), are available at www.RNAO.ca. In addition, all of the RNAO BPGs are available for download on the RNAO website at RNAO.ca/bpg. To locate a particular BPG, search by keyword or browse by topic.

We are interested in hearing how you have implemented this Guideline. Please contact us to share your story.

* Throughout this document, terms marked with a superscript G (^G) can be found in the Glossary of Terms ([Appendix A](#)).

Abbreviations are used throughout this guideline and are listed in **Table 1**.

Purpose and Scope

RNAO's BPGs are systematically developed, evidence-based documents that include recommendations for nurses, the interprofessional team, peers, educators, leaders, policy-makers, persons, and families on specific clinical and healthy work environment topics. This BPG is intended to replace the RNAO BPG *Breastfeeding Best Practice Guidelines for Nurses* (1) and its supplement (2). It is meant to be used by nurses, the interprofessional team, and peers, across the perinatal period^G to enhance the quality of their practices to support (a) breastfeeding initiation, (b) exclusivity for newborns and infants to six months of age, and (c) continuation for infants and young children to two years or longer, in addition to complementary feeding. For the purposes of this guideline, peers are defined as individuals who work independently or in collaboration with nurses and the interprofessional team to support positive breastfeeding outcomes.

In June 2016, RNAO convened a panel consisting of a group of individuals across a variety of health-care settings with expertise in breastfeeding initiation, exclusivity, and continuation. The RNAO expert panel was interprofessional: it was comprised of (a) nurses; (b) members of the interprofessional team who hold clinical, administrative, and academic positions; and (c) advocates who, as peer supporters, have lived breastfeeding experience. The experts have experience working with breastfeeding persons and their families in different types of health-care settings (e.g. acute, community, public, and primary health care), and organizations (e.g., associations and teaching institutions).

To determine the purpose and scope of the BPG, the RNAO Best Practice Guideline Research and Development Team did the following:

- Reviewed the RNAO BPG *Breastfeeding Best Practices for Nurses* (1) and its supplement (2);
- Undertook a scoping review^G of the literature to determine available evidence on the initiation, exclusivity, and continuation of breastfeeding; and
- Conducted a guideline search and gap analysis.

Based on these activities, a BPG was developed with the purpose of enhancing the capacity of nurses, the interprofessional team, peers, policy-makers, and employers to meet the needs of (a) breastfeeding persons; (b) their healthy term newborns, infants, and young children; and (c) their partners^G, family^G, and support network^G.

The focus of this Guideline is breastfeeding which recognizes and includes the varied ways in which breast milk^G may be fed to a newborn, infant, or young child. This includes direct breastfeeding, expressed breast milk (EBM)^G, and/or donor human milk. The use of formula supplementation or other manufactured infant and young child feeding products are included in the BPG only as clinically necessary and when breast or donor breast milk is not accessible, with the goal of achieving the initiation and continuation of breastfeeding. [Appendix H](#) lists clinical indications for the temporary or permanent use of formula or other manufactured infant and young child feeding products.

Guiding Principles:

This Guideline was created based on guiding principles of person- and family-centred care^G, in recognition of breastfeeding as the optimal feeding practice and physiological norm for newborns, infants, and young children when supplemented with complementary foods after six months. For further details regarding person- and family centred care, refer to the 2015 RNAO BPG “*Person- and Family-Centred Care*”, available at <http://rnao.ca/bpg/guidelines/person-and-family-centred-care>.

- Nearly all healthy term infants can breastfeed.
- The targets of breastfeeding are:
 - Initiation within the first hour after birth or once the breastfeeding dyad is clinically stable,
 - Exclusive breastfeeding for the first six months of life, and
 - Continued breastfeeding to two years or longer as determined by the breastfeeding dyad.
- Exclusive breastfeeding to six months—during which the infant receives no other liquids or solids, except vitamin drops or syrups, mineral supplements, or prescribed medicines—is the most favourable infant feeding practice to promote healthy outcomes for newborns and infants.
- The practice of breastfeeding extends beyond physiology to include other components, such as social, political, economic, cultural, psychosocial, and organizational factors. These factors can positively or negatively affect breastfeeding intention, initiation, exclusivity, and continuation.
- Breastfeeding supports the parental relationship with the newborn, infant, and young child, including bonding and attachment.
- Breastfeeding persons have the right to full information on newborn, infant, and young child feeding choices, including benefits and harms, to support their informed decision-making^G.
- Skin-to-skin contact is a key strategy to facilitate breastfeeding.
- Nurses, the interprofessional team, and peers play an integral role in supporting the initiation, exclusivity, and continuation of breastfeeding.
- Breastfeeding promotion is achieved through the consistent implementation of evidence-based practice, the interprofessional team, and peers.

Types of Recommendations:

The recommendations in this Guideline apply to clinical care in a range of community and health-care settings. One recommendation (**Recommendation 4.3**) refers to breastfeeding and the workplace and is applicable to employers. All of the recommendations are based on findings from systematic reviews on the most effective clinical interventions and educational approaches for nurses, the interprofessional team, and organization and system policy strategies to support the initiation, exclusivity, and continuation of breastfeeding. Recommendations are provided at three levels.

- Practice recommendations^G are directed primarily towards nurses and the interprofessional team who provide clinical care to breastfeeding persons across the spectrum of care sectors. This includes (but is not limited to), primary, acute, community, and home care. All of the recommendations are applicable to the scope of practice of registered nurses, registered practical nurses, and nurse practitioners. The secondary audience of the practice recommendations are peers who support and promote breastfeeding either independently or in collaboration with nurses and the interprofessional team.

- Education recommendations^G are directed to those responsible for the education of nurses and the interprofessional team, such as educators, quality improvement teams, managers, administrators, and academic and professional institutions. These recommendations outline core content and training strategies required for entry-level health-care programs, continued education, and professional development.
- Organization and System Policy recommendations^G apply to managers, administrators, and policy-makers responsible for developing policy or securing the supports required within health-care organizations and/or the broader community, including places of work, for implementing best practices.

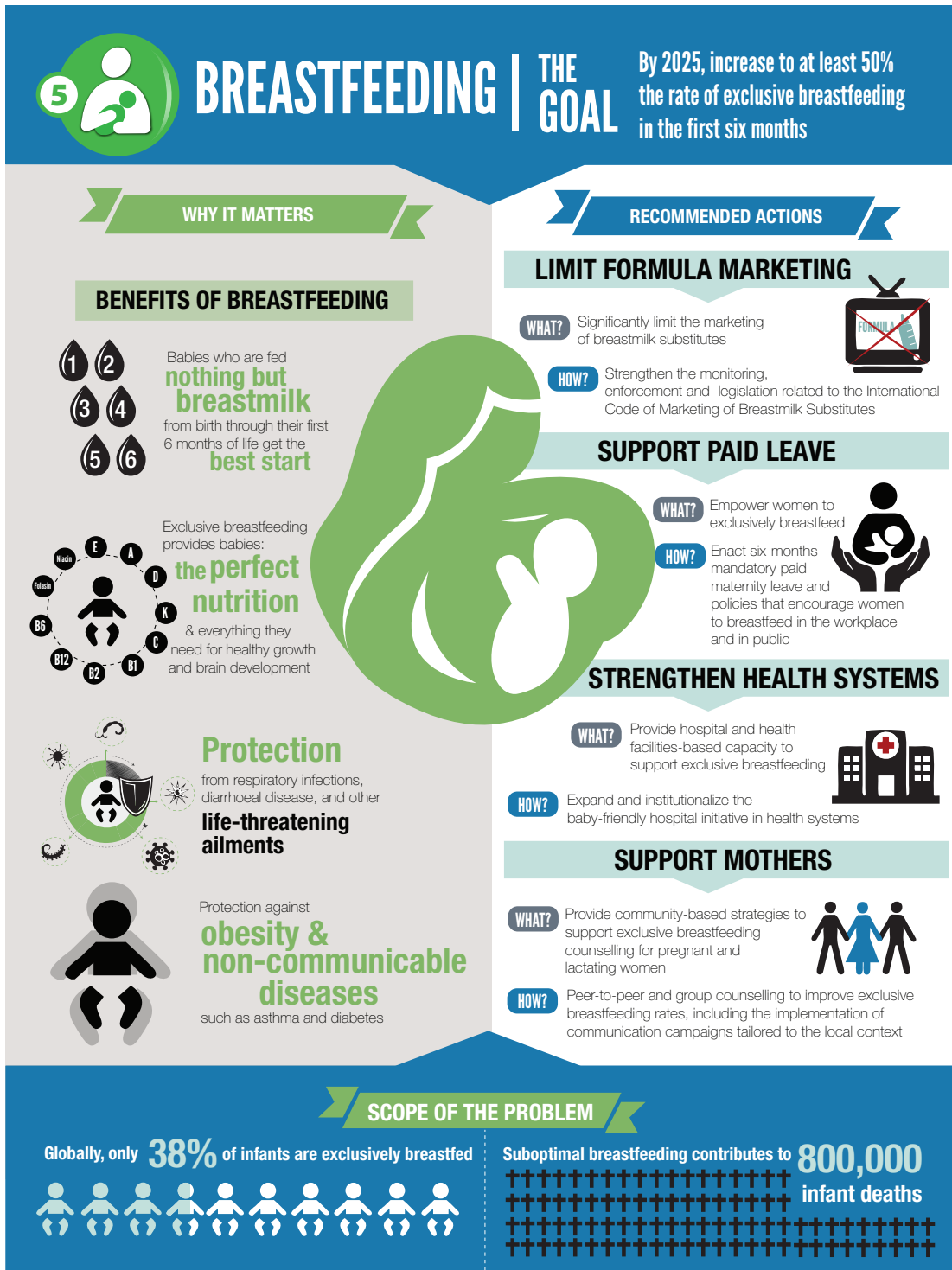
Recommendations are grouped according to focus—breastfeeding initiation, exclusivity, and continuation--as supported in the evidence.

- Recommendations to support breastfeeding initiation are meant for newborns within the first hour of life or once the breastfeeding dyad is clinically stable.
- Recommendations to support breastfeeding initiation and exclusivity are meant for newborns and infants from birth to six months of age.
- Recommendations to support initiation, exclusivity, and continuation are for newborns, infants, and young children from birth to two years (or longer).

For optimal effectiveness, all three of these recommendation types should be implemented concurrently.

Note: The recommendations in this BPG align with the World Health Organization (WHO) Global Targets 2025 in breastfeeding to promote, protect, and support exclusive breastfeeding to six months of age as the optimal breastfeeding practice for infants and continued breastfeeding to two years or longer for young children to achieve healthy childhood development (3). More details on the WHO Global Nutrition Targets 2025 Breastfeeding Policy Brief, to increase the rate of exclusive breastfeeding in the first six months up to a minimum of 50 percent can be found at http://apps.who.int/iris/bitstream/10665/149022/1/WHO_NMH_NHD_14.7_eng.pdf?ua=1. The WHO's Global Nutrition Targets 2025 Breastfeeding Goals are described in **Figure 1** on the following page.

Figure 1: WHO Global Nutrition Targets 2025 - Breastfeeding



Reproduced, with permission of the publisher, from Breastfeeding - The Goal. Geneva, World Health Organization, 2016 (http://www.who.int/nutrition/global-target-2025/infographic_breastfeeding.pdf), accessed 04 April 2018)

Discussion of Evidence:

The Discussion of Evidence that follows each recommendation statement has five main sections:

1. The “Evidence Summary” outlines the supporting research from the systematic review(s) that directly relates to the recommendation.
2. “Benefits and Harms” inform any aspect of care that promotes or deters from the health and well-being of a breastfeeding person and/or that of their newborn, infant, or young child. Content in this section includes research from the systematic review(s).
3. “Values and Preferences” denote the prioritization of approaches that facilitate health equality and the importance of consideration for desired care. Content for the “Values and Preferences” section may or may not include research from the systematic reviews. When applicable, the RNAO expert panel and stakeholders^G contributed to these areas.
4. “Practice Notes” highlight pragmatic information for nurses, members of the interprofessional team, and peers. This section may include supportive evidence from other sources (e.g., other BPGs or the RNAO expert panel).
5. “Supporting Resources” includes a list of relevant research studies, resources, and websites that support clinical practice, education, and organization and system policy recommendations. As there are numerous accessible breastfeeding resources, this section includes a sample published within the past five years that are evidence-based and align with the recommendations (with the exception of unique or seminal publications). Content listed in this section was not part of the systematic review^G and was not quality appraised. As such, the list is not exhaustive and the inclusion of a resource in one of these lists does not imply an endorsement from RNAO.

Key Concepts Used in This BPG:

Breastfeeding: the act of providing a newborn, infant, or young child with human milk directly at the breast, or indirectly, via hand expression or pumping. Human milk also may be obtained from donors via wet nursing^G, informal milk sharing (e.g., cross-feeding^G), or from a breast milk bank. The use of wet nurses, cross-feeding, or informal breast milk sharing between a donor and a recipient is recognized as a decision that some breastfeeding persons may make as an alternative to human milk substitutes (such as formula or other manufactured infant and young child feeding products). However, only the use of pasteurized donor human milk from an accredited milk bank is recommended in this BPG.

Information pertaining to informal breast milk sharing or strategies to reduce risks is not included in this Guideline. Informally obtained human milk and/or unpasteurized human milk are not recommended due to potential risks—including exposure to bacterial or environmental contaminants (e.g., alcohol, drugs, or tobacco) or infectious disease transmission—that may outweigh those of formula or other manufactured infant and young child feeding products (4, 5). Sharing breast milk via the internet is not recommended due to the inability to screen the donor clinically and because the breast milk may not be suitable for consumption upon receipt (6). At a minimum, informed decision-making is required for informal breast milk sharing (5).

Breastfeeding initiation: the introductory steps taken by a breastfeeding person to support and achieve the onset of lactation, including skin-to-skin contact, positioning and latch attempts, and colostrum^G expression, either via hand or pump. In this BPG, the inclusion of breastfeeding initiation is intended as a means of promoting the goal of breastfeeding exclusivity and aligning the recommendations with the WHO’s priorities of breastfeeding protection, promotion, and support. It occurs ideally within the first hour of life or as soon as the breastfeeding dyad is clinically stable (7).

Breastfeeding person: refers to the lactating person who is providing breast milk, either directly or indirectly, to a newborn, infant, or young child. The term supports diversity and may include (but is not limited to) the following terms: mother, parent, woman, surrogate, human milk bank donor, or a person who is pumping and feeding EBM. The breastfeeding person may identify with one or more of these descriptors and the term is meant to be inclusive of anyone who has diverse gender identities or expressions. As part of a person-centred approach, however, it is important for nurses, the interprofessional team, and peers to clarify the term preferred by the person in question.

Breastfeeding process: the multiple components necessary to achieve breastfeeding initiation, exclusivity, and continuation. Components include (but are not limited to) positioning and latch, milk supply and transfer, and the person’s knowledge and skills in breastfeeding.

Continued breastfeeding: any breastfeeding beyond six months and up to two years or longer.

Exclusive breastfeeding: a category of breastfeeding exposure in which an infant, to six months of age, receives only breast milk directly at the breast or indirectly, as EBM, as well as any vitamin or mineral supplements or medications. The infant does not receive any other liquids or solids (8).

To promote consistency in terminology, categories of breastfeeding used in this Guideline, including exclusive, predominant, any, or no breastfeeding, align with those developed by WHO (8). The categories of breastfeeding are listed in **Table 2** below.

Table 2: Categories of Breastfeeding

CATEGORY	DESCRIPTOR
Exclusive breastfeeding	<ul style="list-style-type: none"> ■ The infant receives breast milk directly (from the breastfeeding person), or indirectly, (as EBM). ■ The infant also may receive vitamin drops or syrups, mineral supplements, or medicines. ■ No other foods or liquids are received.
Predominant breastfeeding	<ul style="list-style-type: none"> ■ The infant receives breast milk directly (from the breastfeeding person) or indirectly, (as EBM), as the predominant source of nourishment. ■ The infant also may receive water, water-based drinks, or fruit juices, as well as vitamin drops or syrups, mineral supplements, or medicines. ■ No other food-based fluids or non-human milk are received.
Breastfeeding	<ul style="list-style-type: none"> ■ The infant receives any breast milk, including EBM, as well as any food or liquid, including non-human milk or formula.
No breastfeeding	<ul style="list-style-type: none"> ■ The infant receives formula supplementation and/or animal milk. ■ The infant receives no breast milk directly (from the breastfeeding person) or indirectly (as EBM).

Source: Adapted by the RNAO expert panel from: World Health Organization. Indicators for assessing infant and young child feeding practices: conclusions of a consensus meeting held 6-8 November in Washington DC, USA, 2008. Geneva (CH): World Health Organization; 2008.

Infant: refers to a child up to one year of age. In this BPG, the infant is assumed to be healthy.

Newborn: refers to a child up to 28 days of age. In this BPG, the newborn is assumed to be born at term and healthy.

Young child: refers to a child older than 12 months of age.

RNAO Guidelines and Resources That Align with This Guideline:

The following RNAO BPGs and resources may further inform nurses, the interprofessional team, and peers when implementing this Guideline:

- *Toolkit: Implementation of Best Practice Guidelines (2012)*
- *Developing and Sustaining Interprofessional Health Care (2013)*
- *Social determinants of health⁶ (2013)*
- *Working with Families to Promote Safe Sleep for Infants 0 – 12 Months of Age (2014)*
- *Engaging Clients Who Use Substances (2015)*
- *Person- and Family-Centred Care (2015)*
- *Intra-Professional Collaborative Practices among Nurses (2016)*
- *Crisis Intervention for Adults Using a Trauma-Informed Approach (2017)*
- *Integrating Tobacco Interventions into Daily Practice (2017)*
- *Assessment and Interventions for Perinatal Depression (2018)*

For more information about this BPG, including the development process, systematic reviews, and search strategies, please refer to [Appendices B](#) and [C](#).

Supporting Guidelines from Another Organization:

See [Appendix C](#) for more details on a moderate quality guideline ‘*Use of Galactagogues in Initiating or Augmenting the Rate of Maternal Milk Secretion*’ by the Academy of Breastfeeding Medicine Protocol Committee with recommendations relevant to initiating or enhancing breast milk supply.

Topics outside of the Scope of this Guideline:

Breastfeeding is important for all infants. This Guideline focuses on infants who are born at term and healthy. Topics outside of the scope of this BPG include the following:

- early preterm infants (i.e., less than 34 weeks gestation), or ill infants;
- infants with clinical syndromes (e.g., Down syndrome);
- twins or higher order multiples;
- human milk banking; and
- wet nursing or cross-feeding

Strategies to support specific breastfeeding populations and situations are discussed in [Appendix D](#). Strategies to support specific breastfeeding populations or situations for newborns, infants, and young children are discussed in [Appendix E](#).

Interpretation of Evidence

Levels of evidence are assigned to each study to denote the research design. Higher levels of evidence indicate that fewer potential sources of bias influenced the research findings, thus reducing alternative explanations of the phenomenon of interest. Levels of evidence do not reflect the quality of individual studies or reviews.

In some cases, guideline recommendations are assigned more than one level of evidence. This reflects the inclusion of multiple studies to support the recommendation. For transparency, the level of evidence for each component of the recommendation statement is identified in the discussion of evidence.

Table 3: Levels of Evidence

LEVEL	SOURCE OF EVIDENCE
Ia	Evidence obtained from meta-analysis ^g or systematic reviews of randomized controlled trials ^g , and/or synthesis of multiple studies primarily of quantitative research.
Ib	Evidence obtained from at least one randomized controlled trial.
IIa	Evidence obtained from at least one well-designed controlled study ^g without randomization.
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study ^g without randomization.
III	Synthesis of multiple studies primarily of qualitative research ^g .
IV	Evidence obtained from well-designed non-experimental observational studies, such as analytical studies ^g , descriptive studies ^g , and/or qualitative studies.
V	Evidence obtained from expert opinion, committee reports, and/or clinical experiences of respected authorities.

Sources: Adapted by the RNAO Best Practice Guideline Research and Development Team from: Scottish Intercollegiate Guidelines Network. SIGN 50: a guideline developer's handbook. Edinburgh (UK): Scottish Intercollegiate Guidelines Network; 2011; and Pati D. A framework for evaluating evidence in evidence-based design. *HERD*. 2011;21(3):105–12.

Quality of Evidence

The quality of each research study was determined using critical appraisal tools. Quality was ranked as high, moderate, or low and cited in the discussion of evidence. The validated⁶ and published quality appraisal tools used to judge the methodological strength of the studies include The Critical Appraisal Skills Program (CASP) for primary studies and Assessing the Methodological Quality of Systematic Reviews (AMSTAR) for systematic reviews. The quality rating was calculated by converting the score on the appraisal tool into a percentage.

When other guidelines informed the recommendation and discussion of evidence, the Appraisal of Guidelines for Research and Evaluation Instrument II (AGREE II) tool was used to determine the quality rating. **Tables 4 and 5** highlight the quality scores required to achieve a high, moderate, or low quality rating.

Table 4: Quality Rating for Studies Using Critical Appraisal Tools

QUALITY SCORE ON APPRAISAL TOOLS	OVERALL QUALITY RATING
Greater than, or equal to, a converted score of 82.4 per cent	High
A converted score of 62.5–82.3 per cent	Moderate
Less than, or equal to, a converted score of 62.4 per cent	Low

Table 5: Quality Rating for Guidelines Using the AGREE II Tool

QUALITY SCORE ON THE AGREE II	OVERALL QUALITY RATING
A score of 6 or 7 on the overall guideline quality	High
A score of 4 or 5 on the overall guideline quality	Moderate
A score of less than 4 on the overall guideline quality	Low (Not used to support recommendations)

Due to the abundance of evidence available on breastfeeding, it was initially determined that systematic reviews only would be included in this Guideline. For research question one, no reviews were found, therefore, primary studies were included and quality appraised based on a modified inclusion/exclusion criteria. For research questions two, three, and four, systematic reviews and meta-analyses were appraised to support recommendations and discussions of evidence. For a detailed explanation of the systematic review process and quality appraisal, see [Appendix C](#).

Summary of Recommendations

This BPG replaces the RNAO Breastfeeding Best Practice Guideline for Nurses (1) and its supplement (2).

PRACTICE RECOMMENDATIONS		LEVEL OF EVIDENCE
<p>Research Question #1: What are effective tools, processes, and strategies used by nurses, the interprofessional team, and peers for assessing pregnant and postpartum persons to increase the initiation, exclusivity, and continuation of breastfeeding?</p>		
1.0 Assessment	<p>Assessment Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Birth to Two Years, or Longer)</p>	
	<p>Recommendation 1.1: Assess the breastfeeding process, using validated and reliable tools, during pregnancy and at key stages of lactogenesis, including the following:</p> <ol style="list-style-type: none"> 1. During Stage I, (i.e., within the first 24 hours postpartum and prior to discharge from the childbirth setting), to support breastfeeding initiation. 2. During the transition of Stage I to Stage II, (i.e., between days two to eight postpartum), to support the significant increase in breast milk volume. 3. During Stage II and Stage III, (i.e., from approximately day nine postpartum and onwards) to support the maintenance of breast milk production, as long as breastfeeding continues. 	IV
<p>Research Question #2: What are effective interventions or programs used by nurses, the interprofessional team, and peers to increase the initiation, exclusivity, and continuation of breastfeeding?</p>		
2.0 Intervention	<p>Interventions to Support Initial Breastfeeding (Birth to the First Hour of Life, or Once Clinically Stable)</p>	
	<p>Recommendation 2.1: Facilitate skin-to-skin contact with the breastfeeding dyad immediately following childbirth or once clinically stable.</p>	1a
	<p>Recommendation 2.2: Support the early initiation of breastfeeding, within one hour of childbirth or once the breastfeeding dyad is clinically stable, through multi-component perinatal interventions including:</p> <ul style="list-style-type: none"> ■ prenatal education and ■ immediate postpartum bedside assistance. 	1a

2.0 Intervention	Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)	
	<p>Recommendation 2.3:</p> <p>Support the breastfeeding dyad to achieve effective positioning, latch, and milk transfer.</p>	1a
	<p>Recommendation 2.4:</p> <p>Support responsive cue-based breastfeeding through strategies such as:</p> <ul style="list-style-type: none"> ■ education and promotion and ■ recognition of the needs of the breast-feeding person. 	1a,1b
	<p>Recommendation 2.5:</p> <p>Teach hand expression to all breastfeeding persons prior to discharge from the childbirth setting.</p>	1a, V
	<p>Recommendation 2.6:</p> <p>Implement individualized breastfeeding self-efficacy interventions throughout the perinatal period to enhance breastfeeding confidence including:</p> <ul style="list-style-type: none"> ■ one-on-one counseling prior to discharge from the childbirth setting and ■ follow-up post-discharge. 	1a, 1b
	<p>Recommendation 2.7:</p> <p>Provide individualized assistance to support or enhance breast milk production, where appropriate.</p>	1a, V
	<p>Recommendation 2.8:</p> <p>Provide ongoing proactive breastfeeding support services to address the individualized needs of the breastfeeding dyad.</p>	1a
	<p>Recommendation 2.9:</p> <p>Facilitate informed decision-making regarding pacifier use.</p>	1a
	Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Birth to Two Years, or Longer)	
	<p>Recommendation 2.10:</p> <p>Provide breastfeeding education throughout the perinatal period and as long as breastfeeding continues:</p> <ul style="list-style-type: none"> ■ across a variety of settings and ■ through diverse approaches, including those tailored to the needs of vulnerable populations. 	1a
<p>Recommendation 2.11:</p> <p>Include family members, such as partners and grandmothers, in breastfeeding education and support.</p>	1a	

EDUCATION RECOMMENDATIONS		LEVEL OF EVIDENCE
<p>Research Question #3: What education or training is required for nurses, the interprofessional team, and peers to support breastfeeding initiation, exclusivity, and continuation?</p>		
3.0. Education	<p>Interventions to Support Initial and Exclusive Breastfeeding (Throughout the Perinatal Period to Six Months Postpartum)</p>	
	<p>Recommendation 3.1: Provide continuing education on breastfeeding to nurses, the interprofessional team, and peers that incorporates theoretical knowledge and practical skills.</p>	la

ORGANIZATION AND SYSTEM POLICY RECOMMENDATIONS		LEVEL OF EVIDENCE
<p>Research Question #4: What are optimal practices, programs, and policies for health-care organizations and the broader community, including places of work, to support initial, exclusive, and continued breastfeeding?</p>		
4.0 Organization and System Policy	<p>Interventions to Support Initial and Exclusive Breastfeeding (Throughout the Perinatal Period to Six Months Postpartum)</p>	
	<p>Recommendation 4.1: Consider integrating lactation consultants in the provision of care to the breastfeeding dyad throughout the perinatal period in health services and local communities.</p>	la
	<p>Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Throughout the Perinatal Period to Two Years, or Longer)</p>	
	<p>Recommendation 4.2: Routinely implement the provisions of the Baby-Friendly Initiative and the World Health Organization’s “<i>International Code for Marketing of Breast-Milk Substitutes</i>” within the health-care setting. Seek Baby-Friendly Initiative designation, where applicable.</p>	la
	<p>Recommendation 4.3: Implement breastfeeding support in the workplace, including parental leaves of absence and accommodations for breastfeeding persons.</p>	la

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Declarations of interest that might be construed as constituting an actual, potential, or apparent conflict were made by all members of the RNAO's expert panel, and members were asked to update their disclosures throughout the guideline development process. Information was requested about financial, intellectual, personal, and other interests and documented for future reference. No limiting conflicts were identified. Declarations of competing interest are posted as a separate document on the RNAO website.



Stakeholder Acknowledgment

RNAO is committed to obtaining feedback from (a) nurses from a wide range of practice settings and roles, (b) knowledgeable administrators and funders of health-care services, and (c) stakeholder associations as part of the guideline development process. For this Guideline, stakeholders representing diverse perspectives were solicited* for their feedback, and RNAO wishes to acknowledge the following individuals for their contribution.

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*Stakeholder reviewers for RNAO BPGs are identified in two ways. First, stakeholders are recruited through a public call issued on the RNAO website ([RNAO.ca/bpg/get-involved/stakeholder](https://rnao.ca/bpg/get-involved/stakeholder)). Second, individuals and organizations with expertise in the Guideline topic area are identified by the RNAO Best Practice Guideline Research and Development Team and the expert panel and are directly invited to participate in the review.

Stakeholder reviewers are individuals with subject matter expertise in the guideline topic or those who may be affected by its implementation. Reviewers may be nurses, members of the interprofessional team, breastfeeding peer supporters, nurse executives, administrators, research experts, educators, nursing students, or persons with lived experience and family members. RNAO aims to solicit stakeholder expertise and perspectives representing diverse health-care sectors, roles within nursing and other professions (e.g., clinical practice, research, education, and policy), and geographic locations.

Reviewers are asked to read a full draft of the BPG and participate in the review prior to its publication. Stakeholder feedback is submitted online by completing a survey questionnaire. The stakeholders are asked the following questions about each recommendation:

- Is this recommendation clear?
- Do you agree with this recommendation?
- Is the discussion of evidence thorough and does the evidence support the recommendation?

The survey also provides an opportunity to include comments and feedback for each section of the BPG. Survey submissions are compiled and feedback is summarized by the RNAO Best Practice Research and Development Team. Together with the expert panel, survey results are reviewed and considered. If necessary, BPG content and recommendations are modified prior to publication to reflect the feedback received.

Stakeholders also participated in validating the quality indicators developed to evaluate this BPG's implementation by completing a survey questionnaire. The stakeholders assessed certain validation criteria on a 7-point Likert scale for each quality indicator.

Stakeholder reviewers have given consent to the publication of their names and relevant information in this BPG.

Background Context

Global targets seek to achieve exclusive breastfeeding as the optimal nutrition for infants to six months of age and to promote continued breastfeeding for infants and young children to two years of age or longer (with the addition of adequate and safe complementary foods) (3, 7). The evidence supporting the importance of breastfeeding is well-established. For the breastfeeding person, this includes a reduced risk of chronic illnesses, (such as breast and ovarian cancers as well as type 2 diabetes mellitus (T2DM)), and delayed onset of menstruation (also known as lactational amenorrhea^G), which can support child spacing (7). For newborns, infants, and young children, the importance of breastfeeding includes a reduction in gastrointestinal and respiratory infections, chronic illnesses (such as diabetes mellitus and childhood leukemias), and the likelihood of becoming overweight or obese in adolescence or adulthood (3, 7, 9 - 11). **Appendix G** includes additional examples of the importance of breastfeeding for the breastfeeding dyad^G.

Championing nurses, the interprofessional team, and peers to increase rates of initiation, exclusivity, and continuation helps to establish breastfeeding as the physiological and cultural norm. Current global statistics available from WHO and the United Nations Children's Fund (UNICEF) indicate the following:

- The rate of breastfeeding initiation within the first hour of birth is 44 percent;
- Forty percent of infants less than six months are exclusively breastfed;
- Forty-five percent of children are breastfeeding at two years of age; and
- Improving breastfeeding practices could save 820,000 lives each year worldwide (7, 9).

As hundreds of thousands of newborn and infant lives could be saved with breastfeeding, it is one of the most cost-effective investments a country can make. For example, a pediatric cost analysis in the United States of America (USA) determined that \$13 billion annually could be saved if 90 per cent of families exclusively breastfed their infants to six months of age (12). In the United Kingdom (UK), an estimated £11 million annually could be saved if infants were exclusively breastfed to four months of age (13). These cost savings reflect improved health outcomes and reduced morbidities.

In Canada, the latest statistics from 2011 - 2012 on the prevalence of breastfeeding initiation, exclusivity, and continuation indicate the following:

- British Columbia has the highest rates of exclusivity to six months among the provinces, followed by the prairies (i.e., the provinces of Manitoba, Saskatchewan, and Alberta combined). Ontario is third highest with a rate of 25 per cent, just below the national average of 26 per cent. The province of Quebec has the lowest rate of exclusivity (19 per cent).
- Eighty-nine per cent initiate breastfeeding. The 11 per cent who do not initiate tend to be single, younger in age, and have less formal education, which demonstrates the impact of social determinants of health on breastfeeding practices. Reasons cited for not initiating breastfeeding include a health condition of the breastfeeding person or infant or a perception that bottle feeding is easier.
- Fifteen per cent breastfeed beyond the first year of their child's life.
- Reasons for breastfeeding cessation^G for any duration before six months include perceived or actual insufficient milk supply (IMS), difficulties with breastfeeding technique, and infant readiness to eat solids (14).

To attain a higher prevalence of initiation, exclusivity, and continuation, an understanding is needed of the multiple variables that influence breastfeeding outcomes at the individual, organizational, and socio-cultural levels.

- At the individual level, breastfeeding is affected by many factors, including intention, initiation experience, breastfeeding goals, confidence level, support from family, the presence of social networks and access to breastfeeding supports, including lactation consultants (LCs)^G (15–20).
- At the organizational level, the integration of Baby-Friendly Initiative (BFI)^G principles seeks to protect, promote, and support breastfeeding by detailing minimum standards of care (7, 21). **Table 6** includes a listing of BFI principles as developed by WHO and by Breastfeeding Committee for Canada (BCC) (7, 21). As the National Authority for the WHO/UNICEF BFI in Canada, BCC provides strategic leadership dedicated to protecting, promoting, and supporting breastfeeding as the cultural norm through the development, funding, provision, and evaluation of breastfeeding services throughout the perinatal period (21). BCC is comprised of multi-sectoral representation from government policy-makers, professional and community-based organizations, academia, and consumer organizations (21). It connects the implementation of the BFI with other maternal and child health nutrition programs to ensure it is not a stand-alone initiative (21). Through the work of BCC, the integration of BFI principles into national relevant policy documents is actively supported, occurring through processes such as legislation, certification, accreditation or regulation (21). At a provincial level, BFI Ontario acts as the authority for the BCC as the contact between hospitals and community facilities for all matters related to the formal BFI assessment processes (21, 22).

In addition to implementing BFI principles, support and adaptation of the “*International Code of Marketing of Breast-Milk Substitutes*” (also known as “The Code”) and any breastfeeding resolutions by the World Health Assembly^C is critical (3, 7). To this end, health-care organization administrators, staff, and peers must commit to a) promoting breastfeeding, b) not accepting financial or material incentives from formula companies, and c) not providing formula samples unless clinically indicated or following an informed decision-making process that includes associated risks with exposure (3,7). In addition to committed efforts by individuals and organizations, government legislation, regulation, and enforcement of “The Code” is also essential.

- At the broader sociocultural level, the initiation, exclusivity, and continuation of breastfeeding are influenced by prevailing societal standards and behaviours (23, 24). These define breastfeeding beyond a biological function and include standards, habits, norms, and behaviours that can influence the decision of whether to continue or cease breastfeeding. In a Western society, examples of some of the standards, habits, views, and behaviours that impact breastfeeding practice can include the following:
 - The expression of gender inequities, such as the level of independence of the breastfeeding person (including financial independence) and their ability to make decisions independent of their partner and family.
 - The expectations of being a parent, including characteristics of what is socially defined as ‘good’ parenting.
 - The role and value placed on breastfeeding persons, including both inside and outside of the home (such as in the workplace).
 - Available protected and enforced leaves of absence (LOA) in the workplace, as well as support and accommodations for breastfeeding in the workplace upon return to work.
 - The symbolism of female breasts can inform and influence what is deemed acceptable for breastfeeding practices through social mores. As part of a broader cultural context in which female breasts have a sexual symbolism, these attitudes can include the following:
 - that breastfeeding is an act appropriate solely for newborns or young infants;
 - that breastfeeding should not take place in public spaces or, if it is done in public, that it should be done discreetly because public breastfeeding may be seen as a form of exhibitionism; and
 - that breastfeeding may threaten a person’s attractiveness, power, and femininity, where applicable (24 - 26).

Culture influences breastfeeding decisions, including intention and duration, and the factors surrounding these decisions are diverse (23, 27). Disparities in breastfeeding rates need to be addressed and remedied through education and public health efforts that are tailored to cultural differences and the resulting barriers (27).

Breastfeeding optimizes the health and well-being of the breastfeeding dyad. Coordinated and concurrent strategies that recognize and integrate the multiple components that impact breastfeeding at the individual, organizational and societal levels are needed. Similarly, evidence-based best practices that support the initiation, exclusivity, and continuation of breastfeeding are warranted.

Table 6: Global and Canadian Implementations of the WHO/UNICEF’s Baby-Friendly Initiative’s “Ten Steps to Successful Breastfeeding”

“TEN STEPS TO SUCCESSFUL BREASTFEEDING” (WHO/UNICEF)		“THE BFI 10 STEPS AND WHO CODE OUTCOME INDICATORS FOR HOSPITALS AND COMMUNITY HEALTH SERVICES” (BCC)
FOCUS:	CRITICAL MANAGEMENT PROCEDURES:	COMPLIANCE WITH THE “INTERNATIONAL CODE OF BREAST-MILK SUBSTITUTES”
STEP 1	<ul style="list-style-type: none"> ■ Comply fully with the “<i>International Code of Marketing of Breast-Milk Substitutes</i>” 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. 	<ul style="list-style-type: none"> ■ Have a written infant feeding policy that is routinely communicated to all staff, health care providers, and volunteers.
STEP 2	<ul style="list-style-type: none"> ■ Ensure that staff has sufficient knowledge, competence, and skills to support breastfeeding. 	<ul style="list-style-type: none"> ■ Ensure all staff, health-care providers, and volunteers have the knowledge and skills necessary to implement the infant feeding policy.
FOCUS:	KEY CLINICAL PRACTICES:	
STEP 3	<ul style="list-style-type: none"> ■ Discuss the importance and management of breastfeeding with pregnant women and their families. 	<ul style="list-style-type: none"> ■ Inform pregnant women and their families about the importance and process of breastfeeding.
STEP 4	<ul style="list-style-type: none"> ■ Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth. 	<ul style="list-style-type: none"> ■ Place babies in uninterrupted skin-to-skin contact with their mothers immediately following birth for at least an hour 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.

FOCUS:	KEY CLINICAL PRACTICES:	
STEP 5	<ul style="list-style-type: none"> Support mothers to initiate and maintain breastfeeding and manage common difficulties. 	<ul style="list-style-type: none"> Assist mothers to breastfeed and maintain lactation should they face challenges (including separation from their infants).
STEP 6	<ul style="list-style-type: none"> Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated. 	<ul style="list-style-type: none"> Support mothers to exclusively breastfeed for the first six months unless supplements are medically indicated.
STEP 7	<ul style="list-style-type: none"> Enable mothers and their infants to remain together and to practice rooming-in 24 hours a day. 	<ul style="list-style-type: none"> Facilitate 24-hour rooming-in for all mother-infant dyads: mothers and infants remain together.
STEP 8	<ul style="list-style-type: none"> Support mothers to recognize and respond to their infants' cues for feeding. 	<ul style="list-style-type: none"> Encourage responsive, cue-based breastfeeding. Encourage sustained breastfeeding beyond six months with the appropriate introduction of complementary foods.
STEP 9	<ul style="list-style-type: none"> Counsel mothers on the use and risks of feeding bottles, teats, and pacifiers. 	<ul style="list-style-type: none"> Support mothers to feed and care for their breastfeeding babies without the use of artificial teats or pacifiers (dummies or soothers).
STEP 10	<ul style="list-style-type: none"> Coordinate discharge so that parents and their infants have timely access to ongoing support and care. 	<ul style="list-style-type: none"> 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.

Sources: World Health Organization; United Nations Children's Fund. Protecting, promoting, and supporting breastfeeding in facilities providing maternity and newborn services: the revised Baby-friendly Hospital Initiative 2018. Implementation guidance [Internet]. Geneva (CH): World Health Organization; 2018; and Breastfeeding Committee for Canada. The BFI 10 Steps and WHO Code outcome indicators for hospitals and community health services. [place unknown]: Breastfeeding Committee for Canada; 2017.

Note: **Table 6** reflects revisions made by WHO/UNICEF in 2018 to the “*Ten Steps to Successful Breastfeeding*”. Differences in the interpretation of the “*Ten Steps to Successful Breastfeeding*” and “*The BFI 10 Steps and WHO Code Outcome Indicators for Hospitals and Community Health Services*” reflect the continuum of care within and beyond hospitals in Canada. Developed by the BCC, “*The BFI Ten Steps and WHO Code Outcome Indicators for Hospital and Community Health Services*” describe the 10 standards for Canadian health facilities to provide essential supports to optimize breastfeeding outcomes for infants and breastfeeding persons. It was published in 2017 prior to the WHO/UNICEF’s revisions to the “*Ten Steps to Successful Breastfeeding*” (7, 21).

Practice Recommendations

RESEARCH QUESTION #1:

What are effective tools, processes, and strategies used by nurses, the interprofessional team, and peers for assessing pregnant and postpartum persons to increase the initiation, exclusivity, and continuation of breastfeeding?

Assessment Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Birth to Two Years, or Longer)

RECOMMENDATION 1.1:

Assess the breastfeeding process, using validated and reliable tools, during pregnancy and at key stages of lactogenesis, including the following:

1. During Stage I, (i.e., within the first 24 hours postpartum and prior to discharge from the childbirth setting), to support breastfeeding initiation.
2. During the transition from Stage I to Stage II, (i.e., between days two to eight postpartum), to support the significant increase in breast milk volume.
3. During Stage II and Stage III, (from approximately day nine postpartum and onwards) to support the maintenance of breast milk production, as long as breastfeeding continues.

Level of Evidence for Summary: IV

Quality of Evidence for Summary: Moderate = 4

Discussion of Evidence:

Evidence Summary

The assessment of the breastfeeding process is comprehensive and occurs throughout the perinatal period (16). It begins **prenatally** and continues to **postpartum**, following the different stages of lactogenesis^G (described in **Table 7**). The assessment of the breastfeeding process incorporates a holistic person-centred approach that recognizes individual physiological and psychological factors that affect the breastfeeding dyad (16, 18, 28). The findings of an assessment can be used to support the needs of the breastfeeding dyad and indicate where further interventions may be warranted (16, 18, 28).

Each of the components of the breastfeeding process is discussed below, but these factors can be assessed simultaneously and are often inter-related. When available, validated and reliable^G tools should be used to assess breastfeeding; three examples of breastfeeding assessment tools are described in **Table 8**.

Assessing Components of the Breastfeeding Process Prenatally

Breastfeeding assessment begins prenatally and includes components such as a person's breastfeeding intentions, attitudes, knowledge, level of breastfeeding self-efficacy (BSE) or confidence, and social support (16, 18). Through prenatal assessments, the likelihood of continued breastfeeding can be determined, and potential problems and challenges can be identified (16, 18). This provides an opportunity to (a) address concerns; (b) positively impact breastfeeding intentions and self-efficacy; and (c) start breastfeeding education, either individually or through prenatal classes (16, 18).

Note: The evidence on breastfeeding assessment was limited to participants who were postpartum persons; they did not include pregnant participants. However, researchers identified that prenatal assessment should be included to support the breastfeeding process.

Assessing Components of the Breastfeeding Process in the Postpartum

Positioning and Latch

Positioning and latch are strongly associated with successful breastfeeding and must be assessed routinely (16, 28). Following delivery—and prior to discharge from the hospital or other childbirth settings^G—a full breastfeeding session must be observed and assessed to determine the quality of the positioning and latch, including the breastfeeding person's level of comfort (16, 18).

Breast Milk Supply

The pattern of breastfeeding needs to be assessed in order to determine breast milk supply and address any perceptions of IMS (including colostrum supply) as concerns about IMS are the most common cause of breastfeeding cessation globally (16, 18, 28). As part of the assessment process, unrestricted frequency and duration of feeds should be emphasized to support the establishment of lactation, including nighttime feeds, when prolactin^G levels often are at their highest in the first eight weeks (18).

Any potential risk factors for reduced breast milk supply or delayed onset of the establishment of milk supply as part of lactogenesis should be part of an assessment. This includes a separation of the breastfeeding dyad due to illness or clinical investigations, formula supplementation use, caesarean birth, obesity, or breast surgery (including reduction or augmentation) (16, 18). [Appendix F](#) includes examples of other risk factors for breast milk supply and delayed lactogenesis.

Breast Milk Transfer

An assessment of breast milk transfer includes the infant and the breastfeeding person because effective milk transfer is influenced by the breastfeeding dyad. For the infant, the quality of the suck–swallow pattern should be part of a breastfeeding assessment (16, 28). A lack of coordinated suck–swallow pattern or an inadequate attachment to the breast due to ineffective positioning and latch can adversely impact milk transfer. For the breastfeeding person, breast milk transfer is influenced by breast stimulation through sucking and the milk ejection reflex^G. Any risk factors for adequate breast milk transfer—such as plugged ducts, nipple pain, or flat or inverted nipples—should be assessed (16, 28).

Recommendation 2.3 includes a discussion of harms associated with ineffective positioning and latch, such as nipple pain and trauma.

Breastfeeding Concerns

Persons who are breastfeeding for the first time or with a history of breastfeeding challenges should be assessed for any questions or concerns (16, 18). Any possible or actual breastfeeding problems should be included in the assessment, such as perceived or actual IMS, nipple pain, or ineffective positioning and latch, to support breastfeeding knowledge and confidence levels (16).

Support Network

A person's support network can positively influence the intention, initiation, exclusivity, and continuation of breastfeeding (18). When a partner, or to a lesser degree, other family members are not supportive of breastfeeding, negative outcomes, including lower rates of initiation, may occur (16, 18).

Breastfeeding Self-Efficacy

BSE or confidence should be assessed to determine a person's perceived abilities to breastfeed (16–18). An assessment of BSE, using a validated and reliable tool, can predict the person's decision to breastfeed, the amount of support required, influencing thoughts and self-beliefs that enhance or defeat breastfeeding attempts, and response to challenges (18). Early in the postpartum period, an assessment of BSE creates an opportunity to identify and address any breastfeeding concerns. Low levels of BSE are associated with an increased risk of breastfeeding cessation and perceived IMS, potentially leading to an unnecessary use of formula supplementation or products to stimulate breast milk supply (18). An example of a tool measuring BSE (The Breastfeeding Self-Efficacy Scale [BSES]) (29) is described in **Table 8**.

Risk of Mood Disorders

Screening for a risk of perinatal mood disorders should be included as part of a breastfeeding assessment as perinatal depression and/or anxiety are common and positively associated with breastfeeding cessation (16, 18). Breastfeeding persons, especially primiparas^G, may have increased levels of stress and risk of mood disorders due to role transitioning to parenthood, personal or family expectations, and lack of experience with breastfeeding (16–18).

Assessment of the Newborn in Relation to Breastfeeding

A physical assessment of the newborn includes assessing the ability to latch and coordinate sucking, swallowing, and breathing (28). Serial assessments of infant parameters—including output, behaviour, growth, and weight—must be conducted routinely over time as the newborn develops; this will indicate sufficient breast milk transfer and achievement of developmental milestones (18, 28).

The oral cavity should be examined for symmetry and any signs of limited tongue mobility (i.e., ankyloglossia^G, known as “tongue-tie”) (28). Based on the findings, a follow-up assessment by a physician may be indicated (28).

Appendix E includes a description of ankyloglossia and maxillary ties (also known as lip-ties), their impact on breastfeeding, and an overview of frenotomy.

Assessment of the Breastfeeding Process Using Valid and Reliable Tools

To ensure a consistent and systematic approach to assessment, reliable and valid tools are recommended (16, 18). **Table 8** describes three examples of tools from the evidence that can be used to assess components of the breastfeeding process. The tools support consistency among nurses, the interprofessional team, and peers in the assessment of the breastfeeding dyad. The results of the tools can identify situations where further breastfeeding support and assistance may be indicated to support initiation, exclusivity, and continuation (16).

Assessment of Breastfeeding at Key Stages of Lactogenesis

Following childbirth, breastfeeding assessments conducted by nurses, the interprofessional team, and peers should follow the stages of lactogenesis until six months or later (as needed) (16, 18, 28). **Table 7** describes the stages of lactogenesis from breast milk onset to cessation.

Table 7: Stages of Lactogenesis

STAGE OF LACTOGENESIS	DESCRIPTION
Stage I (secretory differentiation)	Beginning in mid-pregnancy to day two or day three postpartum, the breasts develop the capacity to secrete breast milk, including the secretion of colostrum.
Stage II (secretory activation)	Beginning on day two or day three postpartum until day eight, breast milk volume increases rapidly and then abruptly levels off.
Stage III (galactopoiesis)	From approximately day nine postpartum and onwards, the volume of breast milk produced is maintained through a supply and demand mechanism.
Stage IV (involution)	Involution occurs, on average, 40 days after the last breastfeed, when breast milk secretion ceases.

Source: Wambach K, Riordan J. Breastfeeding and human lactation. Enhanced 5th ed. Burlington (MA): Jones & Bartlett Learning; 2014.

Assessments should be conducted as breast milk supply develops and establishes (16, 18, 28). In this Guideline, the stages of lactogenesis are used to indicate the process of lactation and to support standardized timelines for assessment. Each of the primary studies cited supported assessment throughout lactogenesis, but did not use consistent language. However, the definitions were congruent with the stages of lactogenesis.

To support breastfeeding initiation and stage I of lactogenesis, assessments should occur within the first 24 hours following childbirth and prior to discharge from the childbirth setting to support breastfeeding initiation (16, 18, 28). Early follow-up assessment post-discharge from the birth setting, should occur in primary or community care, an outpatient breastfeeding clinic, or the breastfeeding person's home. This assessment supports breastfeeding beyond the initial days as breast fullness and increasing milk supply occurs, as per Stage II of lactogenesis (18). This provides a timely opportunity to discuss any breastfeeding concerns and determine appropriate interventions, as needed (18). As part of Stage III of lactogenesis, assessment up to six months or longer, as needed, supports exclusive and continued breastfeeding, with the introduction of complementary foods and other liquids (16, 18, 28).

Benefits and Harms

Benefits of assessments using the LATCH tool (or other valid instruments) include a reduction in non-exclusive breastfeeding through corrective interventions and early identification of breastfeeding dyads who need additional breastfeeding support, including from a lactation consultant (28). **Table 8** describes the LATCH tool in detail.

Values and Preferences

The RNAO expert panel attributed a higher value to a breastfeeding assessment that is comprehensive and recognizes the significance of the breastfeeding dyad, the physiological importance of breastfeeding, and the impact of psychosocial supports, (partners and other family members). Ongoing assessments to six months or longer are seen as a valuable strategy to support exclusive and continued breastfeeding when many persons stop breastfeeding.

Practice Notes

Table 8 lists three examples of validated and reliable assessment tools that include components of the breastfeeding process, including positioning and latch, breast milk supply, and BSE (16, 18, 29).

- The LATCH Breastfeeding Assessment Tool assesses five key components of breastfeeding, including positioning and latch and the level of comfort with latching (30).
- The Hill & Humenick (H & H) Lactation Scale assesses positioning, latch, and milk supply (31).
- The Breastfeeding Self-Efficacy Scale-Short Form (BSES-SF) assesses BSE (29).

Table 8: Examples of Breastfeeding Assessment Tools from the Systematic Review

	LATCH BREASTFEEDING ASSESSMENT TOOL	HILL & HUMENICK (H & H) LACTATION SCALE	BREASTFEEDING SELF-EFFICACY SCALE-SHORT FORM (BSES-SF)
Purpose	<ul style="list-style-type: none"> ■ To standardize (a) a comprehensive and systematic assessment at the point of care and (b) charting or documentation by a nurse or a member of the interprofessional team. ■ The tool supports consistent evaluation measures of an observed breastfeeding session and any teaching provided in response to the total score. 	<ul style="list-style-type: none"> ■ To measure perceived breast milk supply following childbirth and up to eight weeks after delivery 	<ul style="list-style-type: none"> ■ To measure perceived ability to breastfeed and predict breastfeeding intention and duration as a health behaviour prenatally and up to six months postpartum.

	LATCH BREASTFEEDING ASSESSMENT TOOL	HILL & HUMENICK (H & H) LACTATION SCALE	BREASTFEEDING SELF-EFFICACY SCALE-SHORT FORM (BSES-SF)
Components of the tool	<ul style="list-style-type: none"> ■ Five subscales that denote key components of breastfeeding. ■ Uses an acronym (LATCH): <ul style="list-style-type: none"> L = how well the baby latches. A = audible number of swallows. T = type of nipple. C = comfort levels with breastfeeding. H = amount of assistance required when positioning the infant at the breast. 	<ul style="list-style-type: none"> ■ Three subscales: <ol style="list-style-type: none"> 1. Level of commitment to breastfeeding. 2. Satisfaction. 3. Perceived infant satiety post-feed. ■ A 20-item self-reported instrument that uses a 7-point Likert scale where 1 = strongly disagree and 7 = strongly agree 	<ul style="list-style-type: none"> ■ A positively worded 14-item scale completed by selfreporting. ■ Uses a 5-point Likert scale where 1 = not at all confident and 5 = always confident. ■ Scale items include the following: <ul style="list-style-type: none"> <input type="checkbox"/> determining whether the infant is getting enough breast milk, <input type="checkbox"/> coping successfully with breastfeeding, and <input type="checkbox"/> managing to keep up with the infant’s breastfeeding demands.
Scoring	<ul style="list-style-type: none"> ■ Tool assigns a numerical score of 0, 1, or 2 to the five elements of the tool. ■ Total score obtained from the tool is 0–10. Modeled on the Apgar scoring system (Appearance, Pulse, Grimace, Activity, and Respiration), where a higher score indicates improved results. ■ A total score below 10 indicates additional support is recommended. 	<ul style="list-style-type: none"> ■ Higher scores indicate higher levels of commitment, satisfaction, and perceived infant satiety. ■ Total scores range from 20 to 140. 	<ul style="list-style-type: none"> ■ Total score range is 15–70. Higher scores indicate likelihood to succeed in breastfeeding as a result of a higher level of confidence. ■ Higher scores are significantly associated with reduced risk of breastfeeding cessation before six months when measured at 72 hours postpartum (15, 16). ■ Lower scores indicate a need for additional early interventions to enhance BSE.

	LATCH BREASTFEEDING ASSESSMENT TOOL	HILL & HUMENICK (H & H) LACTATION SCALE	BREASTFEEDING SELF-EFFICACY SCALE-SHORT FORM (BSES-SF)
<p>Correlation with breastfeeding outcomes or other assessment tools</p>	<ul style="list-style-type: none"> ■ There is a weak positive correlation between the mean LATCH and BSES-SF scores in the early postpartum (14). ■ There is a significant relationship between time of breastfeeding initiation and mean LATCH scores (14). For example, persons who breastfed within the first 30 minutes following childbirth had higher LATCH scores than those who breastfed within the first one to four hours (14). 	<ul style="list-style-type: none"> ■ High H & H Lactation Scale scores are associated with high BSES-SF scores (14). 	<p>Higher mean BSES-SF scores are:</p> <ul style="list-style-type: none"> ■ Positively associated with higher levels of education and attendance at prenatal breastfeeding classes (14). ■ A significant association was found with parity, as persons who have previously breastfed have higher mean BSES-SF scores (14). ■ Lower BSES-SF scores are associated with the following: <ul style="list-style-type: none"> □ increased use of formula use or a galactagogue (such as domperidone); and □ a lack of support from a nurse or member of the interprofessional team, or from the person’s partner, family, or social network (15, 16).

	LATCH BREASTFEEDING ASSESSMENT TOOL	HILL & HUMENICK (H & H) LACTATION SCALE	BREASTFEEDING SELF-EFFICACY SCALE-SHORT FORM (BSES-SF)
Reliability and validity	<ul style="list-style-type: none"> High reliability, as it consistently measures LATCH components. 	<ul style="list-style-type: none"> Subscales show moderate to high levels of internal consistency (reliability) and predictive validity. 	<ul style="list-style-type: none"> A scale with high levels of validity and reliability.
Limitations	<ul style="list-style-type: none"> Use of the tool beyond hospital discharge following childbirth has not been studied. The tool is designed to support consistent documentation. To be effective, results must be shared with the breastfeeding person to support their needs. 	<ul style="list-style-type: none"> The tool was not found to differentiate between combination feeding (i.e., breastfeeding and formula feeding) and exclusive breastfeeding, as exclusive and combination feeding scored similarly. Combination feeding methods are associated with decreased exclusive and sustained breastfeeding. 	<ul style="list-style-type: none"> Study participants were homogenous (e.g., married Caucasian Canadians). To increase the use of the scale, it needs to be tested at different time points in the perinatal period on a more diverse sample. Note: Subsequent to the publication of this study, the BSES-SF has been translated into diverse languages and testing of the scale with diverse maternal populations.

Sources: Dennis CL, Faux S. Development and psychometric testing of the breastfeeding self-efficacy scale. Res Nurs Health. 1999 Oct;22(5):399–409; Jensen D, Wallace S, Kelsay P. LATCH: a breastfeeding charting system and documentation tool. J Obstet Gynecol Neonatal Nurs. 1994;23(1):27–32; and Hill PD, Humenick SS. Development of the H & H Lactation Scale. Nurs Res.1996;45(3):136–40.

Supporting Resources

RESOURCE	DESCRIPTION
EXAMPLES OF ASSESSMENT TOOLS	
<p>Sartorio BT, Coca KP, Marcacine KO, et al. Breastfeeding assessment instruments and their use in clinical practice [Internet]. <i>Rev Gaúcha Enferm.</i> 2017 Mar;38(1):e64675. Available from: http://www.scielo.br/pdf/rgenf/v38n1/en_0102-6933-rgenf-1983-144720170164675.pdf</p>	<ul style="list-style-type: none"> ■ A literature review of breastfeeding assessment tools used to assess the risk of early weaning (Breastfeeding Attrition Prediction Tool) and the perception/behaviour of persons during breastfeeding (BSES-SF and the Iowa Infant Feeding Attitudes Scale).
<p>Ingram J, Johnson D, Copeland M, et al. The development of a new breast feeding assessment tool and the relationship with breast feeding self-efficacy. <i>Midwifery.</i> 2015;31(1): 132–37.</p>	<ul style="list-style-type: none"> ■ The objective of this study was to develop a breastfeeding assessment tool to facilitate advice on optimum positioning and latch and to describe the changes seen following the release of a tongue-tie. ■ The Bristol Breastfeeding Assessment Tool (BTAT) can be used in research to improve advice on BSE. It also can be used clinically.
<p>Nehring-Gugulska M, Zukowska-Rubik M, Stonnicka-Stolarska P, et al. Protocol of sucking skills of nursing infant [Internet]. <i>Postepy Neonatologii.</i> 2014;1(20):53–65 (fragments). Available from: http://www.kobiety.med.pl/cnol/images/cnol/Publikacje/protocol_of_sucking.pdf</p>	<ul style="list-style-type: none"> ■ An assessment tool to assess sucking skills of breastfeeding infants in the early postpartum and after discharge in the first days and weeks.
<p>Breastfeeding Intake Assessment [Internet]. Toronto (ON): Hospital for Sick Children (Sick Kids); c1994–2014. Available from: http://www.sickkids.ca/breastfeeding-program/education/index.html</p>	<ul style="list-style-type: none"> ■ An online breastfeeding educational series for health-care providers, including a module on breastfeeding assessment for positioning, latch, and milk transfer.

NEWBORN BREASTFEEDING ASSESSMENT

Aby J. Photo Gallery [Internet]. Palo Alto (CA): Stanford University Newborn Nursery; c2017. Available from: <http://med.stanford.edu/newborns/professional-education/photo-gallery.html>

- A photo gallery of physical findings in the neonate for educational purposes from Stanford University’s School of Medicine. Includes a series of images of the mouth and neuro/reflexes (e.g., sucking and rooting) relevant for breastfeeding assessment.

Tuthill EL, McGrath JM, Graber M, et al. Breastfeeding self-efficacy: a critical review of available instruments. *J Hum Lact.* 2016;32(1): 35–45.

- A systematic review that identifies, compares, and critically reviews BSE instruments.
- The review concludes that there are several valid BSE instruments available that should be implemented in clinical settings, including the BSES and BSES-SF.
- Criteria for instrument selection should be based on variables such as time available, timing during pregnancy and postpartum, and area of primary interest.

RESEARCH QUESTION #2:

What are effective interventions or programs used by nurses, the interprofessional team, and peers to increase the initiation, exclusivity, and continuation of breastfeeding?

Interventions to Support Initial Breastfeeding (Birth to the First Hour of Life, or Once Clinically Stable)

RECOMMENDATION 2.1:

Facilitate skin-to-skin contact with the breastfeeding dyad immediately following childbirth or once clinically stable.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 2; Moderate = 1

Discussion of Evidence:

Evidence Summary

Skin-to-skin contact is the placement of a newborn—naked or wearing a diaper and cap—in a prone position on a person’s bare chest, covered with pre-warmed blankets to prevent heat loss (32). Through skin-to-skin contact, the breastfeeding dyad maintains close contact (32).

Skin-to-skin contact is one of the principles of WHO/UNICEF’s “*Ten Steps to Successful Breastfeeding*” and supports breastfeeding initiation and exclusivity (32 - 33). (See **Table 6** for more details). While skin-to-skin contact can involve a partner or others, evidence in this summary includes situations involving the breastfeeding dyad only in which the dyad was clinically stable (i.e., the infant was born healthy at term or late preterm with no meconium-stained amniotic fluid or cardiac or respiratory distress, and weighing 2500 grams or more; the breastfeeding person’s vital signs and postpartum blood loss were within normal limits) (32 - 33). Examples of studies on skin-to-skin contact involving partners are included under Supporting Resources below.

Skin-to-skin contact has a positive effect on breastfeeding initiation and exclusivity up to six months compared to standard contact (32). Significantly fewer breastfeeding problems, including positioning and latch or perceived IMS, were reported (32). Improved levels of breastfeeding confidence, expanded sense of mastery of breastfeeding, heightened responsiveness to infant feeding cues, increased bonding, and stronger attachment are evidence when skin-to-skin contact occurred immediately following childbirth (32). Newborns were more likely to have a successful first breastfeed as measured by readiness to feed, rooting reflex, latching, and suckling pattern (32). Their mean glucose levels were higher after skin-to-skin contact (32).

Following caesarean births, breastfeeding persons reported that earlier skin-to-skin infant contact created a more relaxed approach to breastfeeding and their experiences of latching their infants were easier (34). Newborn temperatures immediately following skin-to-skin contact for one hour post-caesarean birth demonstrated that there is no increased risk of transient hypothermia (35). More research in this area is required (32).

Benefits and Harms

Skin-to-skin contact avoids separating the newborn from the breastfeeding person and offers beneficial physiological sensory stimulation including touch, warmth, and odour (32). It triggers an increase in oxytocin^G levels which shortens placenta delivery time and reduces postpartum hemorrhage (33). Skin-to-skin contact stabilizes the infant's body temperature through an increase in skin temperature of the breast, which effectively acts as a radiant warmer (32). For newborns who received skin-to-skin contact in an operating room setting during a caesarean birth, no significant differences in Apgar scores or neonatal intensive care unit (NICU) admissions have been seen: their vital signs were stable, with lower heart and respiratory rates, and their blood glucose levels measured within normal limits (32, 34).

A rare catastrophic event for the newborn associated with early skin-to-skin contact is sudden unexpected postnatal collapse (SUPC) (32). It can occur during the first breastfeeding attempt in healthy neonates born at or after 35 weeks gestation (32). In an instance of SUPC, the infant requires cardiopulmonary resuscitation and mechanical ventilation to avoid death or encephalopathy (36). The incidence of SUPC ranges are 2.6–5.0 per 100,000 live births and the mortality rates are from 0–1.1 per 100,000 live births (32).

The evidence suggests regular assessments to reduce the risk of SUPC including positioning (the mouth and nose should be visible and unobstructed), skin colour, breathing effort and rate, oxygen saturation levels, and subaxillary temperature (36). Acute care settings using skin-to-skin contact require standards of practice for assessment of SUPC risk, including safe positioning. Training on managing any signs of instability occurring during skin-to-skin contact—such as SUPC caused by airway obstruction and asphyxia—is indicated (32). Studies examining SUPC events during skin-to-skin contact were not found. Further research to determine safety and risks is required.

Values and Preferences

The RNAO expert panel attributed a higher value to skin-to-skin contact to support close contact immediately following childbirth, bonding, attachment, and breastfeeding initiation.

Practice Notes

The optimal length of skin-to-skin contact immediately following childbirth has not been established as examples of time spent varied from 35 to 60 minutes or greater (32 -33). No clear benefits were seen when the duration of skin-to-skin contact was more or less than one hour (32).

There is insufficient evidence on the optimal timing of skin-to-skin contact and breastfeeding initiation (32). In some studies, skin-to-skin contact occurred immediately following birth and all routine newborn procedures—such as height and weight measurements, eye prophylaxis, and vitamin K injection—were delayed until after skin-to-skin contact and/or after completion of the first feed (32). In other studies, skin-to-skin contact was delayed briefly or for up until 30 minutes or longer following routine procedures, bathing, and physical examination (32).

Supporting Resources

RESOURCE	DESCRIPTION
SKIN-TO-SKIN RESOURCES	
World Health Organization. WHO recommendations: intrapartum care for a positive childbirth experience [Internet]. Geneva (CH): World Health Organization; 2018. Available from: http://apps.who.int/iris/bitstream/10665/260178/1/9789241550215-eng.pdf?ua=1	<ul style="list-style-type: none"> ■ Recommendation 48 in this resource promotes skin-to-skin contact within the first hour of birth for newborns without complications to facilitate breastfeeding.
Learning to Breastfeed [Internet]. Toronto (ON): City of Toronto; c1998–2018. Available from: https://www.toronto.ca/community-people/children-parenting/pregnancy-and-parenting/breastfeeding/breastfeeding-your-baby/learning-to-breastfeed/	<ul style="list-style-type: none"> ■ Web-resource on skin-to-skin contact, including a video demonstrating how to maintain skin-to-skin contact during admission to a postpartum unit.
Research on Skin-to-Skin Contact [Internet]. London (UK): UNICEF United Kingdom; c2018. Available from: https://www.unicef.org.uk/babyfriendly/news-and-research/baby-friendly-research/research-supporting-breastfeeding/skin-to-skin-contact/	<ul style="list-style-type: none"> ■ A list of a selection of studies that examine the impact of skin-to-skin contact on breastfeeding.
SKIN-TO-SKIN CONTACT AND CAESAREAN BIRTHS	
Crenshaw JT. Healthy birth practice #6: keep mother and baby together— it’s best for mother, baby, and breastfeeding. <i>J Perinat Educ.</i> 2014;23(4):211–7.	<ul style="list-style-type: none"> ■ A review article examining the benefits of skin-to-skin contact immediately following vaginal births as well as during and after caesarean births for all stable dyads, regardless of feeding preference.
Skin-to-skin C-sections promote health, bonding [Video]. Toronto (ON): [Sunnybrook Health Sciences Centre]; c2018 (updated 2014 May 7). Available from: https://sunnybrook.ca/media/item.asp?i=1125	<ul style="list-style-type: none"> ■ A short video presentation from Sunnybrook Health Sciences Centre in Toronto, Ontario, Canada, which offers skin-to-skin contact during caesarean birth, when requested and as clinically appropriate. ■ The video features Dr. Jon Barrett, Chief, Maternal-Fetal Medicine at Sunnybrook Health Sciences Centre.

SKIN-TO-SKIN CONTACT AND CAESAREAN BIRTHS

Elsaharty A, McConachie I. Skin to skin: a modern approach to caesarean delivery. *J Obstet Anaesthesia Critical Care*. 2017;7(1):13–9.

- A review article examining the benefits of skin-to-skin contact for the breastfeeding dyad. It also considers patient suitability and the practicalities of implementing skin-to-skin contact, including staffing and care of the baby.
- Implications for anesthesia care providers in the operating room are discussed.

BENEFITS OF SKIN-TO-SKIN CONTACT FOR PARTNERS

Shorey S, He HG, Morelius E. Skin-to-skin contact by fathers and the impact on infant and paternal outcomes: an integrative review. *Midwifery*. 2016;40:207–17.

- The review promotes skin-to-skin contact with a newborn’s father, especially when the breastfeeding person is not available due to situations such as emergencies or caesarean births.

Anderzén-Carlsson A. Father–infant skin-to-skin contact appears to be beneficial, however paternal experiences of this need to be explored. *Evid Based Nurs*. 2017;20(4):112.

- A study determines that skin-to-skin contact with fathers is feasible in clinical settings and has no adverse effects.
- Skin-to-skin contact with fathers is a valuable alternative, although not all fathers wanted to engage in skin-to-skin for reasons such as fear of hurting the infant, belief that it was not needed, or because of a preference to use an incubator instead (where indicated).

SUDDEN UNEXPECTED POSTNATAL COLLAPSE

Herlenius E, Kuhn P. Sudden unexpected postnatal collapse of newborn infants: a review of cases, definitions, risks, and preventive measures. *Transl Stroke Res*. 2013;4(2):236–47.

- A literature review examining SUPC and newborns.
- The review includes three cases of SUPC that occurred during skin-to-skin contact in the prone position.

Ludington-Hoe SM, Morgan K. Infant assessment and reduction of sudden unexpected postnatal collapse risk during skin-to-skin contact. *NAINR*. 2014;14(1):28–33.

- A rapid newborn assessment tool (known as RAPP: **r**espiratory, **a**ctivity, **p**erfusion, and **p**osition) developed to evaluate newborn physiologic status and risk of SUPC.

Interventions to Support Initial Breastfeeding (Birth to the First Hour of Life, or Once Clinically Stable)

RECOMMENDATION 2.2:

Support the early initiation of breastfeeding, within one hour of childbirth or once the breastfeeding dyad is clinically stable, through multicomponent perinatal interventions including:

- prenatal education and
- immediate postpartum bedside assistance.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1; Moderate = 4

Discussion of Evidence:

Evidence Summary

Breastfeeding initiation is a global goal set by WHO and is critical to the health of all infants (19). Breastfeeding persons must receive support and assistance to initiate breastfeeding, ideally within one hour of childbirth, irrespective of the mode of delivery (i.e., vaginal or caesarean birth) assuming consent and that the breastfeeding dyad is clinically stable (19). The WHO/UNICEF’s “*Ten Steps to Successful Breastfeeding*” supports breastfeeding initiation (Step 5) as a key clinical practice (19). (See **Table 6** for more details). Research indicates rates of early breastfeeding initiation are increased in BFI-designated settings, compared to non-designated ones (19).

Multicomponent Interventions to Support Early Breastfeeding Initiation

To support breastfeeding initiation, multicomponent interventions are needed beginning in the prenatal period and continuing into the immediate postpartum that are offered in a combination of settings (i.e., health services, the community, and the home) by nurses, the interprofessional team, and/or peers (19, 34, 37–39). This contrasts with single interventions offered in one setting, which were not found to be effective in supporting breastfeeding initiation (19, 34, 37–39).

Prenatal Education

During pregnancy, effective interventions include support, education (using brochures or other written materials), implementation of BFI principles, breastfeeding counselling⁶, home visits, telephone calls, prenatal classes, mass media campaigns, and breastfeeding training for partners and grandmothers (37–38). Group counseling and education by nurses and the interprofessional team, in addition to BFI support, had the largest effect on rates of breastfeeding initiation within the first hour (19).

Immediate Postpartum Bedside Assistance

In the immediate postpartum period, assistance at the bedside by nurses, members of the interprofessional team (including LCs), and peers was found to be effective at supporting early initiation (19, 34, 37-38). The impact of assistance on rates of breastfeeding initiation was supported by the integration of other interventions such as skin-to-skin contact, breastfeeding counselling, and ongoing support prior to and following discharge after childbirth (19, 34, 37-38).

See **Recommendation 2.1** for a discussion on the importance of skin-to-skin contact and breastfeeding initiation.

Benefits and Harms

For persons who have a planned or unplanned caesarean birth, breastfeeding initiation is typically delayed until after a transfer to a post-anesthesia recovery unit (19, 38). Under these circumstances, delayed initiation may lead to subsequent lactation challenges and an increased likelihood of commercial formula introduction (34). Strategies to keep the breastfeeding dyad together to support initiation, such as skin-to-skin contact, should be implemented where possible.

Values and Preferences

The RNAO expert panel attributed a higher value to breastfeeding initiation to influence exclusive and continued breastfeeding. The breastfeeding person's high satisfaction with succeeding at initiation and their perception of support during initiation can positively influence breastfeeding exclusivity and continuation.

Practice Notes

To facilitate breastfeeding initiation, strategies incorporated by nurses, the interprofessional team, and peers should seek to support spontaneous and innate newborn behaviours, feeding cues, reflexes, and the normal physiological transition from birth to breastfeeding (40). Approaches should be holistic and centred on the needs of the breastfeeding dyad, which are led by the newborn and guided by the breastfeeding person (40).

Examples of strategies to support breastfeeding initiation include the following:

- Encourage the breastfeeding person to approach breastfeeding initiation as an introduction with no expectations about whether the newborn latches, the length or timing of the feeding, or the volume of colostrum taken.
- Provide a calming presence and help the breastfeeding person find a position that is comfortable.
- Avoid unnecessary directions or interventions, such as manually attaching the newborn to the breast through the manipulation of the newborn's position and the breast tissue.
- Avoid swaddling or restraining the newborn's hands in order to support normal newborn breast-seeking behaviour through hand movements (i.e., hand-to-hand or hand-to-mouth).
- Educate the breastfeeding person on infant feeding cues as a sign of readiness to feed. This includes being in an alert state, bringing hands to mouth, making sucking sounds, moving towards the breast and finding the nipple, and opening the mouth wide.
- Assess for situations involving the breastfeeding dyad where interventions are indicated, such as anatomical abnormalities, prematurity, or a history of breast surgery. In the absence of any factors complicating breastfeeding initiation, refrain from hands-on support or assistance unless requested by the breastfeeding person.
- Provide support that empowers the breastfeeding person based on their needs. Offer clear information and directive assistance only as requested. Avoid statements that may seem confusing, judgmental, or disempowering to the breastfeeding person.

- Suggest positions that avoid pressure on the abdomen for persons who have had a caesarean birth including football, side-lying, or cradle hold. Assistance may be required to support the infant's weight or pillows may be used. Manage post-operative pain following a caesarean birth to support breastfeeding initiation.
- Identify risk factors for breastfeeding initiation and early cessation, including having multiple intrapartum interventions, such as induced labour, opioid pain medications, and emergency caesarean birth. These interventions can negatively impact prolactin levels.
- Be aware that breastfeeding initiation can be influenced by the support and attitudes of partners, family members, and peers. **Recommendation 2.11** includes further discussion on the importance of family support in breastfeeding.
- Support the integration of doulas—such as relatives or friends selected by the breastfeeding person—during labour and postpartum. This is particularly important for primiparas, as doula support is positively associated with breastfeeding outcomes among this group, including increased initiation, exclusivity to six weeks, and fewer breastfeeding problems when compared to controls (34, 37, 40–44).

Recommendation 2.7 describes teaching all breastfeeding persons to hand express breast milk, including in cases where initiation is not possible due to causes such as separation of the breastfeeding dyad.

Supporting Resources

RESOURCE	DESCRIPTION
INTERVENTIONS TO SUPPORT BREASTFEEDING INITIATION	
Cantrill RM, Creedy DK, Cooke M, et al. Effective suckling in relation to naked maternal-infant body contact in the first hours of life: an observation study. <i>BMC Pregnancy Childbirth</i> . 2014;14:20.	<ul style="list-style-type: none"> ■ A study examining strategies to support breastfeeding initiation. ■ Effective practices included (a) positioning the infant's chin under the breast to encourage the infant to grasp the nipple and begin to suck; (b) possibly naked newborn contact (i.e., avoiding bundling); (c) watching for and supporting signs of newborn feeding behaviours (e.g., turning head, nudging breast with chin, and suckling at breast); and (d) avoiding any unnecessary naso-oropharyngeal suctioning, unless indicated.
Morton J. Successful Breastfeeding Begins Right at Birth [Video]. [place unknown]: Stanford Medicine; c2017. Available from: http://med.stanford.edu/newborns/professional-education/breastfeeding/breastfeeding-in-the-first-hour.html	<ul style="list-style-type: none"> ■ A video that includes demonstrations of breastfeeding initiation within the first hour of birth.

INTERVENTIONS TO SUPPORT BREASTFEEDING INITIATION

Smith ER, Hurt L, Chowdhury R, et al. Delayed breastfeeding initiation and infant survival: a systematic review and meta-analysis. *PLoS One*. 2017;12(7):e0180722.

- A systematic review and meta-analysis examining early breastfeeding initiation (i.e., within the first 60 minutes following childbirth), versus delayed initiation (i.e., within the first 2–23 hours following childbirth) and neonatal and infant outcomes.
- Pooled results indicate an increased risk of neonatal mortality to 28 days of age with delayed breastfeeding initiation.

Early Initiation of Breastfeeding [Video]. Waitsfield (VT): Global Health Media; c2014–2018. Available from: <https://globalhealthmedia.org/portfolio-items/early-initiation-of-breastfeeding/?portfolioID=5623>

- Strategies to support breastfeeding initiation within the first few hours after birth are shown in this video.

World Health Organization. WHO recommendations: intrapartum care for a positive childbirth experience [Internet]. Geneva (CH): World Health Organization; 2018. Available from: <http://apps.who.int/iris/bitstream/10665/260178/1/9789241550215-eng.pdf?ua=1>

- The WHO’s recommendations include supporting breastfeeding initiation as soon as possible following childbirth when the breastfeeding initiation person and newborn are clinically stable.

Buckley SJ. Hormonal physiology of childbearing: evidence and implications for women, babies, and maternity care [Internet]. Washington (DC): Childbirth Connection Programs, National Partnership for Women and Families; 2015. Available from: <http://www.nationalpartnership.org/research-library/maternal-health/hormonal-physiology-of-childbearing.pdf>

- Discusses the physiological role of hormones, including oxytocin and prolactin, to support breastfeeding initiation, and provides examples of obstetric care practices that may negatively impact hormone levels.

Shafer R, Genna CW. Physiologic breastfeeding: a contemporary approach to breastfeeding initiation. *J Midwifery Womens Health*. 2015;60(5):546–53.

- A review of breastfeeding initiation strategies to support (a) the newborn’s innate ability to find the nipple and latch through skin-to-skin contact, (b) the lack of time constraints, (c) a supportive breastfeeding environment, and (d) and support by the health-care providers and/or peers.
- Physiologic breastfeeding is baby-led and guided by the breastfeeding person.

STANDARDS OR PROTOCOLS ON BREASTFEEDING INITIATION

Toronto Public Health. Breastfeeding protocols for health care providers [Internet]. Toronto (ON): Toronto Public Health; 2013. Available from: <https://www.toronto.ca/wp-content/uploads/2017/11/9102-tph-breastfeeding-protocols-1-to-21-complete-manual-2013.pdf>

- Protocols developed by a public health unit in Toronto, Ontario, Canada, to protect, promote, and support breastfeeding.
- Protocol # 1—“*The Initiation of Breastfeeding*”—includes strategies to support breastfeeding initiation.

Provincial Council for Maternal and Child Health. Standards of postnatal care for mothers and newborns in Ontario: birth to one-week postnatal period. Toronto (ON): Provincial Council for Maternal and Child Health; 2017. Available from: <http://www.pcmch.on.ca/wp-content/uploads/2017/10/Standards-of-Postnatal-Care-for-Mothers-and-Newborns-in-Ontario-Final-Report-Part-I-2017Oct10.pdf>

- Standards developed by the Provincial Council for Maternal and Child Health in Ontario that support breastfeeding initiation within acute perinatal care settings.



Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)

RECOMMENDATION 2.3:

Support the breastfeeding dyad to achieve effective positioning, latch, and milk transfer.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1; Moderate = 2

Discussion of Evidence:

Evidence Summary

Nurses, the interprofessional team, and peers can support breastfeeding persons in situations of direct breastfeeding to achieve effective positioning, latch, and milk transfer to attain higher rates of exclusive breastfeeding using multicomponent strategies throughout the perinatal period (34, 38, 45). Examples of multicomponent strategies include prenatal education, assistance with positioning and latch beginning in the immediate postpartum period, postpartum breastfeeding counselling, emotional support (including reassurance and encouragement), and planned follow-up visits in the home or clinical setting (34, 38, 45).

Benefits and Harms

Nipple Pain and/or Trauma Resulting from Ineffective Positioning and Latch

When the breastfeeding dyad does not achieve effective positioning, latch, and milk transfer, breastfeeding challenges or difficulties can arise. This includes nipple pain and/or trauma, which can lead to early breastfeeding cessation, reduced levels of BSE, and increased stress for the breastfeeding person (15). Common causes of nipple pain and/or trauma include ineffective positioning and latch, mastitis, or nipple cracks, bleeding, or blistering (15, 46). Listed below are some targeted interventions to prevent and treat nipple pain and/or trauma.

Education and Assistance with Effective Positioning and Latch

To prevent nipple pain and/or trauma, breastfeeding persons need to be educated and assisted to achieve effective positioning and latch and to address any underlying causes of pain, such as nipple friction or compression (15, 46). An assessment and assistance to achieve an effective latch should be the first strategy for reducing potential nipple pain and/or trauma (46).

Anticipatory Guidance

As a strategy to address nipple pain and trauma and mitigate breastfeeding cessation, anticipatory guidance can improve coping and reduce stress (15). Breastfeeding persons can be informed that between 34 and 96 per cent of those who breastfeed experience nipple pain and trauma, and that it typically occurs in the first week postpartum, particularly on day three. They also can be told that pain often recedes to mild levels after the first week to 10 days (15). Typical causes, signs, and symptoms of nipple pain and trauma can be discussed, and breastfeeding persons can be made aware that the pain often decreases, regardless of treatments used such as topical ointments or oral analgesics (15).

Treatments for Nipple Pain and/or Trauma

Although there is anecdotal evidence that some preparations—including glycerine gel dressings, lanolin, nipple protectors (shields or shells) with lanolin, or all-purpose nipple ointment—have successfully been used for nipple pain and/or trauma, there is insufficient evidence that they effectively reduce perceived pain levels. Instead, prevention of nipple pain and/or trauma through assistance with positioning and latch and anticipatory guidance is recommended (15). In a Cochrane Review, applying EBM or no treatment was found to be equally (or more) beneficial in the short-term use for nipple pain than products such as lanolin (15). EBM is thought to be effective because it contains antiviral and anti-infective components (15).

Appendix D includes a discussion of breastfeeding challenges, including recurring nipple pain and mastitis.

Values and Preferences

The RNAO expert panel attributed a higher value to the importance of nurses, the interprofessional team, and peers supporting breastfeeding persons to achieve effective positioning and latch through strategies such as continued support, observation of a breastfeeding session, and breastfeeding counselling. The process should be led by the needs of the breastfeeding person in response to cues from the infant. When observing a breastfeeding session, nurses, the interprofessional team, and peers should refrain from forcing the newborn, infant, or young child on the breast. Instead, a hands-off approach should be taken, unless requested by the breastfeeding person or where necessary.

Practice Notes

Indicators of sufficient milk transfer as well as examples of correct positioning and latch, including illustrations and photographs, are included in the Supporting Resources table below. They are relevant to nurses, the interprofessional team, and peers, and to breastfeeding persons and their families.

Supporting Resources

RESOURCE	DESCRIPTION
ACHIEVING EFFECTIVE POSITIONING AND LATCH	
Morton J. A Perfect Latch [Video]. [place unknown]: Stanford Medicine; 2017. Available from: http://med.stanford.edu/newborns/professional-education/breastfeeding/a-perfect-latch.html	<ul style="list-style-type: none"> ■ A video that includes tips on supporting positioning and latch. It was developed for physicians and other health-care providers.
Best Start Resource Centre. My breastfeeding guide [Internet]. [place unknown]: Best Start Resource Centre; 2015. Available from: https://www.beststart.org/resources/breastfeeding/BSRC_My_Breastfeeding_Guide_EN.pdf	<ul style="list-style-type: none"> ■ A breastfeeding guide for expectant or new parents with topics including effective positioning and latch.

ACHIEVING EFFECTIVE POSITIONING AND LATCH

Overcoming Challenges—Extra [Internet]. [place unknown]: Best Beginnings; [date unknown]. Available from: <https://www.bestbeginnings.org.uk/overcoming-challenges-%C3%A2%E2%82%AC%E2%80%9C-extra-film/ae4e709c-91f3-4f6d-a612-b46fcd57390>

- A film examining how breastfeeding persons have overcome challenges, including sore nipples caused by ineffective latching.

PARAMETERS OF ADEQUATE BREAST MILK INTAKE

Dietitians of Canada; Canadian Paediatric Society; The College of Family Physicians of Canada, et al. Promoting optimal monitoring of child growth in Canada: using the new WHO growth charts [Internet]. [place unknown]: Community Health Nurses of Canada; 2010. Available from: <https://www.cps.ca/uploads/tools/growth-charts-statement-FULL.pdf>

- A collaborative statement from key Canadian stakeholders on infant and child health that promotes serial measurements of weight and other parameters to determine growth and development.

Dietitians of Canada. WHO growth chart assessment and counselling—key messages and actions [Internet]. [place unknown]: Dietitians of Canada; c2014. Available from: <https://www.dietitians.ca/Downloads/Public/Growth-Charts-Key-Messages-ENGLISH.aspx>

- A resource on growth chart assessment and counselling that promotes examination of measures of growth (including head circumference, weight-for-age, length, and length-for-age) for infants and children.

Public Health Agency of Canada. 10 valuable tips for breastfeeding [Internet]. Ottawa (ON): Public Health Agency of Canada; 2009. Available from: https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/hp-ps/dca-dea/stages-etapes/childhood-enfance_0-2/nutrition/pdf/tips-cons-eng.pdf

- An educational breastfeeding resource that includes signs of sufficient milk transfer, such as regaining birth weight by two weeks of age, gaining five or more ounces weekly after two weeks of age, six or more wet diapers per day by day six, and frequent bowel movements.

Best Start Resource Centre. Breastfeeding guidelines for consultants [Internet]. [place unknown]: Best Start Resource Centre; 2017. Available from: <http://www.beststart.org/resources/breastfeeding/pdf/breastfdeskref09.pdf>

- A resource indicating the normal parameters of breastfeeding, such as frequency of feeds, number of wet and soiled diapers per day, and growth spurts.

La Leche League Canada. How to know your baby is getting enough milk [Internet]. [place unknown]: La Leche League Canada; 2015. Available from: https://www.lllc.ca/sites/lllc.ca/files/457_CMYK_2015.pdf

- An information sheet for parents and family members with a list of indicators of sufficient breast milk intake, including the number of daily wet diapers, bowel movements, and frequency of feeds.

GUIDELINES FOR HEALTHY BREASTFED NEWBORNS AND INFANTS

Health Canada; Canadian Paediatric Society; Dietitians of Canada, et al. Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months [Internet]. Ottawa (ON): Government of Canada; 2015 (updated 2015 Aug 18). Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding/nutrition-healthy-term-infants-recommendations-birth-six-months.html#a10>

- A statement by the Infant Feeding Joint Working Group provides Canadian health professionals with evidence-informed principles and recommendations for developing practical feeding guidelines for parents and caregivers.

Best Start Resource Centre. Guidelines for nursing mothers [Internet]. [place unknown]: Best Start Resource Centre; 2016. Available from: <https://www.beststart.org/resources/breastfeeding/pdf/magneng.pdf>

- Guidelines regarding feeding frequency, number of wet and soiled diapers, and weight changes for breastfed newborns age one day to three weeks.

Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)

RECOMMENDATION 2.4:

Support responsive cue-based breastfeeding through strategies such as:

- education and promotion and
- recognition of the needs of the breastfeeding person.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1

Discussion of Evidence:

Evidence Summary

Responsive cue-based breastfeeding (also known as “baby-led breastfeeding”) is a type of breastfeeding pattern in which the frequency and length of feeds are unrestricted and based on the infant’s cues and sleep duration (64). Additionally, cue-based breastfeeding is responsive to the breastfeeding person’s breast fullness to self-manage supply and comfort (64). It supports the physiology of breastfeeding as a supply and demand feedback mechanism, enabling a breast milk supply that aligns with the individualized and changing needs of the infant over time (64). Responsive cue-based breastfeeding supports exclusive breastfeeding for healthy newborns and is recognized as current best practice based on evidence from the WHO/UNICEF’s “*The Ten Steps to Successful Breastfeeding*” (64). (See **Table 6** for more details).

Strategies to Support Responsive Cue-Based Breastfeeding

Education and Promotion

To support responsive cue-based breastfeeding, education and promotion by nurses, the interprofessional team, and peers are needed (64). Breastfeeding persons and their families need consistent information regarding responsive cue-based breastfeeding, including the benefits of unrestricted frequency and duration of breastfeeds as a mechanism to support of the physiology of lactation. As well, they require reassurance that responsive cue-based breastfeeding effectively supports healthy infant growth and development and breastfeeding initiation, exclusivity, and continuation (64).

Recognition of the Needs of the Breastfeeding Person

The needs of the breastfeeding person must be taken into consideration when using responsive cue-based breastfeeding (64). Nurses, the interprofessional team, peers, and families must recognize that competing time demands on the breastfeeding person can influence their decision of whether to choose or continue responsive cue-based breastfeeding (64). The breastfeeding person may feel that unrestricted frequency and length of feeds seem or are very demanding. A breastfeeding person may experience challenges in the presence of factors such as pain, fatigue, childcare for other children, time restrictions other than looking after the breastfeeding infant, or socio-economic concerns (64). Garnering support from a partner, family, or the person’s social network—as well as from health-care providers and peers—can be critical for the breastfeeding person during this time.

Benefits and Harms

Research indicates that the following infant feeding approaches are not supportive for exclusive and continued breastfeeding: formula supplements, water or dextrose supplements, delayed first breastfeed to up to six hours following childbirth, and scheduled breastfeeds for the first 48 hours before starting cue-based feeding (64). There is a lack of evidence that scheduled breastfeeding (where the timing of breastfeeding is determined by the breastfeeding person and not by infant cues) or a combination of scheduled feeding and cue-based breastfeeding are associated positively or negatively with exclusive breastfeeding (64). Scheduled breastfeeding is thought to support certain time demands (such as care of other children) or socio-economic factors (including needing to work outside of the home). It is also thought to be a method of managing pain caused by breastfeeding because it involves strategizing the timing and frequency of putting the infant directly to the breast (64). Nonetheless, scheduled breastfeeding on its own—or in combination with responsive cue-based breastfeeding—has not demonstrated a positive association with exclusivity (64).

Values and Preferences

The RNAO expert panel attributed a higher value to responsive cue-based breastfeeding to support exclusive and continued breastfeeding compared to scheduled feeding or a combination of the two. They recommended the terminology “cue-based,” versus “on demand,” as the language reflected a baby-led approach that requires recognition of the infant’s behaviours, including those indicating hunger and satiety.

Practice Notes

In the first few days postpartum, many persons need reassurance of their abilities to successfully breastfeed (64). They may feel overwhelmed caring for their newborn while recovering from childbirth. Breastfeeding persons who are using responsive cue-based breastfeeding should understand the following:

- It is normal for newborns and infants to breastfeed more frequently than bottle-fed infants or those who feed by both bottle and breast.
- Breastfeeds of varying frequencies and lengths are normal and not an indication of IMS or a need to cease breastfeeding and switch to scheduled breastfeeding or formula feeding.
- Support from nurses, the interprofessional team, and peers can be integral to achieving responsive cue-based breastfeeding. They can help with related areas such as understanding infant feeding cues, achieving effective positioning and latch, and managing breast milk fullness (64).

Supporting Resources

RESOURCE	DESCRIPTION
RESPONSIVE CUE-BASED BREASTFEEDING EDUCATION FOR FAMILIES	
Baby feeding cues (signs) [Internet]. Brisbane (AU): Queensland Health; 2010 (updated 2017 Nov). Available from https://metronorth.health.qld.gov.au/rbwh/wp-content/uploads/sites/2/2017/07/feeding-cues-term.pdf	<ul style="list-style-type: none"> ■ An education poster with newborn photos of early, mid, and late cues for feeding.
McMaster Children’s Hospital; St. Joseph’s Healthcare Hamilton. Cue-based feeding in the neonatal nurseries [Internet]. Hamilton (ON): St. Joseph’s Healthcare Hamilton; 2014 (updated 2015 Mar 25). Available from: https://www.stjoes.ca/patients-visitors/patient-education/patient-education-a-e/cue-based-feeding.pdf	<ul style="list-style-type: none"> ■ An education fact sheet for parents that defines components of newborn cue-based feeding: readiness to feed, the quality of the feed, and caregiver techniques.
RESPONSIVE CUE-BASED BREASTFEEDING WITH THE INTRODUCTION OF COMPLEMENTARY FEEDING	
World Health Organization. Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals. Guiding principles for complementary feeding of the breastfed child [Internet]. Geneva (CH): World Health Organization; 2009. Available from: https://www.ncbi.nlm.nih.gov/books/NBK148957/	<ul style="list-style-type: none"> ■ Session 3—“<i>Complementary Feeding</i>”—discusses continuing cue-based breastfeeding until two years of age or longer, with the introduction of solids at six months of age.

Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)

RECOMMENDATION 2.5:

Teach hand expression to all breastfeeding persons prior to discharge from the childbirth setting.

Level of Evidence for Summary: Ia, V

Quality of Evidence for Summary: High = 1; Guideline: Moderate = 1

Discussion of Evidence:

Evidence Summary

All breastfeeding persons should be taught how to hand express their breast milk prior to discharge from the childbirth setting (65). There are several reasons for this:

- Hand expression of breast milk can be a means of achieving breastfeeding initiation, exclusivity, and continuation in cases where direct breastfeeding is not feasible due to factors such as infant separation caused by illness, hospitalization or prematurity, low breast milk supply, or return to work or school.
- It can help to support the breastfeeding person's preferences or needs.
- Hand expression can be as effective—or more so—than electric pumps for supporting breast milk production (65).

Regardless of the rationale for hand expression, the breastfeeding person must practice to develop the necessary skills and proficiency needed; education provided by nurses, the interprofessional team, and/or peers also is required (46).

For breastfeeding initiation, hand expression of colostrum may be more effective than pumping, and it has less risk of nipple pain or trauma (39). To be effective, hand expression should be started as soon as possible after birth as part of a regime that includes relaxation, warming the breast, and breast massage (39, 46). Breast massage should be encouraged to support increased oxytocin release and milk transfer (46).

Benefits and Harms

Benefits of learning hand expression for the breastfeeding person include improved confidence and familiarity with their breasts and breast milk production, and skill development in breast milk removal without the need for any additional equipment such as manual or electric pumps (65).

Values and Preferences

The RNAO expert panel attributed a higher value to teaching all breastfeeding persons the skill of hand expression as a standard of care and a mechanism for supporting breast milk production in the event that direct breastfeeding is not possible or preferred.

Additionally, the expert panel's ranked preference for alternative feeding methods is consistent with the WHO recommendations: (1) fresh EBM; (2) frozen EBM; (3) donor human milk, where available from an accredited human breast milk bank; and (4) cow milk-based commercial formula. Breastfeeding persons learning how to hand express their breast milk facilitates available fresh EBM.

Practice Notes

Hand expression can be used to support or increase breast milk supply, or it can be used to manage breast comfort, as needed, in situations such as breast fullness or plugged ducts (65). **Recommendation 2.7** discusses other techniques, in addition to hand expression, to support or enhance breast milk production.

Supporting Resources

RESOURCE	DESCRIPTION
HAND EXPRESSION	
Toronto Public Health. Breastfeeding protocols for health care providers. Toronto (ON): Toronto Public Health; 2013. Available from: https://www.toronto.ca/wp-content/uploads/2017/11/9102-tph-breastfeeding-protocols-1-to-21-complete-manual-2013.pdf	<ul style="list-style-type: none"> ■ Protocols developed by a public health unit in Toronto, Ontario, Canada, to help health-care providers protect, promote, and support effective breastfeeding. ■ Hand expression and breast massage are discussed in Protocol #19: “Expressing and Storing Breast Milk.”
Morton J. Hand Expression of Breastmilk [Video]. [place unknown]: Stanford Medicine; 2017. Available from: http://med.stanford.edu/newborns/professional-education/breastfeeding/hand-expressing-milk.html	<ul style="list-style-type: none"> ■ An educational video from Stanford University Medical Center on how health-care providers can teach hand expression.
Breastfeeding Committee for Canada. The BFI 10 Steps and WHO Code Outcome Indicators for Hospitals and Community Health Services [Internet]. [place unknown]: Breastfeeding Committee for Canada; 2017. Available from: http://www.breastfeedingcanada.ca/documents/Indicators%20-%20complete%20June%202017.pdf	<ul style="list-style-type: none"> ■ For breastfeeding persons with infants in special care nurseries—or persons unable to breastfeed or those who are separated from their infant due to illness, work, or school—the BFI recommends that they are (a) taught hand expression within the first hour of birth, (b) encouraged to express breast milk at least six times in the first 24 hours, and (c) encouraged to express breast milk at least eight times in each 24-hour period thereafter.
HAND EXPRESSION AND SAFE STORAGE OF EBM	
Global Health Media Project. Expressing and storing breast milk [Video]. Waitsfield (VT): [Global Health Media Project]; 2015. Available from: https://globalhealthmedia.org/portfolio-items/expressing-and-storing-breastmilk/	<ul style="list-style-type: none"> ■ A video demonstrating hand expression of breast milk and its safe storage.

HAND EXPRESSION AND SAFE STORAGE OF EBM	
<p>Infection Prevention and Control Canada. Handing of expressed human milk in health care facilities. [place unknown]: Infection Prevention and Control Canada; 2015. Available from: http://www.breastfeedingcanada.ca/documents/Human%20Milk%20Position%20Statement%20-%202015March-FINAL(2).pdf</p>	<ul style="list-style-type: none"> ■ A position statement from Infection Prevention and Control Canada on the safe handling of breast milk as a body fluid.
<p>Best Start Resource Centre. Expressing and storing breast milk [Internet]. Toronto (ON): Best Start Resource Centre; 2018. Available from: https://www.beststart.org/resources/breastfeeding/Expressing_Fact%20Sheets_Eng_rev2.pdf</p>	<ul style="list-style-type: none"> ■ A fact sheet on breast milk expression and safe storage for breastfeeding persons and their families.
<p>Proper Storage and Preparation of Breast Milk [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2017 (updated 2018 May 7). Available from: https://www.cdc.gov/breastfeeding/recommendations/handling_breastmilk.htm</p>	<ul style="list-style-type: none"> ■ Guidelines on the safe preparation and storage of human milk for in-home setting from the US Centers for Disease Control and Prevention.
<p>Becker GE, Smith HA, Cooney F. Methods of hand expression for lactating women. Cochrane Database Syst Rev. 2016;9:CD006170.</p>	<ul style="list-style-type: none"> ■ A Cochrane Review on methods of hand expression for lactating persons. ■ Effective measures included the following: <ul style="list-style-type: none"> □ starting to express breast milk soon after childbirth in situations where an infant is unable to feed directly at the breast, □ relaxation, □ breast massage, and □ warming of the breasts.

BREAST MESSAGE TO SUPPORT HAND EXPRESSION

Von Voigtlander Women’s Hospital. Breast self-massage for lactating mothers [Internet]. Ann Arbor (MI): University of Michigan Health System; 2016 (updated 2017 Dec). Available from: <http://www.med.umich.edu/1libr/Gyn/Lactation/BreastMassage.pdf>

- A fact sheet for parents that defines breast massage for lactating persons, steps on how to perform breast massage, and situations in which a health-care provider should be contacted such as signs of a possible breast infection.

Breastfeeding Program: For Health-Care Professionals [Internet]. Toronto (ON): Hospital for Sick Children (Sick Kids); c1999–2014. Available from: <http://www.sickkids.ca/breastfeeding-program/education/index.html>

- A free online-learning series, including a module on breast massage as a tool to help establish and maintain a milk supply.

RELAXATION THERAPY TO SUPPORT BREASTFEEDING

Shukri NH, Wells JCK, Fewtrell M. The effectiveness of interventions using relaxation therapy to improve breastfeeding outcomes: a systematic review. *Mat Child Nutr.* 2018;14(2):e12563.

- A systematic review examining the effectiveness of relaxation therapy during breastfeeding.
- Relaxation therapy was shown to increase breast milk yield in breastfeeding persons with preterm infants.
- The evidence in this area is limited and further studies are needed.

Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)

RECOMMENDATION 2.6:

Implement individualized breastfeeding self-efficacy interventions throughout the perinatal period to enhance breastfeeding confidence including:

- one-on-one counseling prior to discharge from the childbirth setting and
- follow-up post-discharge.

Level of Evidence for Summary: Ia, Ib

Quality of Evidence for Summary: High = 2

Discussion of Evidence:

Evidence Summary

BSE refers to the breastfeeding person's level of confidence in achieving breastfeeding. It can influence a person's motivational level and ability to achieve breastfeeding goals (15). BSE is recognized internationally as a modifiable variable impacting exclusive and continued breastfeeding (15).

It is theorized that BSE is influenced by the following four factors: previous breastfeeding experiences; vicarious experiences, such as the breastfeeding experiences of others; verbal persuasion, such as encouragement and support; and physiologic responses, such as fatigue or depression (57).

Enhancing Breastfeeding Self-Efficacy Prenatally

BSE can be increased in the prenatal period through strategies such as breastfeeding education and anticipatory guidance offered in primary, acute and community care settings (59, 62). Other examples of prenatal interventions to enhance BSE are listed in the "Practice Notes" section.

Enhancing Breastfeeding Self-Efficacy Prior to Discharge from the Childbirth Setting

Increased rates of exclusive breastfeeding were seen when breastfeeding persons received a BSE-enhancing intervention that included individualized education and support in-person prior to discharge from the childbirth setting (15, 58).

An example of a BSE-enhancing intervention included one-on-one visits by a nurse: once within the first 24 hours following childbirth and again within one day of the first visit prior to discharge from the childbirth setting. At one or both visits, an observation of a breastfeeding session occurred to maximize performance accomplishment through verbal feedback and encouragement (58). At both sessions, the nursing process of assessment, interventions, and evaluation was integrated to enhance BSE. The assessment included multiple BSE-related components such as the breastfeeding person's goals; their level of BSE and perceived breastfeeding strengths and limitations (as measured by components of the BSES-SF scale); the presence of fatigue or pain; and emotional status, including any symptoms of depression or anxiety. Interventions to enhance BSE were individualized and based on the outcomes of a valid BSE tool, including areas where the breastfeeding person rated low or high levels of confidence. For example, if the breastfeeding person rated their ability to determine if the newborn was getting enough breast milk as low, strategies

to enhance BSE included providing the following: breastfeeding education; positive verbal feedback on aspects such as effective latching; and anticipatory guidance regarding normal early breastfeeding experiences, such as fatigue. Following the interventions, low-scoring items on the BSE scale were re-evaluated to identify any short-term changes and areas for follow-up at the next session.

Follow-Up Post-Discharge

Follow-up post-discharge from the childbirth setting provides an opportunity for ongoing support and to build on earlier breastfeeding successes, challenges, or failures that influence BSE (15, 58). Evidence supports continued interventions in the first few months postpartum as more effective than those provided in the immediate postpartum (58). Ongoing support can also mitigate the risk of breastfeeding cessation, which is highest in the first four weeks postpartum (58). BSE-enhancing interventions provided post-discharge can address areas of concern that are positively associated with the risk of breastfeeding cessation and use of formula supplementation (15, 58).

See **Recommendation 1.1** for a discussion of validated and reliable BSE assessment tools.

Benefits and Harms

A lack of support from nurses, the interprofessional team, and peers can negatively impact a breastfeeding person's belief and confidence in their ability to breastfeed (45). Similarly, in situations where breastfeeding is discouraged, a person may feel vulnerable to social or familial pressures and be more likely to cease breastfeeding (45).

Values and Preferences

The RNAO expert panel attributed a higher value to implementing BSE-enhancing strategies as a modifiable determinant of breastfeeding exclusivity. Nurses, the interprofessional team, and peers can enhance BSE directly through targeted BSE interventions like support and education.

Practice Notes

There are a number of examples of BSE-enhancing interventions that significantly increased exclusive breastfeeding and were integrated throughout the perinatal period in a variety of settings (such as acute and community care) (58 – 63).

Prenatal interventions

- Breastfeeding education that included information, demonstration, and/or discussion in areas such as the importance of breastfeeding, and positioning and latch.
- A solution-orientated workbook on BSE with topics such as increasing mastery, building confidence by learning from others, exploring responses to stress, and keeping motivated.
- Breastfeeding videos.
- Workshops held in the third trimester.

Postpartum interventions

- Assessment of BSE using a validated tool.
- Provision of breastfeeding education in written and multimedia formats.
- Support and encouragement to breastfeed.

- Breastfeeding counselling to answer questions and concerns.
- Incorporation of BSE theoretical principles.
- Practical assistance with positioning and latch.
- Instruction in breast milk hand expression.
- Screening for indications for follow-up assessment by a LC or physician.
- Discussion of concerns regarding actual or perceived IMS.

Supporting Resources

RESOURCE	DESCRIPTION
Brockway M, Benzies K, Hayden KA. Interventions to improve breastfeeding self-efficacy and resultant breastfeeding rates: a systematic review and meta-analysis. <i>J Hum Lact.</i> 2017;33(3):486–99.	<ul style="list-style-type: none">■ A systematic review and meta-analysis of BSE interventions and breastfeeding rates that indicate an increased likelihood of breastfeeding at one and two months postpartum versus controls in a variety of delivery settings.



Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)

RECOMMENDATION 2.7:

Provide individualized assistance to support or enhance breast milk production, where appropriate.

Level of Evidence for Summary: Ia, V

Quality of Evidence for Summary: High = 4; Guideline: Moderate = 1

Discussion of Evidence:

Evidence Summary

Breastfeeding Situations That Require Temporary or Permanent Strategies to Support or Enhance Breast Milk Volume

In most situations, the integration of responsive cue-based breastfeeding and effective positioning, latch, and milk transfer stimulates sufficient breast milk volume to support normal growth parameters for the infant (33). As such, strategies to enhance breast milk volume are unnecessary (33).

However, there are circumstances involving the breastfeeding person, newborn, infant, or young child (or the breastfeeding dyad) where individualized strategies are indicated to support or enhance breast milk volume. These strategies, which can be followed either temporarily or on a permanent basis, are intended to achieve breastfeeding initiation, exclusivity, and continuation. Examples of such situations are listed in **Tables 9** and **10**.

Table 9: Examples of Breastfeeding Situations for Breastfeeding Persons That May Require Temporary or Permanent Strategies to Support or Enhance Breast Milk Production

BREAST-RELATED CHALLENGES	ILLNESSES	CHALLENGES WITH MILK SUPPLY	PERINATAL-RELATED COMPLICATIONS	OTHER SITUATIONS
<ul style="list-style-type: none"> ■ Nipple pain ■ Breast fullness ■ Mastitis ■ Plugged ducts ■ Flat or inverted nipples ■ History of breast surgery 	<ul style="list-style-type: none"> ■ Polycystic ovary syndrome ■ Taking medications that are not compatible with breastfeeding 	<ul style="list-style-type: none"> ■ Low milk supply or IMS ■ Induced lactation 	<ul style="list-style-type: none"> ■ Complicated or prolonged labour (e.g., unplanned caesarean birth or operative vaginal delivery) ■ Pain or exhaustion post-delivery ■ Mood disorders ■ Postpartum hemorrhage ■ Sheehan's syndrome (hypopituitarism and deficient prolactin secretion) ■ Retained placental fragments 	<ul style="list-style-type: none"> ■ Surrogacy ■ Frequent use of tobacco or alcohol ■ Separation due to situations such as custody, return to work or school, or incarceration ■ Informed decision ■ Personal preference ■ Induced lactation (e.g., non-biological parent) ■ Relactation

Sources: Flint A, New K, Davies MW. Cup feeding versus other forms of supplemental enteral feeding for newborn infants unable to fully breastfeed. *Cochrane Database Syst Rev.* 2016;8:CD005092; Whitford HM, Wallis SK, Dowswell T, et al. Breastfeeding education and support for women with twins or higher order multiples. *Cochrane Database Syst Rev.* 2017;2:CD012003; Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #9: use of Galactagogues in initiating or augmenting the rate of maternal milk secretion. *Breastfeed Med.* 2011 Feb;6(1):41–9; Jaafar HS, Ho JJ, Lee SK. Rooming-in for new mother and infant versus separate care for increasing the duration of breastfeeding. *Cochrane Database Syst Rev.* 2016;8:CD006641; and Moran VH, Morgan H, Rothnie K, et al. Incentives to promote breastfeeding: a systematic review. *Pediatrics.* 2015;135(3):e687–e702.

RECOMMENDATIONS

Table 10: Examples of Situations for Infants That May Require Temporary or Permanent Strategies to Support or Enhance Breast Milk Production

ILLNESSES	CONGENITAL CONDITION	BIRTH-RELATED COMPLICATIONS	OTHER
<ul style="list-style-type: none"> ■ Illness or surgery requiring hospitalization ■ Hyperbilirubinemia 	<ul style="list-style-type: none"> ■ A clinical syndrome (e.g., Down syndrome) in which direct breastfeeding may pose additional challenges ■ Anterior and posterior ankyloglossia ■ Orofacial cleft 	<ul style="list-style-type: none"> ■ Transient complications, such as hypoglycemia, respiratory or cardiac distress, or neonatal abstinence syndrome ■ Prematurity ■ Vaginal operative delivery with forceps or vacuum ■ Twins or higher order multiples 	<ul style="list-style-type: none"> ■ Concerns about insufficient weight gain and/or failure to thrive

RECOMMENDATIONS

Sources: Flint A, New K, Davies MW. Cup feeding versus other forms of supplemental enteral feeding for newborn infants unable to fully breastfeed. *Cochrane Database Syst Rev.* 2016;8:CD005092; Whitford HM, Wallis SK, Dowswell T, et al. Breastfeeding education and support for women with twins or higher order multiples. *Cochrane Database Syst Rev.* 2017;2:CD012003; Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #9: use of Galactagogues in initiating or augmenting the rate of maternal milk secretion. *Breastfeed Med.* 2011 Feb;6(1):41–9; Jaafar HS, Ho JJ, Lee SK. Rooming-in for new mother and infant versus separate care for increasing the duration of breastfeeding. *Cochrane Database Syst Rev.* 2016;8:CD006641; and Moran VH, Morgan H, Rothnie K, et al. Incentives to promote breastfeeding: a systematic review. *Pediatrics.* 2015;135(3):e687–e702.

Regardless of the strategy chosen to support or enhance breast milk supply, steps such as initiating skin-to-skin contact, observing a breastfeeding session, providing education, and reducing or stopping the use of formula supplementation should first be introduced (46). In cases where further interventions are indicated, individualized approaches should be used that consider variables such as (a) whether breast milk supply has been initiated or established and (b) the preferences and short- and long-term breastfeeding goals of the breastfeeding person (39).

Strategies to support breast milk expression include hand expression (as discussed in **Recommendation 2.5**), pumping, or possibly Galactagogues (33, 39, 66). The use of these strategies may maintain or increase breast milk supply in cases where it might otherwise not be possible. Regardless of the strategy used, careful monitoring and follow-up are indicated (46).

Pumping

Pumping can be used to support or enhance breast milk supply (39). Types of breast pumps include manual or electric; they are available as either a single or double model. There is insufficient evidence to support a specific type of breast pump for the initiation or maintenance of breast milk supply: manual pumps or lower cost pumps may be as effective as electric or hospital-grade ones (39). More studies are needed to determine the type of pump, timing, and frequency of pumping to most effectively support breast milk production (66).

When pumping is indicated to initiate, maintain, or enhance breast milk supply, breastfeeding persons must be taught skills such as the mechanics of a breast pump, the frequency and duration of pumping, the cleaning and maintenance of equipment, and the safe storage of EBM (39). Observation of one or more pumping sessions can provide helpful feedback to the breastfeeding person and reinforce teaching concepts (39).

Education also will support breastfeeding persons to avoid pumping-related complications that result from insufficient or excessive breast stimulation. For example, pumping too frequently or for too long can lead to nipple pain or engorgement. Conversely, insufficient pumping reduces breast stimulation, causing reduced milk supply or IMS, decreased likelihood of exclusivity, or early breastfeeding cessation (39). To be effective as an intervention, pumping must be appropriate to the needs of the breastfeeding dyad. These needs can change over time and must be regularly re-assessed (39).

Galactagogues

Galactagogues are prescribed medications or other substances that can support or enhance breast milk production, although there is limited evidence as to their efficacy (46). The practice of prescribing medications as galactagogues is “off label” in most countries because the medications have not been approved by regulatory bodies for the purposes of lactation enhancement (46). Therefore, when a prescribed medication is being considered as a galactagogue, an informed decision-making process must be used that acknowledges all of these components, including the risks of medication exposure and the benefits of continued breastfeeding (46).

No specific prescribed galactagogue can be recommended due to the lack of conclusive findings regarding their efficacy and the potential risk of adverse effects (46). Screening for allergies, contraindications, or drug interactions is indicated, and judicious use, close supervision, and follow-up are warranted (46). Prior to trying a prescribed galactagogue, all non-pharmacological strategies should be tried first (as discussed above with regard to pumping) (39, 46, 66).

In addition to medications, herbal products have historically been used as galactagogues to support or enhance lactation (46). For herbals—such as fenugreek, milk thistle, or dandelion—the mechanism of action is not known, and there is a lack of rigorous scientific evaluation (46). Additionally, studies on herbals are limited due to small sample sizes and sources of bias (such as lack of randomization and blinding). Finally, caution is warranted in the use of herbals to enhance milk production, as there is a lack of standardized dosing in herbal preparations and the potential for allergic reactions or drug interactions (46).

Benefits and Harms

Steps, such as hand expression or pumping, may increase a sense of achievement and confidence for breastfeeding persons. These steps may lead them to be able to establish and maintain an adequate breast milk supply (39). These factors can contribute to continued breastfeeding (39).

Values and Preferences

The RNAO expert panel attributed a higher value to all breastfeeding persons using strategies such as hand expression or pumping as a means of supporting their breast milk supply to achieve exclusivity and continuation. These strategies can be used to enhance breast milk volume, but only where clinically indicated. In the presence of sufficient breast milk production, strategies such as pumping or galactagogues are unnecessary and should be discouraged.

Practice Notes

Domperidone is a medication that has been prescribed off label as a galactagogue (46). As a dopamine antagonist, its side effect is an increase in prolactin levels, which can enhance breast milk production. Safety warnings for domperidone were issued by Health Canada in 2015 due to a small increased risk of serious cardiac arrhythmias and sudden cardiac death observed in older persons over 60 years of age. As such, a cardiac assessment (e.g., electrocardiography) is recommended before domperidone is prescribed as a galactagogue and close follow-up is indicated (67).

Supporting Resources

RESOURCE	DESCRIPTION
PUMPING	
Centers for Disease Control and Prevention. How to keep your breast pump kit clean [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; [date unknown]. Available from: https://www.cdc.gov/healthywater/pdf/hygiene/breast-pump-fact-sheet.pdf	<ul style="list-style-type: none"> ■ A fact sheet on the steps for using a breast pump and safely collecting breast milk.
Institut National de Santé Publique Québec. From Tiny Tot to Toddler: Expressing milk [Internet]. Québec (QC): Government of Québec; c2001–2018. Available from: https://www.inspq.qc.ca/en/tiny-tot/feeding-your-child/breast-feeding-your-baby/expressing-milk	<ul style="list-style-type: none"> ■ A practical guide for parents of young children from pregnancy to age two, with information on breastfeeding, including expressing breast milk, choosing a pump, and purchasing second-hand breast pumps.
Enger L, Hurst NM. Patient education: Pumping breast milk (Beyond the Basics) [Internet]. [place unknown]: UpToDate; c2018 (updated 2018 Mar 12). Available from: https://www.uptodate.com/contents/pumping-breast-milk-beyond-the-basics?source=see_link	<ul style="list-style-type: none"> ■ A patient education resource on pumping, including choosing a pump, how to pump, and storing breast milk.
Morton J. Maximizing Milk Production with Hands-On Pumping [Video]. [place unknown]: Stanford Medicine; c2017. Available from: https://med.stanford.edu/newborns/professional-education/breastfeeding/maximizing-milk-production.html	<ul style="list-style-type: none"> ■ A video demonstrating how breastfeeding persons can increase their breast milk production without the use of medication.

GALACTAGOGUES

FDA Talk Paper: FDA Warns Against Women Using Unapproved Drug, Domperidone, to Increase Milk Production [Internet]. Silver Spring (MD): U.S. Food and Drug Administration; 2004 (updated 2016 Apr 18). Available from: <https://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm173886.htm>

- A warning statement from the USA Food and Drug Administration (FDA) on use of oral domperidone as an unapproved drug for lactation, and the related risks of cardiac-related morbidities and mortality with intravenous exposure.

ENHANCING BREAST MILK SUPPLY AS CLINICALLY INDICATED

Von Voigtlander Women’s Hospital. Increasing breast milk supply [Internet]. Ann Arbor (MI): University of Michigan Health System; 2017 (updated 2017 Dec). Available from: <http://www.med.umich.edu/1libr/Gyn/Lactation/IncreasingMilkSupply.pdf>

- An education resource for breastfeeding persons and their families on how to increase breast milk supply using .using strategies such as skin-to-skin contact or pumping (where indicated).
- Causes of decreased breast milk supply are discussed such as infrequent breastfeeds, a sleepy baby, and scheduled feeds.

Interventions to Support Initial and Exclusive Breastfeeding (Pregnancy and Birth to Six Months)

RECOMMENDATION 2.8:

Provide ongoing proactive breastfeeding support services to address the individualized needs of the breastfeeding dyad.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 4; Moderate = 2

Discussion of Evidence:

Evidence Summary

Breastfeeding Support

As an intervention, support helps breastfeeding persons to achieve goals, reduce the risk of cessation, and resolve any challenges (45). The availability of breastfeeding support is positively associated with exclusivity up to six months and a decrease in the prevalence of cessation of partial or exclusive breastfeeding prior to six months (19, 45, 47). In settings with high breastfeeding initiation rates (i.e., 80 per cent or higher), support was most effective in decreasing exclusive breastfeeding cessation prior to six months (45). However, this was less effective in settings with moderate breastfeeding initiation rates (60 to 80 per cent) or low initiation rates (less than 60 per cent) (45). In addition to higher rates of exclusive and continued breastfeeding, support also increased levels of motivation, persistence, and confidence in breastfeeding (47).

Breastfeeding support is positively associated with reduced illness, a decreased need for health care, and improved cost effectiveness (37). For example, infants of low-income families who received had in-person support from community health nurses and peers for six months postpartum breastfed longer, had fewer clinic visits for health concerns, and required fewer prescriptions for illnesses (48). The cost of the support intervention by the nurses and peers was determined to be less than formula supplementation and infant health care (48).

Support can promote positive breastfeeding attitudes (45). For example, in populations where breastfeeding is rare, support can address myths and other misconceptions regarding the importance of breastfeeding and the needs of the breastfeeding infant (45). Similarly, in populations where breastfeeding is not the social norm, support can build the breastfeeding person's level of confidence to initiate and continue to breastfeed (45). As such, support can influence choices regarding infant feeding practices and promote exclusive and continued breastfeeding as the norm (45).

Breastfeeding Peer Support

Breastfeeding peers can be defined as lay providers who are (a) within and beyond the breastfeeding person's social network; (b) have lived experience with breastfeeding; and (c) sometimes share other qualities with the breastfeeding person, such as a similar socio-economic status or cultural background (37, 45). Peer supporters can include friends, other breastfeeding persons, or lay providers (including family home visitors) (37, 45).

Breastfeeding support can be provided effectively by peers, either independently or in collaboration with nurses and the interprofessional team (37). To collaborative effectively, nurses and the interprofessional team must

be knowledgeable about the role and benefits of peers, and they must be in favour of their involvement with breastfeeding persons through strategies such as home visiting, telephone contact, and group support sessions (37, 49). In settings where breastfeeding support is not available from nurses or the interprofessional team, peer support on its own may be an alternative approach (37).

Peer support is effective in increasing breastfeeding initiation, exclusivity, and confidence (37, 50). Peers provide an accessible and cost-effective strategy to promote and influence exclusive breastfeeding (37). Through peer relationships, breastfeeding persons can feel supported with practical day-to-day breastfeeding strategies (37, 50). Unlike nurses and other members of the interprofessional team, breastfeeding peers are perceived as uniquely equal to the breastfeeding person, and their support can be enhanced when they share the breastfeeding person's language, cultural values, level of income, or education. This can be particularly advantageous for vulnerable breastfeeding populations such as persons who are socially isolated, racialized, or marginalized (37, 50).

Provide Ongoing Proactive Breastfeeding Support Services

It appears that breastfeeding support is most effective when services are offered on an ongoing basis that can be anticipated by the breastfeeding person (i.e., proactive support) (45). This contrasts with breastfeeding support services that are accessible only after they have been requested by the breastfeeding person (i.e., reactive support) (45).

Support has the highest impact on exclusive breastfeeding when it is part of services provided regularly over several sessions (45). For example, breastfeeding support programs of four to eight sessions spanning a longer period of time (e.g., five weeks to six months) appear to have the greatest effect on exclusivity rates (45, 47). In contrast, fewer support sessions (e.g., a single contact during hospital stay) or more sessions (e.g., more than eight) were not found to be effective in raising the rates of exclusive breastfeeding (45, 47).

Effective breastfeeding support services can be offered face-to-face and/or via telephone (45). Face-to-face support appears to be more effective at reducing cessation of exclusive breastfeeding up to six months compared to support provided via telephone or a mixture of the two methods, although there was heterogeneity in the types of support offered (45). Regardless of the type of support, it needs to be provided by nurses or members of the interprofessional team who are knowledgeable and skilled in breastfeeding practices (45). **Recommendation 3.1** discusses the need for continuing breastfeeding education using current evidence-based theoretical knowledge and the application of practical skills.

A variety of settings can be used for breastfeeding support services, such as community centres, homes, and hospitals, including those with BFI designation (45, 47). Support can be provided in individual and group formats, or it can be provided to couples (45, 47). By having support available in multiple health sectors, accessibility is increased and exclusive breastfeeding can be supported and promoted (19).

Individualized Support to the Breastfeeding Dyad

Regardless of the setting, breastfeeding support must be tailored to the needs of the population (45). Examples of strategies to achieve individualized breastfeeding support include daily visits by nurses and the interprofessional team to address questions or concerns while the breastfeeding person is in hospital following childbirth; ongoing weekly telephone contact post-discharge; and home visits in the first week postpartum, with further home visits as needed (51). Topics of discussion during the visits will vary depending on the needs and goals of the breastfeeding person.

Benefits and Harms

When collaboration between peer support, nurses and the interprofessional team does not occur, peer support alone was not found to be effective in increasing continued breastfeeding (37).

Values and Preferences

The expert panel attributed a higher value to nurses, the interprofessional team and peers playing an integral role in facilitating breastfeeding support through promotion strategies, referrals, and coordination of resources and community and peer support services.

Peer training is important. Evidence suggests that breastfeeding persons preferred support from peers who had received breastfeeding training.

Practice Notes

Breastfeeding support is complex and multidimensional, and it may include any of the following:

- providing emotional or psychosocial support;
- giving reassurance;
- supplying praise;
- building self-esteem;
- offering practical help;
- giving information through discussion and responses to the individual's questions;
- extending social support, including connecting breastfeeding persons to support groups or other networks;
- increasing a person's knowledge of the importance of breastfeeding;
- supporting breastfeeding continuation and countering societal or familial pressures that may undermine breastfeeding confidence or goals; and
- addressing any myths or misconceptions regarding breast milk and the need for complementary foods for the infant prior to six months of age (45).

Examples of breastfeeding support services from the evidence include the following:

- Daily proactive telephone calls to the breastfeeding person for the first week postpartum followed by support via telephone (as needed) up to two weeks postpartum, with the additional option of text messages.
- Breastfeeding information, including access to a secure website with extensive information on breastfeeding. This was combined with follow-up emails and telephone calls to the breastfeeding person and partner for up to three weeks postpartum to address individual questions and concerns.
- LC support, with multiple prenatal visits, a hospital visit, and follow-up telephone calls for three months postpartum or until breastfeeding stopped.
- In-person hospital and home visits up to four months postpartum, with access to a 24-hour telephone hotline for breastfeeding support.
- Assessment and follow-up at a postpartum clinic staffed by nurses, LCs, and family physicians. The first appointment was scheduled at 48 hours post-discharge and included assessment of the breastfeeding dyad. Additional follow-up appointments were offered, as needed, to six weeks postpartum (52-56).

Breastfeeding peers provided different types of support throughout the perinatal period, including the following:

- One-on-one education and support using written materials (e.g., brochures), videos, and teaching tools (such as breastfeeding dolls to demonstrate breastfeeding techniques) during pregnancy.
- Individual support through in-person visits prior to discharge from the childbirth setting.
- Follow-up support and practical advice on breastfeeding via telephone, home visits, and support groups post-discharge. Educational materials were used, but less frequently than during the prenatal period (37).

Like nurses and the interprofessional team, peers require training in breastfeeding education in order to be effective (37). It can be useful for peers, nurses, and the interprofessional team who work together to be educated together: this will ensure they learn and provide consistent information to breastfeeding persons and families (37). Additionally, training can enhance the skills of peers in areas such as communication and breastfeeding knowledge, including strategies for resolving breastfeeding challenges (37).

Supporting Resources

RESOURCE	DESCRIPTION
BREASTFEEDING SUPPORT AND PROMOTION	
Breastfeeding [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2017 (updated 2018 Mar 21). Available from: https://www.cdc.gov/breastfeeding/promotion/	<ul style="list-style-type: none"> ■ Strategies to support breastfeeding for families, communities, health-care services, employers, and public health infrastructure are described.
BREASTFEEDING PEER SUPPORT	
La Leche League Canada [Internet]. Pickering (ON): La Leche League Canada; [date unknown]. Available from: https://www.lllc.ca/	<ul style="list-style-type: none"> ■ La Leche League Canada’s website includes breastfeeding information and other resources to promote breastfeeding through peer support.
INTEGRATING PEER SUPPORT WITH NURSES AND THE INTERPROFESSIONAL TEAM	
Best Start Resource Centre. Developing and sustaining breastfeeding peer-support groups [Internet]. Toronto (ON): Best Start Resource Centre/Health Nexus; 2015. Available from: https://www.beststart.org/resources/breastfeeding/B10_BF_Peer_Support_Programs_ENG_final.pdf	<ul style="list-style-type: none"> ■ A resource on the process of planning, initiating, and maintaining a volunteer program for breastfeeding peers.

INTEGRATING PEER SUPPORT WITH NURSES AND THE INTERPROFESSIONAL TEAM

Best Start Resource Centre. Breastfeeding peer support training toolkit. Toronto (ON): Best Start Resource Centre; 2016.

- A toolkit of strategies to prepare peer support volunteers.

Kaiser Permanente Medical Care Program. Improving hospital breastfeeding support implementation toolkit [Internet]. Oakland (CA): Kaiser Permanente Medical Care Program; 2013. Available from: <http://kpcmi.org/wp-content/uploads/2013/03/kaiser-permanente-breastfeeding-toolkit.pdf>

- A toolkit on breastfeeding promotion designed to assist in the planning and implementing of performance improvement projects and breastfeeding peer support in an inpatient setting.



Interventions to Support Initial and Exclusive Breastfeeding (Birth to Six Months)

RECOMMENDATION 2.9:

Facilitate informed decision-making regarding pacifier use.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1

Discussion of Evidence:

Evidence Summary

Limited evidence indicates that pacifier use did not significantly impact rates of exclusive or partial breastfeeding rates for infants to four months of age when started following childbirth or after lactation was established in breastfeeding persons who were highly motivated to breastfeed (68). To support informed decision-making on the use of pacifiers, breastfeeding persons need to be aware of the limitations of the evidence in this area: findings of no effect on duration of exclusive and partial breastfeeding were limited to infants to four months of age whose parents were highly motivated to breastfeed. The impact of pacifier use on short-term breastfeeding challenges and long-term infant health has not been determined (68). The use of pacifiers, especially in cases of frequent or prolonged use, can potentiate breastfeeding challenges such as “nipple confusion,” IMS, and a developed preference for the pacifier (68). As such, breastfeeding persons need to be supported to make an informed decision regarding pacifier use (68).

Historically, pacifiers have been used to support the biological need of infants to suck, including non-nutritive sucking, and to prevent feelings of pain and anxiety by producing a calming effect (68). The decision to use pacifiers by parents is influenced by other variables, including culture, motivation, and psychology (69). Pacifier use varies from none to frequent, with a corresponding impact on breastfeeding. For example, frequent and prolonged pacifier exposure may result in a preference for pacifiers versus the nipple of the breastfeeding person; in contrast, occasional or sparing pacifier use for short durations to calm an infant likely has no effect on breastfeeding frequency and milk supply (68).

Pacifier use has differences in sucking technique compared to breastfeeding: pacifier sucking requires short and fast sucks with minimal effort, while breastfeeding requires a wide mouth, tongue under the areola, and slow and deep sucks (68). Infants exposed to pacifiers may develop “nipple confusion” if they use a pacifier sucking technique at the breast, potentially leading to breastfeeding complications (such as reduced breast milk supply due to insufficient breast stimulation) (68). The resulting IMS may contribute to an increase in infant crying and fussiness, possibly leading to increased use of formula supplement (68). However, pacifier use also may extend the interval between breastfeeds and possibly increase milk intake, as the infant may be hungrier at the time of feeding (68). Finally, unrestricted and responsive cue-based breastfeeding without pacifier use can result in frequent breast stimulation and improved opportunities for the breastfeeding dyad to achieve effective positioning and latch to support breast milk production and increased breastfeeding success (68).

Benefits and Harms

A protective effect of pacifiers is a reduction of SIDS risk when used during nap or bedtime and after the establishment of breastfeeding (68). However, promoting pacifier use for this purpose is inconsistent with the WHO/UNICEF's recommendations, and while an association between pacifiers and a reduced risk of SIDS has been established, a causal relationship (i.e., cause and effect) has not (68). Other outcomes—such as breastfeeding difficulties or the effect of pacifier use on infant health over the long term (e.g., the risk of dental malocclusion, dental caries, or otitis media)—has not been determined due to a lack of research (68).

Values and Preferences

The RNAO expert panel stated that the use of pacifiers may lead parents to miss feeding cues and that increased non-nutritive stimulation from pacifier use may adversely impact breast milk supply. The expert panel attributed a higher value to nurses, the interprofessional team, and peers teaching parents to recognize and respond to the feeding cues of their infants.

Practice Notes

To facilitate informed decision-making regarding pacifier use and breastfeeding, perspectives from leading health authorities in North America include:

- The *BFI 10 Steps and WHO Code Outcome Indicators for Hospitals and Community Health Services* recommends that no pacifiers or teats be given to breastfeeding infants in order to support initiation and exclusivity and to avoid formula supplementation (7, 21).
- The American Academy of Pediatrics Task Force on Sudden Infant Death Syndrome (SIDS) supports offering pacifiers when the parent is placing the infant for sleep (68). However, the introduction of a pacifier should be delayed until breastfeeding is well established (68).
- Health Canada's *Joint Statement on Safe Sleep* indicates pacifiers provide a protective effect for SIDS and that infants who use a pacifier should be offered one at every sleep (70). However, breastfeeding should be well established before a pacifier is introduced (70).
- Recommendation 3.6 in RNAO's *BPG Working with Families to Promote Safe Sleep for Infants 0–12 Months of Age* (2014) supports parents or caregivers to make an informed decision regarding pacifier use. It emphasizes the responsibility of nurses to support informed decision-making through education and counseling. The evidence cited indicates the protective effect of pacifiers against SIDS, but it does note that this evidence had methodological limitations. For example, the protective role of a pacifier for SIDS is much smaller in studies that have compared the routine use of a pacifier to non-use. In relation to breastfeeding, it has been suggested that pacifiers have a negative association with breastfeeding duration (including a threefold reduction), but this outcome may depend on variables such as frequency and onset of use. Further details are available at <http://rnao.ca/bpg/guidelines/safe-sleep-practices-infants>

Supporting Resources

RESOURCE	DESCRIPTION
STATEMENTS OF HEALTH AUTHORITIES ON PACIFIER USE AND BREASTFEEDING	
Ponti M; Canadian Paediatric Society Community Paediatrics Committee. Recommendations for the use of pacifiers. <i>Paediatr Child Health</i> . 2003;8(8):515–9.	<ul style="list-style-type: none"> ■ A position paper from the Canadian Paediatric Society that recognizes pacifiers as a factor contributing to early weaning. It does not conclusively recommend pacifiers due to the multiple factors and biases influencing behaviour.
Public Health Agency of Canada. Joint Statement on Safe Sleep: Preventing Sudden Infant Deaths in Canada [Internet]. Ottawa (ON): Government of Canada; [date unknown] (updated 2018 Apr 23). Available from: https://www.canada.ca/en/public-health/services/health-promotion/childhood-adolescence/stages-childhood/infancy-birth-two-years/safe-sleep/joint-statement-on-safe-sleep.html	<ul style="list-style-type: none"> ■ A statement from North American experts on SIDS and SIDS prevention. ■ Pacifiers are thought to be protective against SIDS. The introduction of a pacifier should be delayed until breastfeeding is well established.
SYSTEMATIC REVIEWS AND PRIMARY RESEARCH ON PACIFIER USE AND BREASTFEEDING	
Buccini GDS, Perez-Escamilla R, Paulino LM, et al. Pacifier use and interruption of exclusive breastfeeding: systematic review and meta-analysis. <i>Matern Child Nutr</i> . 2017;13(3):e12384.	<ul style="list-style-type: none"> ■ A systematic review and meta-analysis investigating the association between pacifier use and exclusive breastfeeding interruption. ■ The review found a consistent association between pacifier use and exclusive breastfeeding interruption. ■ The review supports the WHO’s recommendation on pacifier use and the risk of poor breastfeeding outcomes.
Kair LR, Kenron D, Etheredge K, et al. Pacifier restriction and exclusive breastfeeding. <i>Pediatrics</i> . 2013;131(4):e1101–7.	<ul style="list-style-type: none"> ■ A retrospective study concludes restricted pacifier use in postpartum units is associated with decreased exclusive breastfeeding. ■ The results indicate that more studies are needed to determine the impact of pacifiers, if any, on the initiation and exclusivity of breastfeeding in the early newborn period.

Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Pregnancy and Birth to Two Years, or Longer)

RECOMMENDATION 2.10:

Provide breastfeeding education throughout the perinatal period and as long as breastfeeding continues:

- across a variety of settings and
- through diverse approaches, including those tailored to the needs of vulnerable populations.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 2; Moderate = 5

Discussion of Evidence:

Evidence Summary

Educational interventions support the intention, initiation, exclusivity, and continuation of breastfeeding and provide the opportunity to positively influence persons' choices. (71). Education can be provided in a variety of settings using diverse approaches, including those tailored to the needs of vulnerable populations^G, as discussed below.

Breastfeeding Education Increases Rates of Exclusivity and Continuation

Educational interventions improve exclusivity and continued breastfeeding rates when provided by nurses, the interprofessional team, and peers who have received training based on current evidence-based approaches and knowledge (38, 47, 72–73). Lack of knowledge by breastfeeding persons is an identified barrier and a modifiable risk factor (46). Educational interventions have been shown to be approximately twice as effective in promoting exclusive breastfeeding for up to six months when compared to routine care (71). Education positively impacts level of motivation to breastfeed and to persist and continue when experiencing challenges (47, 71). Education reduces the risk of not breastfeeding or not breastfeeding exclusively to six months, in an intervention provided by breastfeeding peers (71). Research suggests that primiparas and multiparas benefit from education, including those breastfeeding for the first time and those with previous experience (71, 73).

Initiate Breastfeeding Education during the Perinatal Period and as Long as Breastfeeding Continues

Educational interventions starting in pregnancy and continuing to postpartum were more effective than those delivered over a shorter time frame (19, 71). Education that involved three to six sessions provided by nurses and the interprofessional team created opportunities for education at critical times across the perinatal period; it provided opportunities over time as the breastfeeding person's needs changed (72). Greater effects on rates of any breastfeeding were seen at one to three months and at four to six months when educational interventions were provided (38, 71 - 72).

Provide Breastfeeding Education across a Variety of Settings

Education was effective in promoting exclusive breastfeeding when provided over multiple settings, such as primary or community care, particularly those designated as BFI (19). Additionally, education provided face-to-face in a person's home, in primary care or public health settings, or all three were effective at supporting

exclusive breastfeeding to six months (19). Home visits provide an opportunity to better assess and understand the breastfeeding persons' needs (71). Telephone contact was also found to be an effective method for providing breastfeeding education (19, 47, 71).

Use Diverse Approaches

Educational interventions that incorporate a variety of methods are more effective than singular approaches (74). For example, print materials, verbal discussion of questions or concerns, or using education dolls or teaching aids to demonstrate breastfeeding techniques can be effective (47).

Tailor to the Needs of Vulnerable Populations

Vulnerable populations identified in the evidence include racialized persons, new immigrants, and those with low income or low education (73). Each group may have lower breastfeeding rates due to challenges and barriers to accessing health-care services. Examples of educational interventions include access to lactation consultants, additional clinic or home visits provided by members of the interprofessional team and peers, family involvement, and participation in organized breastfeeding, nutrition, and parenting services that extend the availability and duration of supports (72).

Individual and group formats of breastfeeding education showed some effect in increasing rates of exclusive and any breastfeeding among vulnerable populations (73). Some evidence, however, suggests that individual prenatal education may be more effective, as group formats do not consistently recognize or address barriers such as language, learning styles, or group power dynamics (73). On contrast, individualized education can be tailored to a person's needs and unique circumstances. Further studies are needed to increase understanding of the unique needs of vulnerable populations to determine which breastfeeding educational interventions are most effective (73).

Appendix D describes strategies to support the breastfeeding needs of vulnerable populations, such as persons with low income and those with low health literacy.

Benefits and Harms

Educational interventions in breastfeeding need to be provided in a holistic manner that recognizes the needs of the breastfeeding person (71). As such, the face-to-face delivery of breastfeeding education that includes components of information, instruction, practical advice, and emotional support maximizes the potential benefits of education (71).

Values and Preferences

The expert panel attributed a higher value to supporting breastfeeding persons' informed decision-making regarding infant feeding methods and breastfeeding self-management. This aligns with Step 3 of the *BFI 10 Steps and WHO Code Outcome Indicators for Hospitals and Community Health Services*, which focuses on informing breastfeeding persons and their families about the benefits and process of breastfeeding (21).

To be most effective, breastfeeding education needs to be flexible and adaptable to a range of factors, such as changing needs and priorities; the stage of lactogenesis; the developmental phase of the newborn, infant, and young child; and the presence or absence of any complications or concerns. Education topics need to include the importance of breastfeeding beyond the first six months of infancy.

Practice Notes

Educational approaches must consider the available resources and the needs and priorities of the breastfeeding person. Evidence highlights multiple breastfeeding education interventions that were effective, including the following:

- prenatal classes;
- workshops;
- peer counseling, including offering advice and answering questions;
- practical skills;
- web-based education;
- text and voice messages to cell phones;
- videos;
- songs;
- theatrical presentations;
- telephone calls by nurses, the interprofessional team, or trained volunteers;
- group or individual sessions by a LC; and
- booklets or other written materials (47, 49, 71, 74).

There also are a variety of useful topics of discussion for breastfeeding education, including a focus on breastfeeding principles, breast milk production, infant nutrition and health, social support engagement, and methods for managing breastfeeding challenges (47, 71, 74 - 75). Examples are listed below.

Breastfeeding principles

- The importance of breastfeeding.
- Recommended breastfeeding practices, including initiation, exclusivity, and continuation.
- Responsive cue-based breastfeeding.

Breast milk production

- Supply and demand in relation to establishing and maintaining breast milk production.
- The promotion of frequent breastfeeding in the early postpartum to promote optimal breast milk production and reduced risk of milk stasis and engorgement.
- EBM and safe storage techniques.
- The benefits of avoiding bottles and supplementation to support the initiation and establishment of lactation.
- Indicators of effective milk supply and milk transfer.

Infant nutrition and health

- Parameters of healthy infant growth and development.
- Importance of colostrum to infant health.

Engaging social support

- The role of partner and family support as a facilitator for breastfeeding.
- Accessing community breastfeeding support services.

Managing breastfeeding challenges

- Strategies to prevent and manage common lactation problems, such as breast engorgement or nipple pain.
- The importance of ongoing breastfeeding support and assistance up to six months postpartum to address needs, challenges, or concerns and breastfeeding exclusivity.
- Education and training can be effective as a low-technology tool to support breastfeeding when it is provided throughout the perinatal period. Education needs to include all aspects of breastfeeding including both its importance and challenges. Breastfeeding persons need to develop the knowledge and skills to be able to recognize common problems and learn practical strategies for managing day-to-day demands.

Supporting Resources

RESOURCE	DESCRIPTION
BREASTFEEDING EDUCATION	
Public Health Agency of Canada. 10 great reasons to breastfeed [Internet]. Ottawa (ON): Public Health Agency of Canada; 2009. Available from: http://www.phac-aspc.gc.ca/hp-ps/dca-dea/stages-etapes/childhood-enfance_0-2/nutrition/pdf/reasons-raisons-eng.pdf	<ul style="list-style-type: none"> ■ An educational resource promoting the benefits of breastfeeding for the breastfeeding person and the infant up to two years and beyond.
Community Health Training Institute. Breastfeeding Promotion in the Prenatal Setting [Internet]. [place unknown]: Community Health Training Institute; c2013–2018. Available from: http://hriainstitute.org/breastfeedingcme/cme-2/section/breastfeeding-promotion-in-the-prenatal-setting	<ul style="list-style-type: none"> ■ Prenatal strategies for health-care providers to promote breastfeeding for each trimester. ■ Examples of open-ended questions to provide anticipatory guidance to pregnant persons and their families regarding infant feeding.
Champlain Maternal Newborn Regional Program. Prenatal breastfeeding key messages: health care provider tool [Internet]. Ottawa (ON): Champlain Maternal Newborn Regional Program; 2017. Available from: https://instantweb.secure-form2.com/uploads/documents//Key_Messages_V1_Sept_17_OLS_FINAL.pdf	<ul style="list-style-type: none"> ■ A list of questions and important points regarding breastfeeding that a health-care provider could integrate into prenatal visits.

SYSTEMATIC REVIEW ON THE IMPACT OF BREASTFEEDING EDUCATIONAL INTERVENTIONS

Wouk K, Tully KP, Labbok MH. Systematic review of evidence for Baby-Friendly Hospital Initiative Step 3. *J Hum Lact.* 2017;33(1):50–82.

- A systematic review describing interventions related to educating pregnant persons about the benefits and management of breastfeeding.
- Findings suggest that prenatal interventions—delivered alone or in combination with intrapartum and/or postpartum components—are effective at increasing the initiation, exclusivity, and continuation of breastfeeding when they combine both education and interpersonal support, and when partners or family are involved.

IMPACT OF PRENATAL AND POSTPARTUM BREASTFEEDING EDUCATION ON BREASTFEEDING OUTCOMES

Remple LA, Moore KC. Peer-led prenatal breastfeeding education: a viable alternative to nurse-led education. *Midwifery.* 2012;28(1):73–9.

- A study comparing breastfeeding outcomes for persons attending a peer-led breastfeeding class to persons attending one presented by a nurse in a hospital setting.
- Both groups found the classes to be helpful. The peer-led classes were found to be more effective in terms of practical suggestions to support breastfeeding.

Pannu PK, Giglia RC, Binns CW, et al. The effectiveness of health promotion materials and activities on breastfeeding outcomes. *Acta Paediatr.* 2011;100(4):534–7.

- Persons who received one-on-one prenatal education on breastfeeding were less likely to cease breastfeeding before six and 12 months postpartum.
- Participants received health education materials, including pamphlets and videos on breastfeeding. Questions pertaining to breastfeeding, including technique, were addressed.

SUPPORTING INFORMED DECISION-MAKING REGARDING INFANT FEEDING USE OF BREAST MILK SUBSTITUTES

BFI Strategy for Ontario. Informed decision making: having meaningful conversations regarding infant feeding [Internet]. [place unknown]: BFI Strategy for Ontario; 2017. Available from: http://breastfeedingresourcesontario.ca/sites/default/files/pdf/Res_Strategy_IDM_Toolkit_EN.pdf

- A tool with information and guidance on how breastfeeding persons can be supported to make an informed decision regarding infant feeding.
- Topics include methods of having a person-centred discussion and ways to reduce infant feeding risks.

Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Birth to Two Years, or Longer)

RECOMMENDATION 2.11:

Include family members, such as partners and grandmothers, in breastfeeding education and support.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1; Moderate = 2

Discussion of Evidence:

Evidence Summary

Support provided by family members such as partners, grandmothers, sisters, and friends is positively associated with the initiation, exclusivity, and continuation of breastfeeding (37, 47, 50). Family involvement should be based on the breastfeeding person's preferences (50). The inclusion of family recognizes the influence of the sociocultural environment which may be a facilitator or barrier and decisions may not be autonomous (19, 71 - 72). A lack of support from family and a social network can negatively influence exclusive and continued breastfeeding rates (72). For example, Latinas in the USA who had low social support were nearly three times more likely to stop breastfeeding (72).

Partners are the most important source of support, influencing decisions regarding initiation, continuation, and expectations of breastfeeding (37, 50). Research suggests increased exclusive and continued breastfeeding amongst primiparas whose partners were supportive and helped with daily activities, such as infant care and housework (50). Partner support reduced the risk of stress related to parenting and postpartum mood disorders, including depression (50). Providing partners with education on breastfeeding practices and common breastfeeding difficulties was associated with higher rate of exclusive breastfeeding and decreased perceived IMS in the first six months postpartum (37).

Support from grandmothers and partners was positively associated with high levels of satisfaction with breastfeeding (50). Grandmothers can influence breastfeeding persons' decisions on whether to initiate and continue breastfeeding, attitudes about breastfeeding, and the timing of introduction of solids (37).

Social support from family members can be helpful during the postpartum period when consistent with the needs of the breastfeeding person (50). Partners and grandmothers must recognize postpartum is a stressful time due to the physical recovery from childbirth, caring for a newborn, and transitioning to the role of parent (50). Nurses, the interprofessional team, and peers can help breastfeeding persons to identify positive sources of support and provide suggestions on how to manage stressors caused by family members, such as appearing to be demanding, having mismatched expectations, or lacking understanding (50).

Benefits and Harms

When provided consistently, the presence of social support from partners, grandmothers, and others can positively impact breastfeeding continuation, the ability to care for an infant, and the transition to a parenting role (37, 50).

Values and Preferences

The RNAO expert panel attributed a higher value to the integration of family members, such as partners and grandmothers, into education and support to help achieve exclusive and continued breastfeeding. The inclusion of family members anchors breastfeeding as a familial experience and recognizes the needs of the breastfeeding person beyond physiology in order to include psychological, social, and cultural influences.

Practice Notes

The integration of family into breastfeeding support and education facilitates psychosocial support for the breastfeeding person (47, 50). Nurses and the interprofessional team can provide family members with the following general suggestions on how to support the breastfeeding person:

- Provide reassurance and encouragement.
- Provide practical help with tasks (e.g., housework) to reduce stress levels in the home.
- Work together as a couple, if applicable, on infant care to strengthen the relationship as parents and as a family unit.
- Listen to doubts and concerns about breastfeeding.
- Seek positive breastfeeding and parenting role models within the family or support network, where possible. In situations where these do not exist, actively seek support from peers or others who are breastfeeding (47, 50).

Supportive Resources

RESOURCE	DESCRIPTION
IMPORTANCE OF PARTNER BREASTFEEDING SUPPORT	
HealthyFamilies BC. Partner Support for Breastfeeding [Internet]. [place unknown]: HealthyFamilies BC; 2013. Available from: https://www.healthyfamiliesbc.ca/home/articles/partner-support-breastfeeding	<ul style="list-style-type: none"> ■ Examples of how partners can support breastfeeding.
Mannion CA, Hobbs AJ, McDonald SW, et al. Maternal perceptions of partner support during breastfeeding. <i>Int Breastfeed J.</i> 2013;8:4.	<ul style="list-style-type: none"> ■ A descriptive cross-sectional study⁶ from Calgary, Alberta, Canada, that examines the perceptions of partner support during breastfeeding. ■ The results indicate that breastfeeding persons who report active support from their partners had higher levels of BSE.
Dad Central Ontario. Dad's Role in Breastfeeding [Video]. [place unknown]: Dad Central Ontario; c2018. Available from: https://newdadmanual.wordpress.com/2016/11/05/dads-role-in-breastfeeding/	<ul style="list-style-type: none"> ■ A video highlighting the positive impact that a father's support can have on breastfeeding outcomes. ■ Tips on how to provide practical and emotional support. ■ The website also includes links to other videos and resources for fathers.

IMPORTANCE OF GRANDMOTHER/GRANDPARENT BREASTFEEDING SUPPORT

LLC Blog. Thursday's Tip: 10 Things Grandparents can do to support Breastfeeding [Internet]. Pickering (ON): La Leche League Canada, 2015. Available from: <https://www.llc.ca/thursdays-tip-10-things-grandparents-can-do-support-breastfeeding>

- A tip sheet on how grandparents can support breastfeeding, including encouraging the person to feel comfortable breastfeeding and caring for the grandchild as requested.

Negin J, Coffman J, Vizintin P, et al. The influence of grandmothers on breastfeeding rates: a systematic review. *BMC Preg Childbirth*. 2016;16:91.

- A systematic review of 13 studies on the influence of grandmothers on breastfeeding.
- The results indicate that grandmothers have an influence on exclusive breastfeeding rates and should be included in interventions aimed at supporting exclusive breastfeeding.

BREASTFEEDING SUPPORT BY FAMILY MEMBERS AND THE BROADER COMMUNITY

Cochrane Library. Enabling breastfeeding for mothers and babies [Internet]. John Wiley & Sons; c1999–2018. Available from: <http://www.cochranelibrary.com/app/content/special-collections/article?doi=10.1002/14651858.10100214651858>

- A Cochrane Special Collection of systematic reviews examining breastfeeding support and enablers that includes family members.

U.S. Department of Health and Human Services. The Surgeon General's call to action to support breastfeeding [Internet]. Washington (DC): U.S. Department of Health and Human Services, Office of the Surgeon General; 2011. Available from: <https://www.surgeongeneral.gov/library/calls/breastfeeding/calltoactiontosupportbreastfeeding.pdf>

- A resource developed from the USA's Department of Health and Human Services to describe a society-wide approach to support breastfeeding persons and infants, including community programs.

Education Recommendations

RESEARCH QUESTION #3:

What education or training is required for nurses, the interprofessional team, and peers to support breastfeeding initiation, exclusivity, and continuation?

Interventions to Support Initial and Exclusive Breastfeeding (Throughout the Perinatal Period to Six Months Postpartum)

RECOMMENDATION 3.1:

Provide continuing education on breastfeeding to nurses, the interprofessional team, and peers that incorporates theoretical knowledge and practical skills.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: Moderate = 3

Discussion of Evidence:

Evidence Summary

Continuing education on breastfeeding enables nurses, the interprofessional team, and peers to remain current in evidence-based best practices (76). Globally, less than half of nurses working in pediatric or neonatal units receive any breastfeeding education in their undergraduate curricula or through continuing education (76). This contradicts the WHO's recommendation that all health-care providers caring for pregnant and postpartum persons receive mandatory breastfeeding education for a minimum of 18 hours (76). Education courses must also involve nurses and the interprofessional team, including those working in prenatal settings, because breastfeeding intention (which directly influences rates of exclusivity and continuation) is often determined during pregnancy (77).

Research indicates that education across health sectors and geographical settings—including Canada, Europe, South America, and the USA—positively impacts breastfeeding initiation and exclusivity rates. For example, an increase in breastfeeding initiation within one hour of childbirth was seen following breastfeeding training in acute perinatal care settings (76). Further, an increase in rates and duration of exclusive breastfeeding was seen, in community, acute, and primary care settings following an education intervention (76).

Changes in clinical practice were demonstrated by nurses and the interprofessional team following education interventions (76, 78). Reduced use of bottle feeding and formula supplementation and increased awareness of their potential negative impacts on breastfeeding (76–78). To prevent hypoglycemia, responsive cue-based breastfeeding, versus formula, was successfully implemented with healthy term infants (76). More cup feeding—or a combination of cup and bottle feeding—were used as alternatives to bottle feeding only after staff training (76). Nonetheless, the level of use of commercial formula products post-educational intervention remains higher than the WHO recommendation (74). This may be related to reluctance from staff to change practices to align with the evidence (76–78).

Changes in practice were noted at the point of care following breastfeeding education (76-77). More time was spent talking to breastfeeding persons about the importance of breastfeeding, teaching breastfeeding skills, demonstrating positioning and latch, and conducting clinical assessments (76, 78). Staff reported increased confidence in their knowledge and ability to support breastfeeding persons following educational interventions (76).

Education positively affected nurses and the interprofessional team's attitudes towards breastfeeding: they indicated more value for breastfeeding and its benefits (76, 78). In terms of breastfeeding management, they were more flexible and less rule-orientated in their approaches (76, 78). Education increased understanding and sensitivity for the breastfeeding person (76, 78). Nurses and members of the interprofessional team supported persons to make informed decisions regarding infant feeding that were perceived as empowering and supportive of choice (as opposed to being directional) (76, 78).

To effectively support breastfeeding persons, educational interventions must include theoretical training of breastfeeding principles and skills application (77). Nurses and the interprofessional team need to increase their knowledge on the management of common breastfeeding complications, such as sore nipples and perceived IMS (77). To be most effective, they must enhance their clinical skills in areas such as assisting with positioning, latch, and hand expression (77). Additionally, skills in listening, nonverbal communication, open-ended question use, non-judgmental attitudes, reflection, and empathy must be included in education (76).

Benefits and Harms

Education must be ongoing, as its beneficial effects on breastfeeding outcomes diminished over time (76). Short, low-cost booster sessions can be implemented to improve knowledge and skills, but these should not be used in lieu of foundational breastfeeding education that teaches core competencies, such as the 18-hour course developed by WHO (76).

Values and Preferences

The RNAO expert panel attributed a higher value to nurses, the interprofessional team, and peers receiving continued breastfeeding education in theoretical concepts and application at the point of care. This ensures that knowledge and skills remain current and that care approaches can be more consistently applied.

Practice Notes

Educational formats for breastfeeding for nurses, the interprofessional team, and peers varied, and they include self-study modules, lectures, discussion, videos, and practical exercises (such as role-playing) (78). Tools used to measure changes in breastfeeding knowledge include questionnaires, case studies about breastfeeding management, multiple choice questions, and assessment of clinical and counselling skills in breastfeeding consultations (78). Despite this, there is a lack of high-quality evidence to inform best practices in breastfeeding pedagogical approaches for nurses, the interprofessional team, and peers (78).

A variety of course designs were used in the educational interventions for nurses, the interprofessional team, and peers. Many were 18 hours or longer, including the WHO breastfeeding course based on BFI principles, which is recognized as the gold standard; others, however, were shorter (76). The most effective number of hours for breastfeeding training has not been established, although longer educational interventions were positively associated with improved breastfeeding outcomes (76-77).

For peers, breastfeeding training and education is essential, and it must include the development of counselling skills, such as active listening and building rapport, in order to support empowerment of the breastfeeding person (76).

Supporting Resources

RESOURCE	DESCRIPTION
BREASTFEEDING EDUCATIONAL RESOURCES FOR NURSES, THE INTERPROFESSIONAL TEAM, AND PEERS	
Registered Nurses' Association of Ontario. Breastfeeding e-learning [Internet]. Toronto (ON): Registered Nurses' Association of Ontario; 2011. Available from: http://rnao.ca/bpg/courses/breastfeeding-e-learning	<ul style="list-style-type: none"> ■ An e-learning course to assist nurses, other health-care professionals, and organizations access to education that is appropriate to their role in promoting breastfeeding.
Breastfeeding E-Learning Modules [Internet]. Toronto (ON): City of Toronto; c1998–2018. Available from: https://www.toronto.ca/community-people/health-wellness-care/information-for-healthcare-professionals/maternal-child-health-info-for-doctors/breastfeeding/breastfeeding-e-learning-modules/	<ul style="list-style-type: none"> ■ A 13-part e-Learning series based on a public health unit's breastfeeding protocols for health-care providers. ■ The modules were developed to support health-care professionals and organizations in accessing education for the provision of evidence-based breastfeeding services.
Naylor AJ, Wester RA, eds. Lactation management self-study modules Level 1. 4th ed. [Internet]. Shelburne (VT): Wellstart International; 2013. Available from: http://www.wellstart.org/Self-Study-Module.pdf	<ul style="list-style-type: none"> ■ An education resource designed for physicians, nurses, and nutrition experts to support knowledge and clinical services for breastfeeding persons. ■ The resource is self-study, with pre- and post-tests to measure knowledge transfer on a variety of breastfeeding topics, including positioning, latch, and milk transfer.
Watson J. Strategies to promote breastfeeding exclusivity in a tertiary perinatal centre [Internet]. Toronto (ON): Sunnybrook Health Science Centre; 2017. Available from: http://www.tegh.on.ca/bins/content_page.asp?cid=3-22-6657-6666&lang=1	<ul style="list-style-type: none"> ■ An archived webinar presentation on strategies to promote breastfeeding exclusivity in a tertiary perinatal centre.
BFI 20-Hour Course: Clinical Practice Options [Internet]. Toronto (ON): BFI Strategy for Ontario; 2018. Available from: http://breastfeedingresourcesontario.ca/resource/bfi-20-hour-course-clinical-practice-options	<ul style="list-style-type: none"> ■ A breastfeeding educational resource developed for managers and learners in situations where there are limited breastfeeding clinical placement options.

Organization and System Policy Recommendations

RESEARCH QUESTION #4:

What are optimal practices, programs, and policies for health-care organizations and the broader community, including places of work, to support initial, exclusive, and continued breastfeeding?

Interventions to Support Initial and Exclusive Breastfeeding (Throughout the Perinatal Period to Six Months Postpartum)

RECOMMENDATION 4.1:

Consider integrating lactation consultants in the provision of care to the breastfeeding dyad throughout the perinatal period in health services and local communities.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: Moderate = 1

Discussion of Evidence:

Evidence Summary

Research examining education and support from LCs across the perinatal period showed improved rates of initiation, any breastfeeding, and exclusivity up to 3 months postpartum (38). The studies included LCs with varied training including designation as International Board Certified Lactation Consultants (IBCLCs^G), breastfeeding experts without certification, and lactation counselors (38).

LCs provide services throughout the perinatal period such as education, counselling, verbal encouragement, and support to address breastfeeding barriers and goals (38). In postpartum, education and support interventions incorporated psychological, financial, and informational components following childbirth to transitioning back to work or school, where applicable (38). LCs provided education to nurses and the interprofessional team on complex or challenging breastfeeding situations to support their knowledge and skills (38).

Services by LCs can be offered in a variety of health-care settings, such as clinics, hospitals in rural and urban areas, prenatal and postpartum health and community services, and in personal residences (38). Service delivery can be provided either face-to-face or via telephone (38).

Benefits and Harms

Services by LCs in postpartum care resulted in positive outcomes, including improved LATCH scores and fewer complications (such as nipple pain and trauma). Reduced incidence of mastitis was not evident when care from LCs was available (38).

The overall effects of LC care on breastfeeding outcomes are positive but the studies had important limitations that impact the generalizability of the findings (38). For example, variances were seen in the LCs training backgrounds and the types of interventions provided (e.g., education, versus education and support). Many of the studies were set in urban centres in university hospitals with participants recruited from low-income populations. Optimal frequency and timing of LC support are not known. Therefore, consideration of this action as a recommendation at the organization and system policy level is warranted (38).

Values and Preferences

The RNAO expert panel attributed a higher value to the integration of LCs into acute perinatal care settings, primary care, public health, and community services. This provision supports continued access to breastfeeding expertise for breastfeeding persons, their families, nurses, and the interprofessional team beyond the first few days following birth. Such support, where needed, may potentially increase rates of exclusive breastfeeding to six months.

Practice Notes

LCs should be integrated into breastfeeding education and support programs in a variety of health-care settings, particularly those serving at-risk breastfeeding populations, including low-income families and minorities (38).

LCs should engage in breastfeeding education for nurses and the interprofessional team to support the initiation and exclusivity of breastfeeding (38).

In order to improve access to LC services, protocols and policies are needed to facilitate service uptake by staff and their integration into prenatal care. This should occur prior to discharge following childbirth and throughout postpartum, as indicated (38)



Supporting Resources

RESOURCE	DESCRIPTION
LACTATION CONSULTANT SERVICES	
Kent J, Ashton E, Hardwick C, et al. Nipple pain in breastfeeding mothers: incidence, causes and treatments. <i>Int J Environ Res Public Health</i> . 2015;12(10):12247–63.	<ul style="list-style-type: none"> ■ A study examining the frequency of consultations with LCs for nipple pain. ■ Nipple pain was found to be one of the most common reasons for lactation consultants visits. It was often related to ineffective positioning and latch, tongue tie, infection, flat or inverted nipples, mastitis, or vasospasm.
INTERNATIONAL AND CANADIAN LACTATION CONSULTANT ASSOCIATIONS	
International Lactation Consultant Association® [Internet]. Raleigh (NC): International Lactation Consultant Association®; c2018. Available from: http://www.ilca.org/home	<ul style="list-style-type: none"> ■ The International Lactation Consultant Association® (ILCA) is the member association for IBCLCs. Its core values include knowledge, diversity, and equity. ■ ILCA's vision is world health transformed through breastfeeding and skilled lactation care.
Canadian Lactation Consultant Association [Internet]. Vancouver (BC): Canadian Lactation Consultant Association; [date unknown]. Available from : http://clca-accl.ca/	<ul style="list-style-type: none"> ■ The Canadian Lactation Consultant Association is the national professional association for IBCLCs in Canada.
EDUCATIONAL RESOURCES FOR LACTATION CONSULTANTS	
Lactation Education Accreditation and Approval Review Committee. Lactation management courses [Internet]. Riverside (CA): Lactation Education Accreditation and Approval Review Committee: 2018. Available from: http://www.leaarc.org/download/LEAARC_ApprovedCourses.pdf	<ul style="list-style-type: none"> ■ The Lactation Education Accreditation and Approval Review Committee (LEAARC) is sponsored by ILCA and the International Board of Lactation Consultant Examiners® (IBLCE). ■ LEAARC and its sponsors cooperate to establish, maintain, and promote appropriate standards of quality for breastfeeding and lactation education and to provide recognition for programs and courses that meet or exceed the minimum criteria.
International Board of Lactation Consultant Examiners [Internet]. Fairfax (VA): International Board of Lactation Consultant Examiners: c2018. Available from: https://iblce.org/	<ul style="list-style-type: none"> ■ The website of the IBLCE® includes steps to certify and recertify as an IBCLC.

Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Throughout the Perinatal Period to Two Years, or Longer)

RECOMMENDATION 4.2:

Routinely implement the provisions of the Baby-Friendly Initiative and the World Health Organization's "*International Code of Marketing of Breast-Milk Substitutes*" within the health-care setting. Seek Baby-Friendly Initiative designation, where applicable.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1; Moderate = 2

Discussion of Evidence:

Evidence Summary

As a global, structured, and multi-faceted breastfeeding program and system-level practice, the BFI is positively associated with (a) higher rates of breastfeeding initiation and (b) increased rates and lengths of any, exclusive, and continued breastfeeding when compared to standard care (79–81). Although not all studies showed significant differences in breastfeeding outcomes, the BFI has demonstrated a positive impact on breastfeeding initiation and exclusivity in developed and developing countries (79–81). No negative impacts on breastfeeding have been seen due to the implementation of BFI principles (79).

Positive contributory factors of the BFI include the implementation of all or some of the WHO/UNICEF's "*Ten Steps to Successful Breastfeeding*" (81). (See **Table 6** for more details). A positive association was found between the number of the BFI clinical practices integrated into clinical practice and breastfeeding outcomes, including increased rates of initiation and any breastfeeding and exclusive breastfeeding over a longer time period (81). The BFI clinical practice of community support ("*Ten Steps to Successful Breastfeeding*" - Step 10), following hospital discharge, is associated with longer exclusive breastfeeding (81). When formula products are introduced in hospitals, higher rates of earlier breastfeeding cessation are seen (79, 81). In contrast, in BFI-designated facilities where in-hospital supplementation was avoided unless medically indicated or following an informed decision-making process, breastfeeding persons were more likely to meet their breastfeeding goals and intentions established during pregnancy ("*Ten Steps to Successful Breastfeeding*" - Step 6) (81).

The BFI program is more beneficial in settings with lower rates of initiation and exclusive breastfeeding. When higher rates (greater than 75%) are evident, the program may not significantly impact breastfeeding outcomes, therefore redirecting resources to the community or other settings should be considered.

Resources to support informed decision-making regarding infant feeding are included in the Supporting Resources section at the end of this recommendation.

Benefits and Harms

The implementation of BFI clinical practices are associated with reductions in infant gastrointestinal infections and atopic eczema; for breastfeeding persons, they are associated with higher positive attitudes towards breastfeeding and increased perception of breastfeeding support from staff (79).

Values and Preferences

The RNAO expert panel attributed a higher value to the BFI as a global strategy to support the initiation, exclusivity, and continuation of breastfeeding that recognizes targeted supports and resources at the organizational level. As a planned strategy, it strongly aligns with the goal of exclusive breastfeeding to six months and continued breastfeeding to two years or longer, incorporating nurses, the interprofessional team, and peers.

Practice Notes

Health sectors where BFI designation is available include acute and community care (including public health units, community health centres, and primary care centres). In 2017, WHO estimated that only 10 per cent of all newborns in the world were delivered in BFI designated health facilities (9). In settings where BFI-designation is not available, health facilities are encouraged to adopt BFI principles in recognition of their evidence-based guidance and their established benefits to breastfeeding outcomes.

To support the initiation and exclusivity of breastfeeding, all of the BFI principles must be integrated into perinatal health-care settings, both within and beyond acute care. The inclusion of community settings, such as primary care and public health, better ensures support to populations and the integration of health-care resources beyond hospital discharge (81).

Supporting Resources

RESOURCE	DESCRIPTION
BFI PROMOTION AND ADVOCACY	
World Health Organization. Protecting, promoting, and supporting breastfeeding in facilities providing maternity and newborn services guideline [Internet]. Geneva (CH): World Health Organization; 2018. Available from: http://www.who.int/nutrition/publications/guidelines/breastfeeding-facilities-maternity-newborn/en/	<ul style="list-style-type: none"> ■ An updated guide on the revised BFI from the first revision of <i>"Ten Steps to Successful Breastfeeding"</i> since 1991. ■ This resource is intended for governments and the national managers of maternal and child health, breastfeeding, and BFI-related programs.
BFI Implementation Toolkit [Internet]. Toronto (ON): BFI Strategy for Ontario; 2014. Available from: http://breastfeedingresourcesontario.ca/resource/bfi-implementation-toolkit	<ul style="list-style-type: none"> ■ A toolkit describing the steps needed to initiate or maintain BFI designation.

BFI PROMOTION AND ADVOCACY

Baby-Friendly Video Story Series [Internet]. Toronto (ON): BFI Strategy for Ontario; 2017. Available from: <http://breastfeedingresourcesontario.ca/resource/baby-friendly-video-story-series>

- A video series highlighting components of the “*BFI 10 Steps and the WHO Code Outcome Indicators for Hospitals and Community Health Services.*”
- Health-care organizations and breastfeeding persons share their stories to facilitate changes to implement BFI best practices and improve patient care outcomes.

BFI Strategy for Ontario. Bringing Evidence to Practice: Introducing the Baby-Friendly Initiative [Video]. Toronto (ON): [MJM Media]; 2017. Available from: <https://youtu.be/XeUYYfMZtTs>

- A video designed to guide health-care providers and organizations on how to implement the BFI.
- Topics include (a) the importance of breastfeeding, (b) existing breastfeeding supports in Canada, (c) benefits of BFI for breastfeeding persons and their babies, and (d) steps organizations can take to begin the BFI designation process.

Hospital Actions Affect Breastfeeding [Internet]. Atlanta (GA): Centers for Disease Control and Prevention; 2015 (updated 2015 Oct 6). Available from: <https://www.cdc.gov/vitalsigns/breastfeeding2015/index.html>

- Examples of strategies that hospitals can take to promote breastfeeding, including implementation of “*Ten Steps to Successful Breastfeeding*” and working towards BFI designation.

Baby-Friendly Initiative Ontario [Internet]. [place unknown]: Baby Friendly Initiative; c2018. Available from: www.bfiontario.ca

- BFI Ontario is a multidisciplinary committee consisting of health-care professionals, service providers, and consumers within Ontario, Canada, who are interested in protecting, promoting, and supporting breastfeeding by implementing BFI.

INTERNATIONAL CODE OF MARKETING OF BREAST-MILK SUBSTITUTES

<p>World Health Organization. International code of marketing of breast-milk substitutes. Geneva (CH): World Health Organization; 1981.</p>	<ul style="list-style-type: none"> ■ The aim of the Code is the provision of safe and adequate nutrition for infants and the promotion and protection of breastfeeding. ■ It applies to the marketing of breast milk substitutes, including formula, bottles, and teats.
<p>World Health Organization. Maternal, newborn, and child nutrition. Sixty-ninth World Health Assembly. A69/7 (2016 Apr 29). Available from: http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_7-en.pdf?ua=1</p>	<ul style="list-style-type: none"> ■ A report from the 69th WHA on maternal, infant, and young child nutrition, including breastfeeding. ■ The report includes recommendations on ending the inappropriate promotion of foods for infants and young children. It also reports on the global progress being made on implementing the Code and various WHA resolutions.
<p>World Health Organization. The international code of marketing of breast-milk substitutes—2017 update. Frequently asked questions. Geneva (CH): World Health Organization; 2017. Available from: http://www.who.int/iris/bitstream/10665/254911/1/WHO-NMH-NHD-17.1-eng.pdf?ua=1</p>	<ul style="list-style-type: none"> ■ The purpose of this booklet is to provide easy-to-read details on questions pertaining to the Code. ■ It is intended for policy-makers, health workers, the public, and anyone else who is concerned with the Code.

Interventions to Support Initial, Exclusive, and Continued Breastfeeding (Throughout the Perinatal Period to Two Years, or Longer)

RECOMMENDATION 4.3:

Implement breastfeeding support in the workplace, including parental leaves of absence and accommodations for breastfeeding persons.

Level of Evidence for Summary: Ia

Quality of Evidence for Summary: High = 1; Low = 2

Discussion of Evidence:

Evidence Summary

Parental Leaves of Absence and Breastfeeding Outcomes

For those working outside of the home, exclusive and continued breastfeeding is influenced by the availability and length of parental LOA. Research indicates a positive association between the length of a parental LOA and the initiation, exclusivity, and continuation of breastfeeding, and increased breastfeeding intention (82-83). In Canada, for example, when the parental LOA was extended from 25 weeks to one year in 2000, rates of breastfeeding increased one third per month for each additional month not at work (82-83). In the USA, persons on a parental LOA who had not returned to paid work at nine months postpartum were more likely to be breastfeeding beyond six months (83). Breastfeeding persons with a parental LOA of 13 weeks or higher had the highest rates of breastfeeding initiation, and each additional week of parental LOA resulted in an additional half week of breastfeeding in the USA (82-83).

In comparison, shorter parental LOAs were positively associated with decreased length of any breastfeeding, including exclusive breastfeeding; they also are associated with earlier cessation (82-83). Breastfeeding persons in the USA who returned to work within one to six weeks following childbirth had the lowest breastfeeding rates and were significantly less likely to continue to breastfeed upon return to work than to those with longer parental LOAs (82-83). This was more evident in persons working in non-managerial roles, inflexible jobs, or jobs with high levels of psychological stress (82). Those with longer parental LOAs who tended to have an increased control over their work environments were more likely to be Caucasian, highly educated, and work in professional roles (82). These results demonstrate the influence of social determinants of health in breastfeeding outcomes, such as poverty mitigation, workplace equity, and enforcement of labour standards.

Breastfeeding Workplace Policies Supporting Accommodations for Breastfeeding Persons

To continue breastfeeding upon return to work, it is necessary to have consistently enacted and mandated workplace policies that support accommodations (83). Policies must grant employees flexible time and location for pumping and/or breastfeeding and they must be enforced with consequences for employers in cases where they are not enacted (83).

Breastfeeding persons must be supported and encouraged to take break times for breastfeeding, especially those in lower paid jobs, as they sometimes opt to not take their lactation breaks for pumping due to fear of consequences or reprisals from their employers (83). This is important as guaranteed breaks for pumping resulted in persons being two to six times more likely to continue to breastfeed (83).

Other strategies to support continued breastfeeding may include alternate work spaces, telecommuting, or part-time work (where applicable). Additionally, work environments with on-site child care, employee benefits that include coverage of lactation management services, and private spaces for pumping can be helpful (83).

Benefits and Harms

An associated benefit with a parental LOA is improved health for the breastfeeding person, including improved mental health and decreased risk of postpartum mood disorders. This is relevant because postpartum mood disorders, including postpartum depression, can negatively impact exclusive and continued breastfeeding (82).

For infant and child health, research demonstrates a causal relationship between early return to work and reduced immunization and increased behaviour problems (82). Longer parental LOAs are associated with a beneficial reduction in infant and child mortality (82).

Values and Preferences

The RNAO expert panel attributed a higher value to accommodations in the workplace that recognize breastfeeding as a human right. Establishing breastfeeding as a cultural norm must extend beyond workplaces to include other domains, such as public spaces (e.g., campuses or malls) or curricula in schools. A discussion of interventions to support initial, exclusive, and continued breastfeeding as the cultural norm is examined in [Appendix I](#).

Practice Notes

To support breastfeeding in the workplace, steps that can be taken to facilitate higher rates of exclusive and continued breastfeeding include the following:

- The inclusion of lactation services and supports as part of paid employee benefits.
- Benefits that include the purchase or rental of breast pumps or other lactation aids⁶ to support breastfeeding, where needed.
- Support from the employer, co-workers, and supervisors (83, 85).

By offering these types of employee benefit options, both the employer and staff benefit (85).

Secondary benefits of workplace breastfeeding support include the following:

- improved staff productivity,
- reduced health-care costs,
- enhanced public “family friendly” image for employers, and
- decreased employee turnover rates and absenteeism (85).

Supporting Resources

RESOURCE	DESCRIPTION
PREGNANCY AND BREASTFEEDING AS A HUMAN RIGHT	
Ontario Human Rights Commission. Pregnancy and Breastfeeding [Internet]. Toronto (ON): Queen’s Printer for Ontario; [date unknown]. Available from: http://www.ohrc.on.ca/en/pregnancy-and-breastfeeding-brochure	<ul style="list-style-type: none"> ■ A website outlining the Ontario Human Rights Code and the protected rights for breastfeeding persons, including the right to breastfeed in a public space.
Pregnancy and breastfeeding (brochure) [Internet]. Toronto (ON): Queen’s Printer for Ontario; 2012. Available from: http://www.ohrc.on.ca/sites/default/files/Pregnancy%20and%20breastfeeding_English_accessible.pdf	<ul style="list-style-type: none"> ■ A plain language resource on human rights during pregnancy and breastfeeding from the Ontario Human Rights Commission.
Policy on preventing discrimination because of pregnancy and breastfeeding [Internet]. Toronto (ON): Queen’s Printer for Ontario; 2014. Available from: http://www.ohrc.on.ca/en/policy-preventing-discrimination-because-pregnancy-and-breastfeeding	<ul style="list-style-type: none"> ■ A website describing how discrimination due to pregnancy or breastfeeding is illegal, according to the Ontario Human Rights Code. The Ontario Human Rights Code acts as a mechanism to normalize expectations and protect human rights, including pregnancy and breastfeeding, through legislation.
Human rights obligations related to pregnancy and breastfeeding: Case law review [Internet]. Toronto (ON): Queen’s Printer for Ontario; 2014. Available from: http://www.ohrc.on.ca/en/human-rights-obligations-related-pregnancy-and-breastfeeding-case-law-review	<ul style="list-style-type: none"> ■ A resource and an example of case law review from the Ontario Human Rights Commission on dealing with discrimination based on pregnancy and breastfeeding.
WORKPLACE ACCOMMODATIONS FOR BREASTFEEDING	
Region of Waterloo Public Health; projecthealth.ca. Creating a breastfeeding friendly workplace strategy: a toolkit for employers [Internet]. [place unknown]: Region of Waterloo Public Health; [date unknown]. Co-published with projecthealth.ca. Available from: http://www.projecthealth.ca/sites/default/files/files/Breastfeeding_Friendly_Workplace_Toolkit_access.PDF	<ul style="list-style-type: none"> ■ A toolkit that includes resources for employers and employees for promoting breastfeeding in the workplace using the four pillars of a breastfeeding-friendly workplace: privacy, flexibility, education, and support.

WORKPLACE ACCOMMODATIONS FOR BREASTFEEDING

Pregnancy & Human Rights in the Workplace - Policy and Best Practices [Internet]. Ottawa (ON): Canadian Human Rights Commission; [date unknown]. Available from: <https://www.chrc-ccdp.gc.ca/eng/content/policy-and-best-practices-page-2>

- A website from the Canadian Human Rights Commission outlining the roles and responsibilities of employees, employers, and unions for pregnant and postpartum persons, including accommodations for breastfeeding.

Ottawa Public Health; Just Food. Breastfeeding friendly business: a toolkit. Ottawa (ON): Ottawa Public Health; 2014. Co-published with Just Food. Available from: http://justfood.ca/wordpress/wp-content/uploads/2014/01/BFB_English_Toolkit.pdf

- Tips for businesses on how to be breastfeeding-friendly and create a breastfeeding-friendly place for clients.

PUBLICLY FUNDED BREASTFEEDING ASSISTANCE

Ministry of Community and Social Services. Ontario disability support program—income support directives [Internet]. [place unknown]: Queen’s Printer for Ontario; 2011. Available from: https://www.mcsc.gov.on.ca/documents/en/mcss/social/directives/odsp/income_Support/6_5.pdf

- An example of a policy directive for a breastfeeding nutritional allowance for persons receiving disability payments.
- The nutritional allowance is provided for the cost of food for the breastfeeding person in order to support breastfeeding.

Research Gaps and Future Implications

The RNAO BPG Research and Development Team and expert panel identified priority areas for future research outlined in **Table 11**. Studies conducted in these areas would provide further evidence to support breastfeeding initiation, exclusivity, and continuation. The list is not exhaustive; other areas of research may be required.

Table 11: Priority Research Areas for Each Research Question

RESEARCH QUESTION	PRIORITY RESEARCH AREA
<p>Research Question #1:</p> <p>What are effective tools, processes, and strategies used by nurses, the interprofessional team, and peers for assessing pregnant and postpartum persons to increase the initiation, exclusivity, and continuation of breastfeeding?</p>	<ul style="list-style-type: none"> ■ Large trials sufficiently powered assessing BSE on exclusive and continued breastfeeding with priority breastfeeding populations at higher risk of early cessation or weaning. ■ The extent to which a total LATCH score can predict exclusive and continued breastfeeding beyond discharge. ■ Optimal assessment times for breastfeeding to support exclusivity and continuation. ■ Standardized assessment of infant oral cavity for infant feeding for health-care providers
<p>Research Question #2:</p> <p>What are effective interventions or programs used by nurses, the interprofessional team, and peers to increase the initiation, exclusivity, and continuation of breastfeeding?</p>	<ul style="list-style-type: none"> ■ Effective interventions for at-risk breastfeeding populations, such as adolescent parents, persons who are obese, or persons who have had a Caesarean birth. ■ Effectiveness and any adverse effects of prenatal breastfeeding education, particularly for middle- and low-income countries, on exclusivity to six months. The information, modes of delivery, and measures to determine knowledge should be further explored. ■ Effective breastfeeding interventions for low-, middle- and high-income countries. ■ Pacifier use and breastfeeding outcomes for breastfeeding persons who are not highly motivated. ■ Optimal timing and frequency of LC support. ■ Negative effects of social support and how to minimize. ■ Techniques to ensure safe STS contact for healthy infants, born vaginally or via Caesarean birth. ■ The impact on breast milk production by methods such as hand expression or pumping, on rates of exclusive and continued breastfeeding for term infants. ■ The impact of standardized breastfeeding education in communities on breastfeeding initiation, exclusivity, and continuation.

RECOMMENDATIONS

RESEARCH QUESTION	PRIORITY RESEARCH AREA
<p>Research Question #3:</p> <p>What education or training is required for nurses, the interprofessional team, and peers, to support breastfeeding initiation, exclusivity, and continuation?</p>	<ul style="list-style-type: none"> ■ The effectiveness of educational interventions for nurses and the interprofessional team working in prenatal service on increasing rates of initiation, exclusivity, and continuation of breastfeeding. ■ Most effective content, duration, and methods for educational interventions to improve nurses and the interprofessional team’s knowledge, skills, and practices in breastfeeding. ■ Training specifics (e.g., number of hours and curriculum) for nurses, the interprofessional team, and peers in breastfeeding.
<p>Research Question #4</p> <p>What are optimal practices, programs, and policies for health-care organizations and the broader community, including places of work, to support initial, exclusive, and continued breastfeeding?</p>	<ul style="list-style-type: none"> ■ Impact of workplace policies and lactation programs on breastfeeding outcomes. ■ Impact of partial, versus complete implementation, of the BFI program on breastfeeding outcomes. ■ Impact of BFI components on primiparas, versus multiparas.
<p>Evaluation (Table)</p>	<ul style="list-style-type: none"> ■ Standardized breastfeeding definitions and indicators for program monitoring and evaluation.

The above table, though not exhaustive, is an attempt to identify and prioritize the research needed with respect to breastfeeding initiation, exclusivity, and continuation. Many of the recommendations in this BPG are based on quantitative and qualitative research evidence; others are based on the other clinical guidelines or RNAO expert panel opinion. Further substantive research is required to expand the body of knowledge on breastfeeding.

Implementation Strategies

Implementing BPGs at the point of care is multi-faceted and challenging; it takes more than awareness and distribution of guidelines for practice to change. BPGs must be adapted for each practice setting in a systematic and participatory way, to ensure recommendations fit the local context (86). The RNAO *Toolkit: Implementation of Best Practice Guidelines* provides an evidence-informed process for doing this (see Appendix L) (2012).

The *Toolkit* is based on emerging evidence that successful uptake of best practice in health care is more likely when:

- Leaders at all levels are committed to supporting BPG implementation;
- BPGs are selected for implementation through a systematic, participatory process;
- Stakeholders for whom the guidelines are relevant are identified and engaged in the implementation;
- Environmental readiness for implementing guidelines is assessed;
- The BPG is tailored to the local context;
- Barriers and facilitators to using the BPG are assessed and addressed;
- Interventions to promote the use of the BPG are selected;
- Use of the BPG is systematically monitored and sustained;
- Evaluation of the BPG's impact is embedded in the process; and
- There are adequate resources to complete all aspects of the implementation.

The *Toolkit* uses the “Knowledge-to-Action” framework (87) to demonstrate the process steps required for knowledge inquiry and synthesis. It also guides the adaptation of the new knowledge to the local context and implementation. This framework suggests identifying and using knowledge tools, such as guidelines, to identify gaps and to begin the process of tailoring the new knowledge to local settings. **Figure 2** depicts the framework, outlining the knowledge creation and action cycle process.

RNAO is committed to widespread deployment and implementation of our BPGs. We use a coordinated approach to dissemination, incorporating a variety of strategies, including:

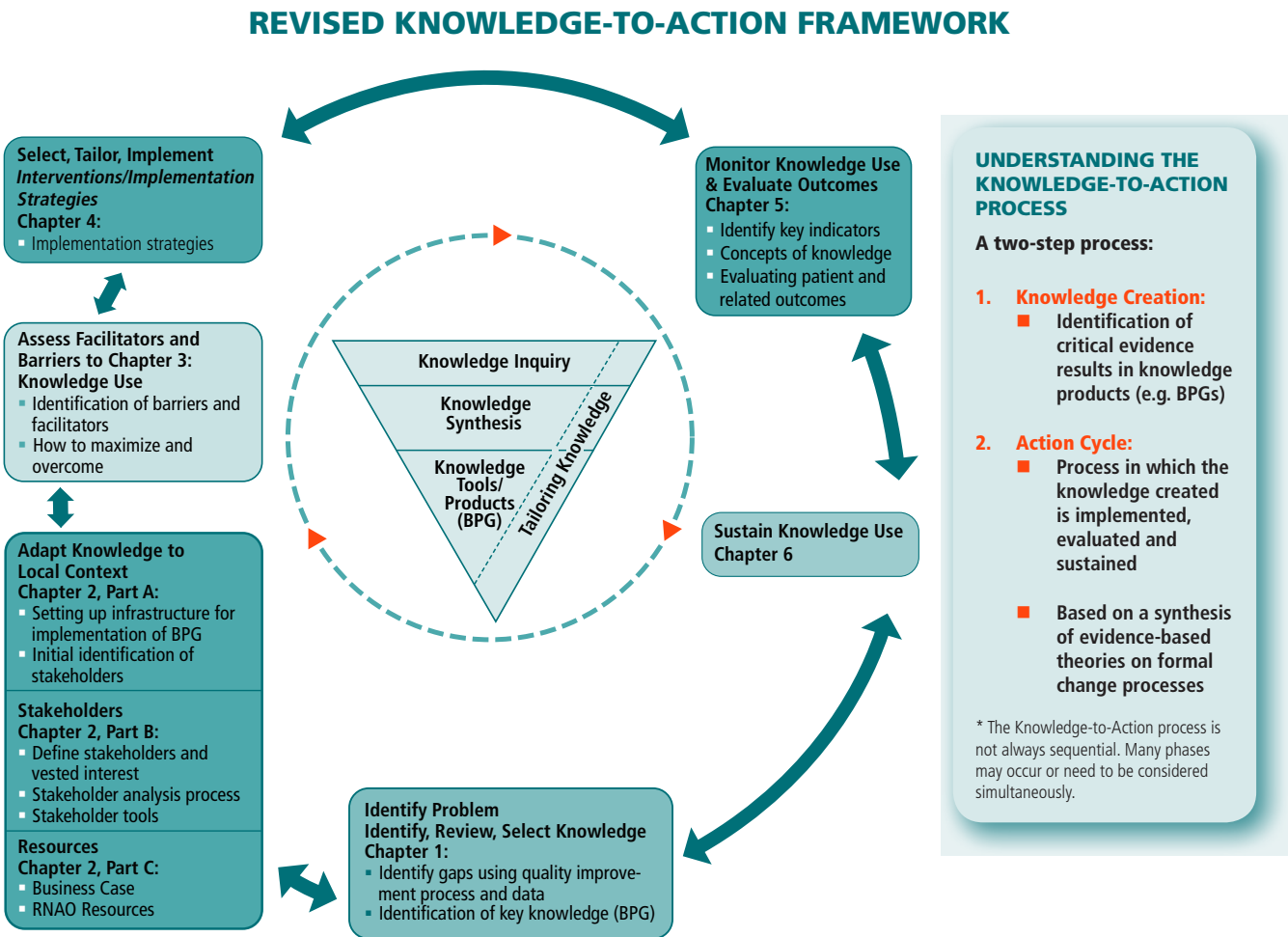
1. The Nursing Best Practice Champion Network[®], which develops the capacity of individual nurses and members of the interprofessional team to foster awareness, engagement, and adoption of BPGs;
2. A BPG Order Set[™] provides clear, concise actionable intervention statements derived from a practice recommendation. BPG Order Sets can be readily embedded within electronic records, but may also be used in paper-based or hybrid environments; and
3. The Best Practice Spotlight Organization[®] (BPSO[®]) designation, which supports implementation at the organization and system levels. BPSOs[®] focus on developing evidence-based cultures with the specific mandate to implement, evaluate, and sustain multiple RNAO BPGs.

In addition, we offer annual capacity-building learning institutes on specific BPGs and their implementation.

Information about our implementation strategies can be found at:

- RNAO Best Practice Champions Network® : www.RNAO.ca/bpg/get-involved/champions
- RNAO BPG Order Sets: <http://rnao.ca/ehealth/bpgordersets>
- RNAO Best Practice Spotlight Organizations® : www.RNAO.ca/bpg/bpsos
- RNAO capacity-building learning institutes and other professional development opportunities: www.RNAO.ca/events

Figure 2: Knowledge-to-Action Framework



Adapted from "Knowledge Translation in Health Care: Moving from Evidence to Practice". S. Straus, J. Tetroe, and I. Graham. Copyright 2009 by the Blackwell Publishing Ltd. Adapted with permission.

Guideline Evaluation

The Donabedian model informs the development of measures for evaluating and monitoring quality health care (88). The model consists of three categories including structure, process, and outcome. Structure describes the required attributes of the health system, organization, or academic institution for example physical, human, information and financial resources. Process measures examine the health care activities provided to, for, and with persons or populations. The measures are directly associated with the recommendation statements and support process improvement. Outcome analyzes the effect of quality care on the health status of persons and populations and measures overall guideline implementation success (88). For additional information refer to the 2012 RNAO *Toolkit: Implementation of Best Practice Guidelines, Second Edition*.

Table 12, 13, and 14 provides structure, process, and outcome measures to assess guideline implementation success. It is important to evaluate evidence-based practice changes when implementing a guideline. Select the measures most relevant to the practice setting. The data repositories/indicator libraries available for breastfeeding are outlined to support data collection, measurement, quality improvement and evaluation.

Table 12: Structure Measure

STRUCTURE MEASURES	MEASURES IN DATA REPOSITORIES/ INSTRUMENTS
Percentage of health-care providers with advanced training and/or continuing education in breastfeeding	New

RECOMMENDATIONS

Table 13: Process Measures

RECOMMENDATION	PROCESS MEASURES	MEASURES IN DATA REPOSITORIES/ INSTRUMENTS
ASSESSMENT INTERVENTION		
1.1	<p>Percentage of dyads assessed for the breastfeeding process:</p> <ul style="list-style-type: none"> ■ During pregnancy (i.e., mid-term to term) ■ Within the first 24 hours of life ■ Prior to discharge from the childbirth setting ■ 2 to 8 days following childbirth ■ >8 days to 6 months following childbirth ■ >6 months to 12 months following childbirth 	NQuIRE ¹
INITIATION OF BREASTFEEDING		
2.1	Percentage of infants who received skin-to-skin contact immediately following childbirth	BORN ²
EXCLUSIVE BREASTFEEDING		
2.3	<p>Percentage of dyads with effective positioning, latch and milk transfer:</p> <ul style="list-style-type: none"> ■ Within the first 24 hours of life ■ Prior to discharge from the childbirth setting ■ 2 to 8 days following childbirth ■ >8 days to 6 months following childbirth 	BORN ²
2.7	Percentage of breastfeeding persons taught hand expression prior to discharge from the childbirth setting	BORN ²

EXCLUSIVE AND CONTINUED BREASTFEEDING

2.10	Percentage of breastfeeding persons who received breastfeeding education: <ul style="list-style-type: none"> ■ During pregnancy ■ Prior to discharge from the childbirth setting ■ Up to 6 months postpartum 	New
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¹ Nursing Quality Indicators for Reporting and Evaluation* (NQuIRE[®])

² Better Outcomes Registry & Network Ontario (BORN)

Table 14: Outcome Measures

OUTCOME MEASURES	MEASURES IN DATA REPOSITORIES/ INSTRUMENTS
INITIATION OF BREASTFEEDING	
Percentage of infants who received breast milk: <ul style="list-style-type: none"> ■ Within the first hour of life ■ Within the first 24 hours of life 	BORN ¹
Percentage of persons who self-report intention to breastfeed their infant: <ul style="list-style-type: none"> ■ During pregnancy ■ Following childbirth 	BORN ¹
Percentage of dyads who initiated breastfeeding within one hour of childbirth	New
EXCLUSIVE BREASTFEEDING	
Percentage of infants who received only breast milk: <ul style="list-style-type: none"> ■ Within the first 24 hours of life ■ 2 to 8 days following childbirth ■ Throughout the entire stay in the childbirth setting (e.g., hospital, community birthing centre, place of residence) ■ To six months of age 	NQuIRE ² , BORN ¹ , WHO ³

CONTINUED BREASTFEEDING	
Percentage of infants >6 to 12 months (<365 days) of age who received breast milk in addition to complementary foods the previous day	WHO ³
Percentage of breastfeeding persons that stop breastfeeding their infant: <ul style="list-style-type: none"> ■ Birth to 1 month of age ■ Birth to 6 months of age ■ >6 to 12 months (<365 days) of age 	New

¹ Better Outcomes Registry & Network Ontario (BORN)

² Nursing Quality Indicators for Reporting and Evaluation® (NQuIRE®)

³ World Health Organization (WHO)

Other RNAO resources for the evaluation and monitoring of BPGs:

- Nursing Quality Indicators for Reporting and Evaluation® (NQuIRE®), a unique nursing data system housed in the International Affairs and Best Practice Guideline Centre, allows Best Practice Spotlight Organizations® (BPSOs®) to measure the impact of BPG implementation by BPSOs worldwide. The NQuIRE data system collects, compares, and reports data on guideline-based nursing-sensitive process and outcome measures. NQuIRE measures definitions are aligned with available administrative data and existing repositories wherever possible, adhering to a ‘collect once, use many times’ principle. By complementing other established and emerging performance measurement systems, NQuIRE strives to leverage reliable and valid measures, minimize reporting burden and align evaluation measures to enable comparative analyses. The international NQuIRE data system was launched in August 2012 to: (i) create and sustain evidence-based practice cultures, (ii) optimize patient safety, (iii) improve patient outcomes, and (iv) engage staff in identifying relationships between practice and outcomes to advance quality and advocate for resources and policy that support best practice changes (88). Please visit [RNAO.ca/bpg/initiatives/nquire](http://rnao.ca/bpg/initiatives/nquire) for more information.
- BPG Order Sets embedded within electronic records provide a mechanism for electronic data capture of process measures. The ability to link structure and process measures with specific client outcome measures aids in determining the impact of BPG implementation on specific health outcomes. Please visit <http://rnao.ca/ehealth/bpgordersets> for more information.

Process for Update and Review of Best Practice Guidelines

The RNAO commits to updating its BPGs, as follows:

1. Each nursing BPG will be reviewed by a team of specialists in the topic area every five years following publication of the previous edition.
2. RNAO International Affairs and Best Practice Guideline Centre staff regularly monitor for new systematic reviews, randomized controlled trials, and other relevant literature in the field.
3. Based on that monitoring, staff may recommend an earlier revision period for a particular BPG. Appropriate consultation with members of the original expert panel and other specialists and experts in the field will help inform the decision to review and revise the BPG earlier than planned.
4. Three months prior to the review milestone, the staff commences planning of the review by:
 - a) Inviting specialists in the field to participate on the expert panel. The panel will be comprised of members from the original panel as well as other recommended specialists and experts.
 - b) Compiling feedback received and questions encountered during the implementation, including comments and experiences of BPSOs[®] and other implementation sites regarding their experiences.
 - c) Compiling a list of new clinical practice guidelines in the field and refining the purpose and scope.
 - d) Developing a detailed work plan with target dates and deliverables for developing a new edition of the BPG.
5. New editions of BPGs will be disseminated based on established structures and processes.



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Appendix A: Glossary of Terms

Analytical study: Analytical studies test hypotheses about exposure–outcome relationships. The investigators do not assign an intervention, exposure, or treatment, but they do measure the association between exposure and outcome over time using a comparison group (90). Analytical study designs include case-control studies and cohort studies.

See *cohort study*

Ankyloglossia: A congenital condition in which the sublingual frenulum is abnormally short, thick, or tight which limits tongue mobility and may impact breastfeeding (91-92). Also referred to as ‘tongue tie’. During the embryonic stage of development, the tongue does not completely separate from the floor of the mouth. There can be varying degrees of ankyloglossia from the tip to the base of the tongue (91 - 92).

Baby-Friendly Initiative (BFI): The Canadian name for the Baby-Friendly Hospital Initiative (BFHI), a WHO and UNICEF quality improvement initiative that began in 1991 to focus on the role of health services in protecting, promoting, and supporting breastfeeding. Through the BFI, breastfeeding is a means of strengthening the contribution of health services to promote safety for breastfeeding persons, child survival, and primary health care (7).

Although the initiative is still referred to as the Baby-Friendly Hospital Initiative (BFHI) globally, the Canadian use of BFI reflects the continuum of care to include community health services (21). In this BPG, the term BFI is used as an umbrella term for both BFI and BFHI.

Best practice guideline (BPG): Best practice guidelines are systematically developed, evidence-based documents that include recommendations for nurses and the interprofessional team, educators, leaders and policy makers, persons and their families on specific clinical and healthy work environment topics. BPGs promote consistency and excellence in clinical care, health policies, and health education, ultimately leading to optimal health outcomes for people and communities and the health-care system (RNAO, 2017).

Breast abscess: A type of breast pathology and a complication arising from infectious mastitis in which fluid or pus collects in the breast tissue (often in the subareolar region) typically occurring within three months postpartum. Clinical signs include pain, redness, and warmth in the affected area as well as generalized aches, fever, and fatigue (93).

Breastfeeding: The act of providing a newborn, infant, or young child with human milk. This may occur directly at the breast, or indirectly via hand expression or pumping. Human milk also can be obtained from donors via wet nursing, milk sharing (e.g., cross-feeding), or from a human milk bank.

Breastfeeding cessation: The stage of breastfeeding in which it is completely stopped. Also referred to as ‘weaning’.

Breastfeeding counselling: An interactive process between a nurse, member of the interprofessional team, and/or a breastfeeding peer, and a breastfeeding person, to support informed decision-making and create a plan of care to support breastfeeding goals and improve health outcomes for the breastfeeding person and infant. Breastfeeding counselling is specific to understanding the needs of the breastfeeding person and their family. It includes the promotion of breastfeeding through education, information, and support to help the person achieve their breastfeeding goals (94).

Breastfeeding dyad: Refers to the breastfeeding person and their newborn, infant, or young child.

Breastfeeding initiation: The introductory steps taken by a breastfeeding person to support and achieve the onset of lactation, including STS contact, positioning and latch attempts, and colostrum⁶ expression, either via hand or pump. Breastfeeding initiation is recommended during the first 24 hours of life, ideally within the first hour. As a concept, breastfeeding initiation is difficult to define due to a lack of consistency in the evidence regarding its timeframes. In this BPG, the inclusion of breastfeeding initiation is intended as a means of promoting the goal of breastfeeding exclusivity and aligning the recommendations with the WHO priorities of breastfeeding protection, promotion, and support (7).

Breastfeeding person: In this BPG, this term refers to the lactating person who is providing breast milk, (either directly or indirectly), to a newborn, infant, or young child. As part of a person-centred approach, however, it is important for nurses, the interprofessional team, and peers to clarify the term preferred by the person in question.

The term “breastfeeding person” supports diversity and may include (but is not limited to) the following individuals: mother, parent, woman, surrogate, human milk bank donor, or a person feeding EBM. The breastfeeding person may identify with one or more of these descriptors, and the term is meant to be inclusive of anyone who has diverse gender identities or expressions. It is used throughout this BPG however, it is important for nurses, the interprofessional team, and peers to clarify how the person would like to be referred to, as per a person-centred approach.

Breast milk: Human milk produced by the breasts (or mammary glands) by a breastfeeding person as the optimal nutrition for a newborn, infant, or young child to support healthy brain development, growth, and a healthy immune system (95).

Breast milk substitutes: Any food being marketed or otherwise presented as a partial or total replacement for breast milk, whether or not it is suitable for that purpose (96).

Childbirth setting: In this BPG, settings for labour and delivery include hospitals, birthing centres, and places of residence.

Cohort study: An observational study in which a defined group of people (the cohort) is followed over time either prospectively or retrospectively (97).

Colostrum: The fluid in the breast at the end of pregnancy and the early postpartum period. As the first milk, it is thicker and yellower than mature milk, reflecting a higher concentration of proteins, many of which are immunoglobulins. It is also higher in fat-soluble vitamins (including A, E, and K) and some minerals (including sodium and zinc). It may be blood-stained in the first few days postpartum; this is thought to be a result of the ducts in the breast growing and should not persist beyond the first week postpartum (98 - 99).

Consensus: A process used to reach agreement among a group or panel during a Delphi or modified Delphi technique (100). A consensus of 70 per cent agreement from all expert panel members was needed for the recommendations in this BPG.

See *modified Delphi technique*

Continued breastfeeding: Any breastfeeding beyond six months and up to two years or longer.

Controlled study: A clinical trial in which the investigator assigns an intervention, exposure, or treatment to participants who are not randomly allocated to the experimental and comparison or control groups (97).

Cross-feeding: A type of informal sharing of breast milk typically between peers that is unpaid, privately arranged, and sometimes reciprocal. Also known as “cross-nursing” (101).

Cross-sectional study: A study measuring the distribution of some characteristic(s) in a population at a particular point in time (also called a “survey”) (97).

Cultural sensitivity: Refers to “awareness, understanding, and attitudes toward culture [that] places the focus on self-awareness and insight” (102).

Descriptive study: A study that generates a hypothesis and describes characteristics of a sample of individuals at one point in time. The investigators do not assign an intervention, exposure, or treatment to test a hypothesis, but merely describe the who, where, or when in relation to an outcome (90, 97). Descriptive study designs include cross-sectional studies.

See *cross-sectional study*

Education recommendation: Statement of educational requirements and approaches/strategies for the introduction, implementation, and sustainability of a BPG.

Evidence-based nursing practice: The integration of the methodologically strongest research evidence with clinical expertise and patient values. Evidence-based nursing practice unifies research evidence with clinical expertise and encourages the inclusion of patient preferences (103).

Exclusive breastfeeding: A category of breastfeeding exposure in which an infant, to six months of age, receives only breast milk directly at the breast or EBM, as well as any vitamin drops, mineral supplements, or medications. The infant does not receive any other liquids or solids (8).

Expressed breast milk: A process by which breast milk is expelled from a breast manually using the hands or using a breast pump.

Family: A term used to refer to individuals who are related (biologically, emotionally, or legally) to the person receiving health care, or those who have close bonds (friendships, commitments, shared households, child-rearing responsibilities, and romantic attachments) with them. The person receiving care determines the importance and level of involvement that any of these individuals have in their care. A person's family may include all those whom the person identifies as significant in their life. (104).

Health inequities: Defined by the Public Health Agency of Canada as “avoidable or remediable differences in health among populations or groups defined socially, economically, demographically or geographically” (105, p. 3).

Implementation science: Methods to promote the systematic uptake of proven clinical treatments, practices, and organizational and management interventions into routine practice and to improve health (106).

Indigenous Peoples: Refers to “individuals and collectives who consider themselves as being related to and/or having historical continuity with First Peoples whose civilizations in what is now known as Canada, the Americas, the Pacific Islands, New Zealand, Australia, Asia, and Africa predate those of subsequent invading or colonizing populations” (107, p. 3). Exceptions to the use of this terminology occur in discussions of literature (e.g., studies, reports, etc.) that use alternative terms. For example, Statistics Canada has used the term “Aboriginal,” which includes First Nations, Inuit, and Métis people (108).

Infant: A very young child up to 12 months of age. In this BPG, the infant is assumed to be born at term and healthy.

Informed decision-making: The process of making a decision based on a clear understanding of the factors, implications, and consequences. The quality of the decision-making process can be determined by evaluating the process itself. This means asking the person making the decision to evaluate the following:

- whether they received enough information (specialized knowledge) to make a decision;
- whether the information was provided without bias or an attempt to sway the person toward a particular option;
- whether the information included an explanation of the benefit(s), harms(s), and scientific uncertainties related to the decision;
- whether alternative options were provided for consideration;
- whether their values and goals were considered;
- whether they were given enough time to make the decision; and
- whether they were included in the decision-making process to their preferred degree of participation (104, 109).

International Board Certified Lactation Consultant (IBCLC): Lactation consultants who have been certified through the IBLCE[®]. Lactation consultants with this certification have demonstrated clinical competencies in breastfeeding education and support, and they have met requirements for a certification. Both health-care providers and non-health care providers can be an IBCLC; they can be employed in health settings such as community centres and hospitals. IBCLCs can also work independently (35).

Interprofessional team: A team made up of people from different professions who work together and share decision-making to achieve a single goal. In the case of health care, that goal is to work with individuals and their families to enhance their outcomes and values (110). In this BPG, the interprofessional team includes, (but is not limited to), physicians, midwives, lactation consultants, social workers, and dietitians.

Lactation aid: A device that consists of a container to hold EBM or commercial formula product and a length of thin tubing that runs from the container to the mother's nipple. As the newborn, infant, or young child suckles at the breast, the supplement is simultaneously delivered (99).

Lactation consultant: A person who is “a specialist trained to focus on the needs and concerns of the breastfeeding dyad and to prevent, recognize and solve breastfeeding difficulties” (111, p.3)

Lactational amenorrhea: The time during which breastfeeding suppresses menstruation and fertility (112).

Lactogenesis: A term describing the series of cellular changes in the breast over the course of lactation, from milk secretion to maintenance and then cessation (99).

Maxillary tie: A congenital condition in which the labial frenulum is thickened with restricted movement. Breastfeeding can be challenging due to limited lip splay that results in a poor seal. Also referred to as “lip-tie” (92).

Meta-analysis: A systematic review of randomized controlled trials that use statistical methods to analyze and summarize the results of the included studies (97).

See *systematic review*

Milk ejection reflex: Also known as the “let-down reflex”, milk ejection reflex is triggered by nerve stimulation in the nipple causing a feedback mechanism on the hormones prolactin (which produces breast milk), and oxytocin, (which causes the breast to push out or “let down” the breast milk) (113). Milk ejection reflex occurs with latching, hand expression or pumping, or by just seeing, hearing, or thinking about the breastfeeding person’s infant.

Modified Delphi technique: The modified Delphi technique is a process whereby a set of initial recommendations, which were formulated to answer a series of research questions, are carefully created before being provided to a panel of experts for a consensus-seeking process (100).

A modified Delphi technique was used during the development process for this BPG. While the identity of the panel members was not concealed, their individual responses to the survey questionnaires used to capture their opinions were concealed from the other members of the group.

Newborn: A child up to 28 days of age. In this BPG, the newborn is assumed to be born at term and healthy.

Nurse: Refers to registered nurses, licensed practical nurses (referred to as registered practical nurses in Ontario), registered psychiatric nurses, and nurses in advanced practice roles such as nurse practitioners and clinical nurse specialists (114).

Organization and system policy recommendation: A statement of conditions required for a practice setting and the broader community to enable the successful implementation of a BPG. The conditions for success are largely the responsibility of the organization.

Oxytocin: A hormone released by the posterior pituitary gland to stimulate the ejection of breast milk into the ducts of the breasts (99, 115).

See *milk ejection reflex*

Partner: Specific to the context of this BPG, a partner is a person with whom the breastfeeding person shares a relationship. A partner may be recognized formally as a spouse or as a co-parent (e.g., a cohabitating or a noncustodial partner).

Peer: An individual who has a common lived experience with another (116).

In this BPG, peers are those with breastfeeding experience who sometimes share socio-cultural characteristics.

Perinatal period: A period of time from pregnancy to postpartum.

See *postpartum*

Person and family-centred care: A person- and family-centred approach to care demonstrates certain practices that put the person and their family members at the centre of health care and services. Person- and family-centred care respects and empowers individuals to be genuine partners with health-care providers for their health.

The approach includes the following common themes and attributes:

- Fostering relationships and trust.
- Empowering the person to be actively involved in making decisions regarding their health care (independence and autonomy, right to self-determination).
- Sharing evidence-based options for care, education, and information that are unbiased, clear, and comprehensive to support the person in making decisions.
- Respecting the person and personalizing care by promoting the person's strengths, self-knowledge, preferences, and goals for care based on their beliefs, values, culture, and experiences of health.
- Providing physical comfort within an environment that is conducive to healing.
- Offering emotional support and a sympathetic presence.
- Ensuring continuity of care during transitions.
- Ensuring the person's ability to access care and services when needed.
- Partnering with the person and their family in health system reform to improve the quality, delivery, and design of health care and services at all levels (micro, meso, and macro).
- Communicating effectively within a therapeutic relationship to promote true health-care partnerships.
- Caring for individuals, families, and communities by addressing determinants of health (health promotion and disease prevention) (104).

Postpartum: The period of time from birth to one year following childbirth.

Practice recommendation: A statement of best practice directed at nurses and the interprofessional team that enables the successful implementation of the BPG.

Prenatal: The period of time during or related to pregnancy.

Primipara / Primiparas (pl): A person who has given birth for the first time. The plural is primiparas.

Probiotics: Live microorganisms which when administered in adequate amounts confer a health benefit to the host (117).

Prolactin: A hormone released from the anterior pituitary gland that stimulates breast milk production (99).

Qualitative research: An approach to research that seeks to convey how human behavior and experiences can be explained within the contexts of social structures and using an interactive and subjective approach to investigate and describe phenomena (118).

Quasi-experimental study: Studies that estimate causal effects by observing the exposure of interest, but that are not directly controlled by the researcher and lack randomization (e.g., before-and-after designs) (119).

Randomized controlled trial (RCT): An experiment in which the investigator assigns one or more interventions to participants who are randomly allocated to either (a) the experimental (receives the intervention) or comparison (conventional treatment) group or (b) the control group (no intervention or placebo) (97).

Reliability (reliable): The degree to which results from a measurement procedure can be reproduced with minimal measurement error (97).

See *validated*

Scoping review: Scoping reviews are used to present a broad overview of the evidence on a specific topic in order to examine areas that are emerging or to clarify key concepts or questions that a researcher may have, irrespective of study quality. Scoping reviews often are a hypothesis-generating process, whereas systematic reviews are a hypothesis-testing one (120).

Second-hand smoke: The smoke exhaled by an individual burning a tobacco product, such as a cigarette, cigar, or pipe. There are more than 7,000 chemicals in second-hand smoke, at least 69 of which are known carcinogens (121).

Social determinants of health: The conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power, and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities—the unfair and avoidable differences in health status seen within and between countries (122). See also: http://rnao.ca/sites/rnao-ca/files/rnao_sdh_brochure_2013.pdf

Stakeholder: An individual, group, or organization that has a vested interest in the decisions and actions of organizations, and which may attempt to influence decisions and actions (123). Stakeholders include all of the individuals and groups who will be directly or indirectly affected by the change or solution to a problem.

Support network: In relation to this BPG, the breastfeeding person's support network includes individuals, groups, or associations with whom the person feels connected to through a shared interest in breastfeeding. The network may include friends, family, communities, and populations. It can extend to peers, online communities, or nurses and the interprofessional team.

Systematic review: A comprehensive review of the literature that uses clearly formulated questions and systematic and explicit methods to identify, select, and critically appraise relevant research. A systematic review collects and analyzes data from the included studies and presents them, sometimes using statistical methods (97).

See *meta-analysis*

Third-hand smoke: Tobacco smoke contamination that remains after a cigarette is extinguished. Its role in the broader context of tobacco control efforts is still unknown (124).

Trauma-informed care: Many persons who access health and social services have had experiences of trauma in their lives (125). Trauma-informed care does not focus on treatment or disclosure of events; rather, it seeks to ensure that no further trauma occurs in the course of accessing care and that persons are able to learn and grow in a positive, relational context (125-126).

Wet nursing: A person who provides breast milk to an infant who is not one's own, typically in exchange for payment (101).

World Health Assembly (WHA): The decision-making body of WHO. The WHA features delegates from WHO Member States and focuses on specific health agendas, including the health of the newborn and the breastfeeding person (among other areas) (127).

Young child (children): A person who is older than 12 months of age. In this BPG, a young child is up to two years of age or older.

Validated (validity): The degree to which a measurement is likely to be true and free of bias (97).

See *reliability*

Vulnerable populations: Groups of people who have an increased susceptibility to (and higher burden of) illness and adverse health outcomes due to disparities in accessing resources that support health. Examples of vulnerable population groups may include, but are not limited to, Indigenous Peoples, single mothers experiencing poverty, people experiencing homelessness, and refugees (37, 50, 73).

Appendix B: Guideline Development Process

RNAO is committed to ensuring that every BPG is based on the best available evidence. To meet international standards, a monitoring and revision process has been established for each guideline every five years.

RNAO assembled a panel of experts who represent a range of sectors and practice areas (see the “RNAO Expert Panel,” p. 22). A systematic review of the evidence was based on the purpose and scope of this Guideline, and it was supported by the four research questions listed below. The systematic review was conducted to capture relevant peer-reviewed literature published between January 2012 and March 2017.

The following research questions were established to guide the systematic review:

1. What are effective tools, processes, and strategies used by nurses, the interprofessional team, and peers for assessing pregnant and postpartum persons to increase the initiation, exclusivity, and continuation of breastfeeding?
2. What are effective interventions or programs used by nurses, the interprofessional team, and peers to increase the initiation, exclusivity, and continuation of breastfeeding?
3. What education or training is required for nurses, the interprofessional team, and peers to support breastfeeding initiation, exclusivity, and continuation?
4. What are optimal practices, programs, and policies for health-care organizations and the broader community, including places of work, to support initial, exclusive, and continued breastfeeding?

The RNAO Best Practice Guideline Research and Development Team and expert panel worked to integrate the most current and best evidence, and to ensure the validity, appropriateness, and safety of the BPG recommendations with supporting evidence and/or expert panel consensus^G.

A modified Delphi technique^G was employed to obtain panel consensus on the BPG recommendations.

Appendix C: Process for Systematic Review and Search Strategy

Guideline Review

The RNAO Best Practice Guideline Research and Development Team searched an established list of websites for guidelines and other relevant content published from January 2012 to January 2017. The resulting list was compiled based on knowledge of evidence-based practice websites and recommendations from the literature (see **Figure 3**). Detailed information about the search strategy for existing guidelines, including the list of websites searched and inclusion criteria, is available at www.RNAO.ca

The RNAO Best Practice Guideline Development Lead and two RNAO Nursing Research Associates appraised four international guidelines using AGREE II (128). Guidelines with an overall score of three or lower were considered to be of low quality and were excluded. Guidelines with a score of four or five were considered to be of moderate quality, and guidelines with a score of six or seven were considered to be of high quality and were included.

The following guideline (rated moderate) was selected to inform the purpose and scope of the BPG, and its discussions of evidence:

Academy of Breastfeeding Medicine Protocol Committee. Use of galactagogues in initiating or augmenting the rate of maternal milk secretion. *Breastfeeding Medicine*. 2011;6(1):41-49.

Systematic Review

A comprehensive search strategy was developed by RNAO's Best Practice Guideline Research and Development Team and a health sciences librarian, based on inclusion and exclusion criteria created with the RNAO expert panel. A search for relevant articles published in English between January 2011 and March 2017 was applied to the following databases: Cumulative Index to Nursing and Allied Health (CINAHL), MEDLINE, MEDLINE In-Process, Cochrane Library (Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Trials), and Embase; Education Resources Information Center (ERIC) was only used for Research Question #3. Expert panel members were asked to review personal libraries for key articles not found through the above search strategies.

Detailed information about the search strategy for the systematic review--including the inclusion and exclusion criteria, and search terms--is available at <https://rnao.ca/bpg/guidelines/initiation-exclusivity-and-continuation-breastfeeding-newborns-infants-and-young-child>

Studies were independently assessed for relevance and eligibility based on the inclusion/exclusion criteria by the RNAO Best Practice Guideline Development Lead and a Nursing Research Associate. Any disagreements were resolved through tie-breaking by a second Nursing Research Associate.

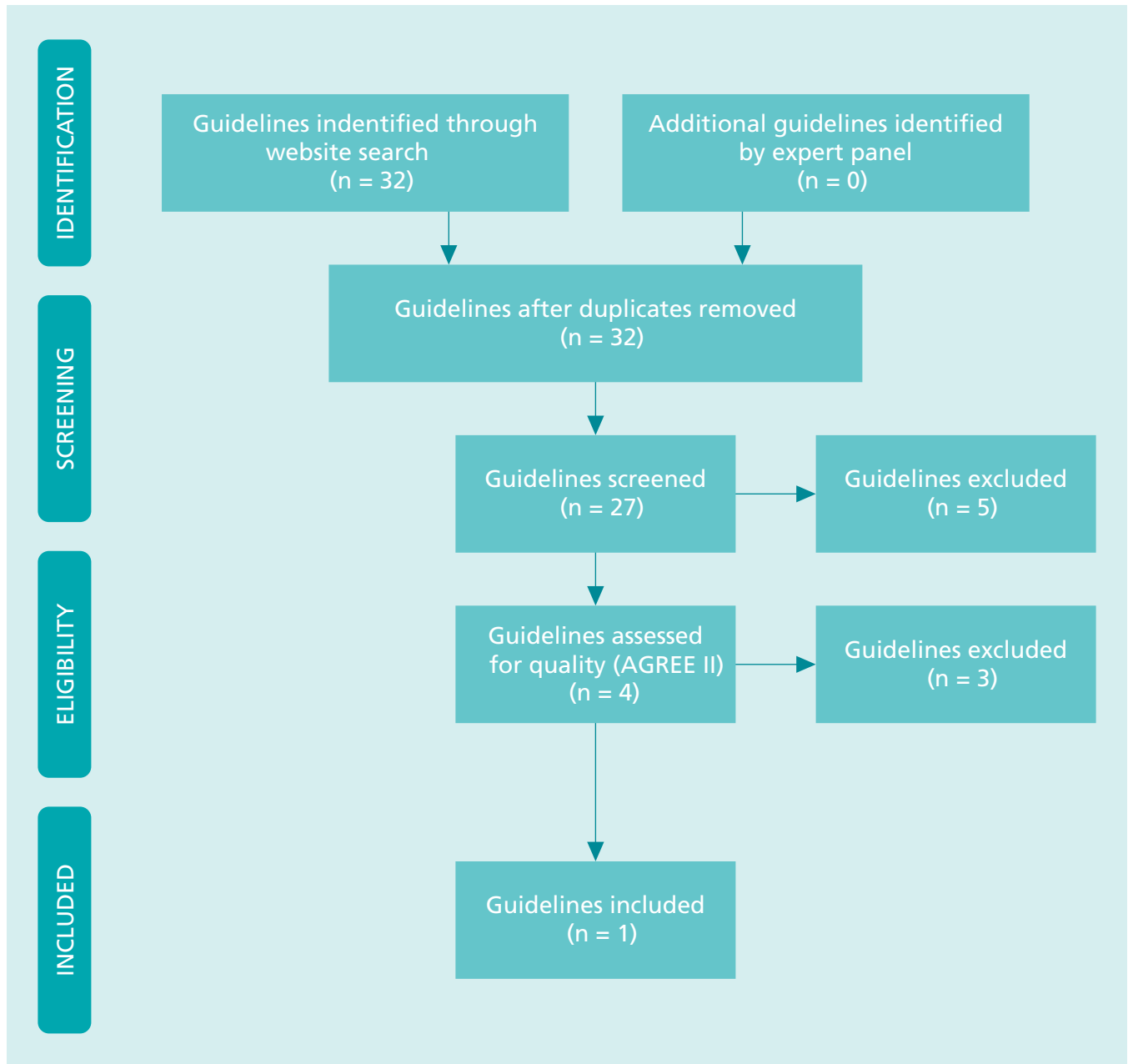
For **Research Question #1**, primary studies were used as we were unable to find any systematic reviews pertaining to breastfeeding assessment. The CASP tool was used for quality appraisal.

For **Research Questions #2, 3, and 4**, systematic reviews were used. Quality appraisal was conducted using AMSTAR (see <http://amstar.ca/index.php>) and RNAO's scoring system, which rates reviews as low, moderate, or high, depending on their quality appraisal scores. Quality appraisal scores for 22 articles (a random sample of approximately 20 percent of the total articles eligible for data extraction and quality appraisal) were independently assessed in duplicate by two members of the RNAO Best Practice Guideline Research and Development Team (one holding a Masters degree and one holding a PhD) in order to establish inter-rater reliability. The researchers reached an acceptable inter-rater agreement (weighted kappa statistic, $K= 0.881$), after which they proceeded with independent quality appraisal and data extraction for the remaining studies. The remaining studies were divided equally between the two researchers for quality appraisal and data extraction (129). Data were extracted into standardized tables, after which a final narrative summary of literature findings was compiled. The comprehensive data tables and narrative summaries were provided to all expert panel members for review and discussion.

A complete bibliography of the full-text articles screened for inclusion is available at <https://rnao.ca/bpg/guidelines/initiation-exclusivity-and-continuation-breastfeeding-newborns-infants-and-young-child>



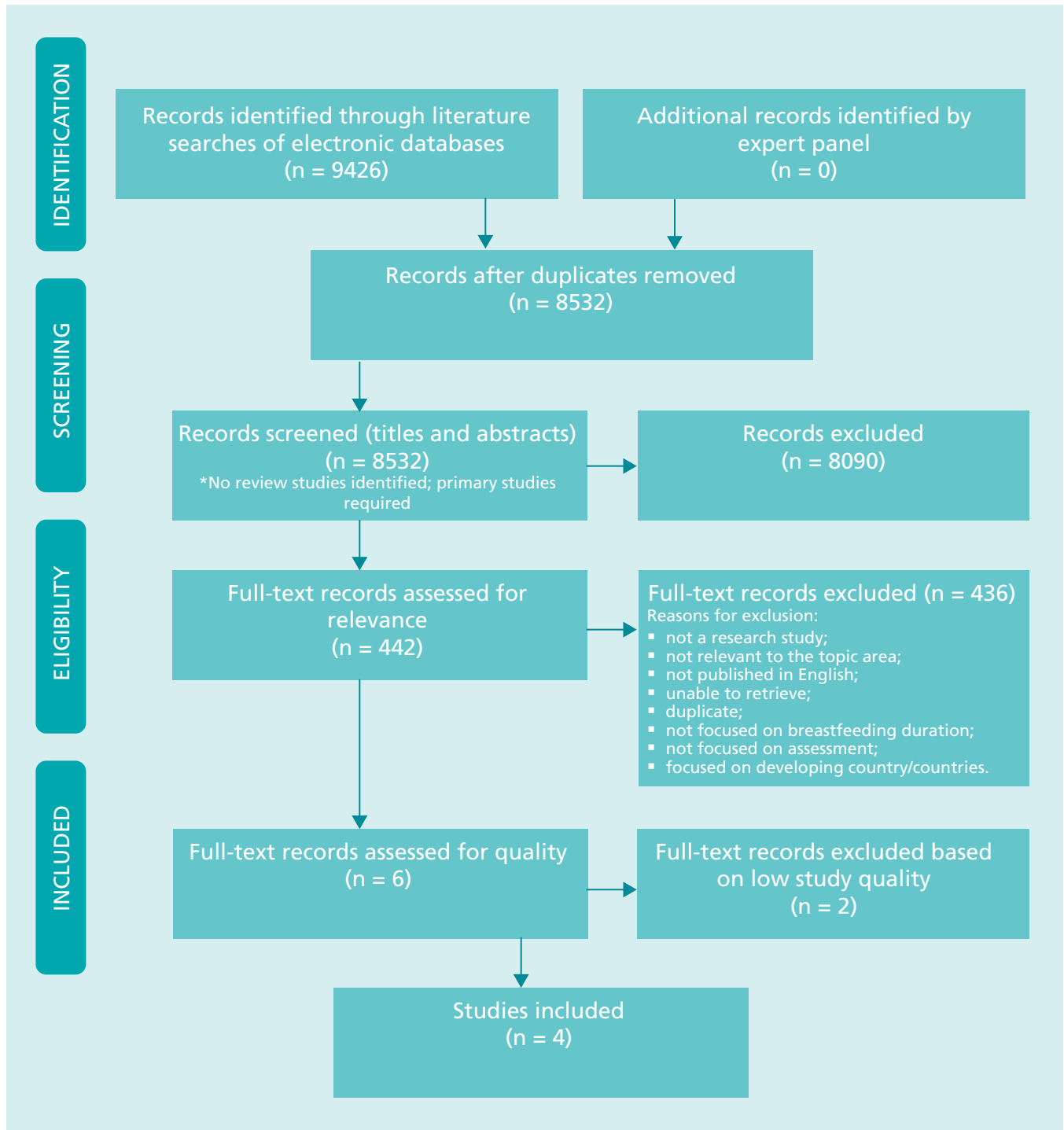
Figure 3: Guidelines Review Process Flow Diagram



Included guidelines had an overall AGREE II score of five or more (out of seven).

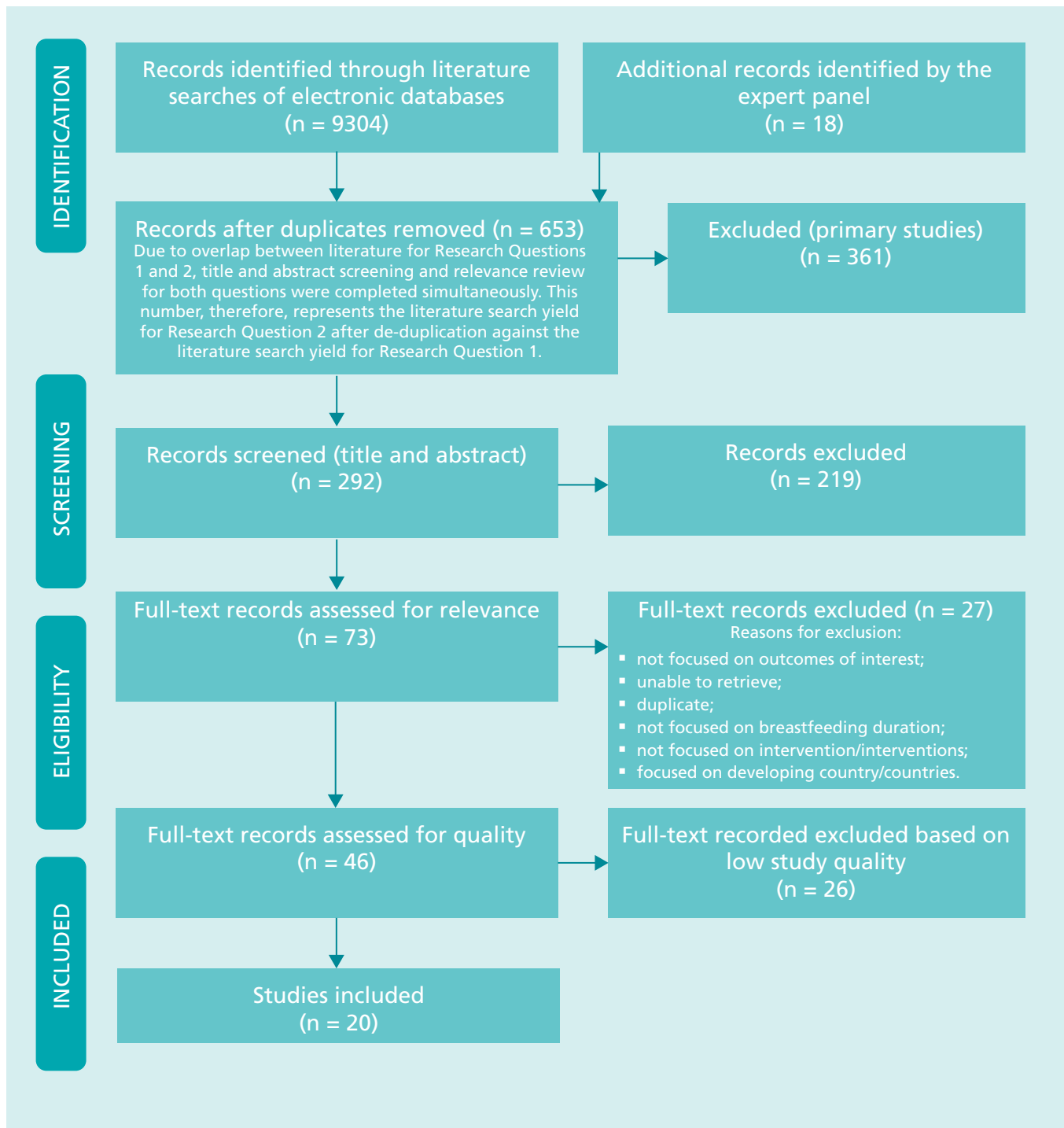
Source: Adapted by the RNAO expert panel from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535. doi: 10.1136/bmj.b2535

Figure 4: Research Question #1 Article Review Process Flow Diagram



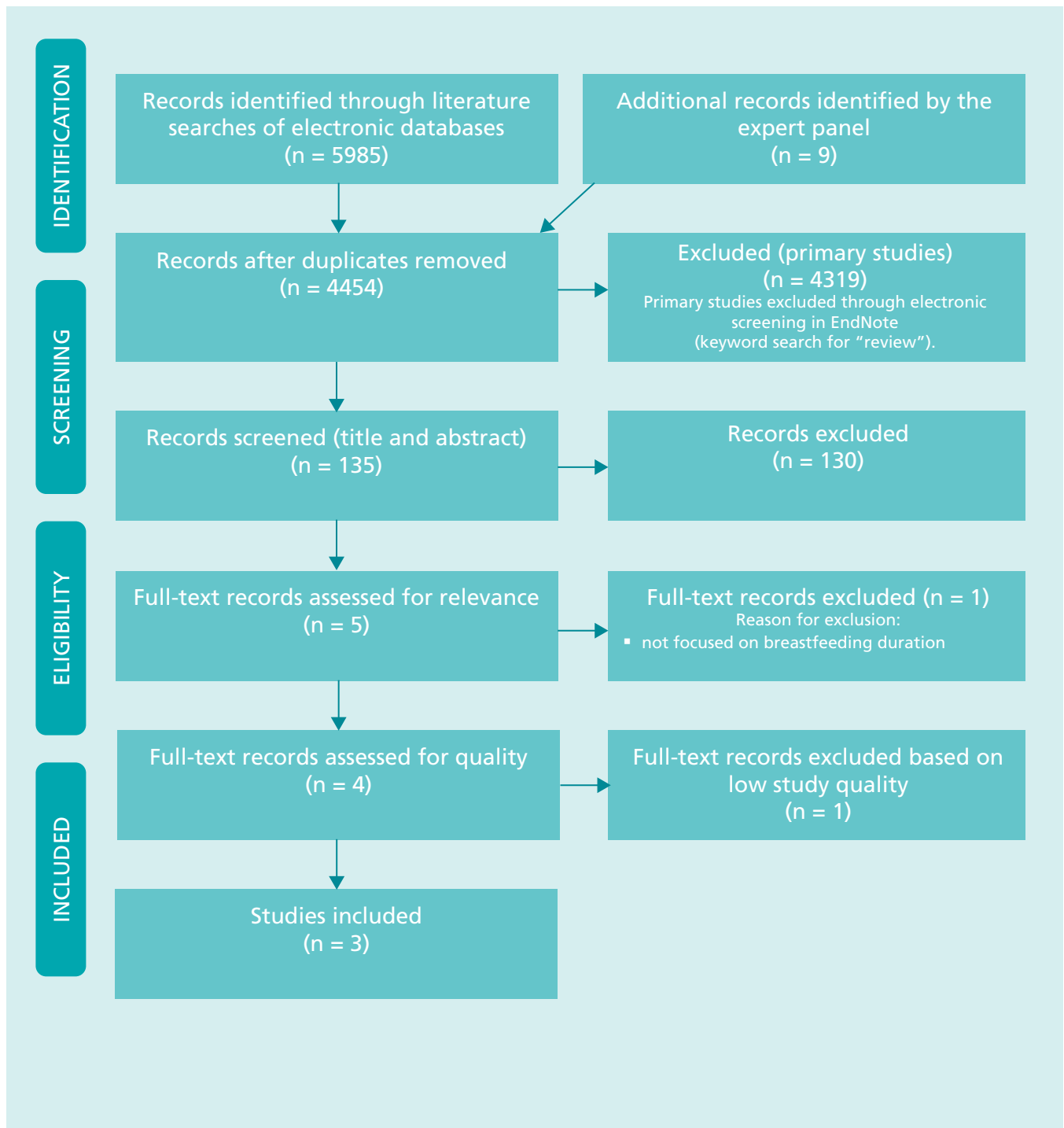
Source: Adapted by the RNAO expert panel from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535. doi: 10.1136/bmj.b2535

Figure 5: Research Question #2 Article Review Process Flow Diagram



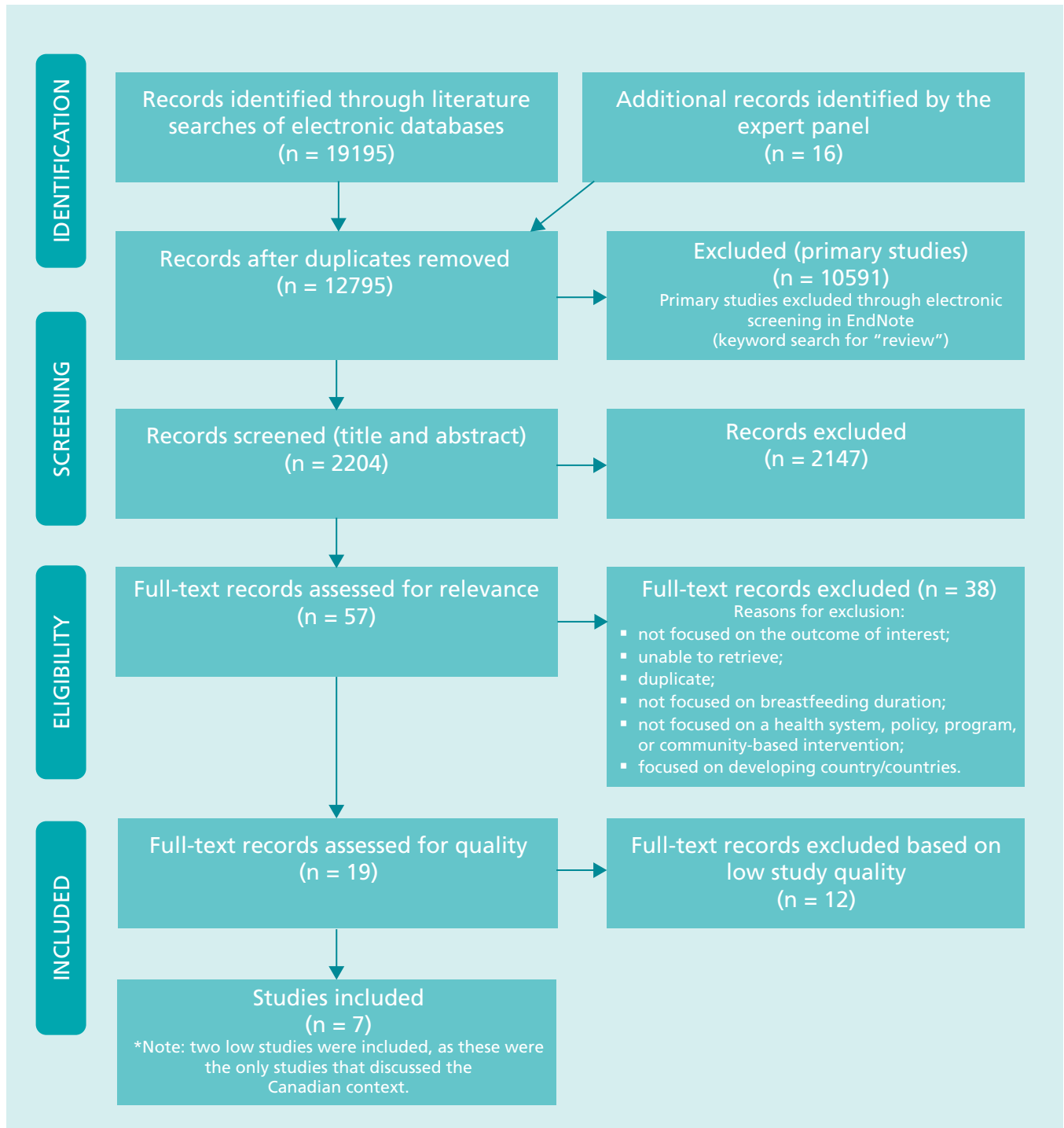
Source: Adapted by the RNAO expert panel from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535. doi: 10.1136/bmj.b2535

Figure 6: Research Question #3 Article Review Process Flow Diagram



Source: Adapted by the RNAO expert panel from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535. doi: 10.1136/bmj.b2535

Figure 7: Research Question #4 Article Review Process Flow Diagram



Source: Adapted by the RNAO expert panel from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535. doi: 10.1136/bmj.b2535.

Appendix D: Strategies to Support Specific Breastfeeding Populations or Situations

This Appendix addresses specific breastfeeding populations or situations that may require additional supports or tailored interventions. Knowledge of these populations or situations can help nurses, the interprofessional team, and peers to support breastfeeding persons to achieve their breastfeeding goals.

Table 15: Specific Breastfeeding Populations and Situations Discussed in Appendix D

BREASTFEEDING POPULATIONS	SITUATIONS
Adolescents	Breastfeeding challenges – mastitis
Deaf persons	Breastfeeding challenges – recurring nipple pain
History of breast surgery	Induced lactation and relactation
History of sexual trauma	Substance use – alcohol, cannabis, and tobacco
Incarcerated persons	
Indigenous Peoples	
Obese persons	
Persons with depression and anxiety	
Persons with gestational diabetes mellitus	
Persons with low health literacy	
Persons with low income	
Persons with visual impairment	
Transgender persons	

The list in **Table 15** is not exhaustive and the inclusion of a resource in this appendix does not infer endorsement by RNAO. The evidence used to support discussions included systematic reviews and primary studies. A comprehensive literature search and quality appraisal were not conducted.

Strategies to support specific breastfeeding populations or situations for newborns, infants or young children are discussed in [Appendix E](#).

Breastfeeding Populations

Adolescents

As the majority of studies on breastfeeding examine adults 18 years of age and older, there is little evidence on adolescents under the age of 18 years. Research suggests that multicomponent interventions—including prenatal and postnatal care, education, and counselling provided by a team of peers and lactation consultants—significantly increased rates of initiation and any breastfeeding (130-131). Breastfeeding programs for adolescents need to be person-centered and appropriate for developmental needs; this includes the integration of supportive adults (130). Less reliance on resource intensive approaches (e.g., written materials or handouts) should be used in breastfeeding promotion as adolescents preferred the support and involvement of others (131). The adolescent’s mother and partner should be included, where possible.

Supporting Resources

RESOURCE	DESCRIPTION
Best Start Resource Centre. Breastfeeding among young, single mothers [Internet]. Toronto (ON): Best Start; 2014. Available from: https://www.beststart.org/resources/breastfeeding/BSRC_Breastfeeding_factsheet_3_ENG.pdf	<ul style="list-style-type: none">■ A fact sheet describing how adolescent parenthood can be a barrier to breastfeeding and suggestions of effective strategies for health-care and service providers when working with these persons.
Public Health England. A framework for supporting teenage mothers and young fathers [Internet]. London (UK): Public Health England; 2015. Available from: http://dera.ioe.ac.uk/26423/1/PHE_LGA_Framework_for_supporting_teenage_mothers_and_young_fathers.pdf	<ul style="list-style-type: none">■ A resource from Public Health England that examines the role of public health strategies in supporting adolescent parents to achieve improved health outcomes, including increased breastfeeding initiation and exclusivity.

Deaf Persons

There is limited evidence on breastfeeding persons who are Deaf and who use American Sign Language (ASL) (132). One study found that Deaf persons learned about breastfeeding from three sources: (1) peers who shared advice; (2) technology (e.g., Facebook or YouTube); and (3) nurses and interprofessional team members who were fluent in sign language or who used ASL interpreters (132). Some breastfeeding persons who are Deaf described breastfeeding as a “struggle” that required determination and pro-active requests for help from nurses and the interprofessional team (132). Written information on breastfeeding was sometimes perceived as challenging by Deaf persons due to limited literacy in English, so reliance on print resources for breastfeeding education may be less effective for this population.

Supporting Resources

RESOURCE	DESCRIPTION
<p>Cuculick J, Chin N, Starr M, et al. Deaf mothers and breastfeeding: assessing their knowledge and practices through focus group discussions [Internet]. Rochester (NY): Rochester Prevention Research Center; 2013. Co-published by the National Center for Deaf Health Research and the University of Rochester Medical Center. Available from: https://www.urmc.rochester.edu/MediaLibraries/URMCMedia/ncdhr/research/documents/SOPHEposter.pdf</p>	<ul style="list-style-type: none"> ■ A poster presentation of a project involving community-based participatory research with the objective of understanding infant feeding practices among a group of Deaf breastfeeding persons in Rochester, New York.
<p>Deaf Breastfeeding Project. Breastfeeding facts: Information for Deaf moms [Video]. Rochester (NY): Deaf Breastfeeding Project; 2015. Available from: https://www.youtube.com/watch?v=P53LvHkJrYE</p>	<ul style="list-style-type: none"> ■ A video from the Deaf Breastfeeding Project on breastfeeding information and personal stories from breastfeeding persons and partners. ■ Anecdotal experiences of breastfeeding from partners of deaf women who are breastfeeding.

History of Breast Surgery

A history of breast surgery, including reduction and augmentation, may impact potential success with breastfeeding initiation, exclusivity, and continuation (133-134).

Breast reduction surgery is the eighth most common plastic surgery conducted globally. Breastfeeding success post-reduction surgery varies depending on the surgical technique used (133). In cases where the subareolar parenchyma (the functional part of the breast tissue, from the nipple areola to the chest wall) was preserved, 100 per cent could breastfeed; that rate declined to 75 per cent with partial preservation and 4 per cent with no preservation. It is important that persons of childbearing age are informed of any risks regarding potential future breastfeeding success in order to support informed decision-making around such surgery. Future research is needed to examine breastfeeding exclusivity to six months for persons who have had breast reduction surgeries as the findings from the evidence were often limited to the first month postpartum (133 - 134).

Breast augmentation surgery that involves implants is one of the most common plastic surgeries globally, particularly in high-income countries (134). Despite the popularity of the surgery, there is a lack of evidence to support informed decision-making regarding implants and their impact on successful breastfeeding (134). Research suggests a 40 per cent reduced likelihood of exclusive breastfeeding related to surgical damage to the ducts, glandular tissue, or breast innervation that results in reduced capacity to lactate, especially for those who have had repeat implant surgeries over time (134). Pre-surgical breast hypoplasia (i.e., underdevelopment of tissue) is also hypothesized to be a cause of reduced milk production for breastfeeding persons (134).

The rationale for breastfeeding cessation at up to one month for persons who have had breast augmentation surgery includes challenges with lactation, reduced commitment or intention to breastfeed, or lower self-confidence in their breastfeeding abilities (134). Further studies with larger sample sizes are needed to improve understanding of the association between breast augmentation and breastfeeding to support informed decision-making regarding surgical risks and benefits (134).

Supporting Resources

RESOURCE	DESCRIPTION
Kraut RY, Brown E, Korowynk C, et al. The impact of breast reduction surgery on breastfeeding: systematic review of observational studies. <i>PLoS One</i> . 2017;12(10):e0186591.	<ul style="list-style-type: none">■ A systematic review to determine whether breast reduction surgery and different surgical techniques impact breastfeeding success.■ Techniques that preserve the column of subareolar parenchyma appear to result in a greater likelihood of successful breastfeeding.

History of Sexual Trauma

There is limited information on breastfeeding and history of sexual breast trauma (135). Qualitative research indicates that breastfeeding persons who have experienced sexual trauma are more likely to report breastfeeding complications (such as mastitis and pain) and are less likely to breastfeed exclusively to six months (135-136). Breastfeeding may trigger memories of abuse and lead to dissociation as a coping mechanism (136).

Breastfeeding support must be sensitive to the person's needs and recognize that breastfeeding may be physically or emotionally difficult due to a history of sexual trauma (136). Weaning may be a preferred option and should not be seen as a sign of weakness or failure (136). As persons who have experienced sexual abuse may also have social disadvantages—such as lower levels of income and a higher likelihood of using commercial tobacco and living with violence in their adult life—breastfeeding services need to recognize these factors by being accessible through local structured programs, outreach services, or drop-in centers (125, 135).

Breastfeeding best practices for nurses, the interprofessional team, or peers when providing care to persons with histories of sexual trauma include the following:

- Recognize signs that identify a possible history of sexual abuse, including pumping only (with no direct breastfeeding), conflicting statements regarding breastfeeding plans, discomfort with touching breasts, and the inability to put the infant to the breast.
- Be aware of the complex factors surrounding sexual abuse and breastfeeding.
- As part of routine breastfeeding support, ask permission to touch the person, especially the breasts, and limit body exposure.
- Consider using commercial formula, as needed, for as long as a breastfeeding person expresses any discomfort with breastfeeding.
- Refer to trauma-informed care^G and support services, as indicated by the person.

- Engage in active listening when exploring and addressing the person’s questions or concerns regarding breastfeeding.
- To integrate trauma-informed care, integrate four key components:
 - Realization of the impact of trauma and the possibility of recovery.
 - Recognition of signs and symptoms of trauma.
 - Response to trauma through policies, protocols, and practices.
 - Integration of steps to avoid retraumatizing the person.

Principles of a trauma-informed approach include creating safety, being trustworthy, collaborating, empowering through the support of choice, offering peer support, and acknowledging historical, gender, or cultural issues that impact the person (137). For further details regarding trauma-informed principles, refer to the 2017 RNAO BPG “*Crisis Intervention for Adults Using a Trauma-Informed Approach*”, available at http://rnao.ca/sites/rnao-ca/files/bpg/Crisis_Intervention_FINAL_WEB.pdf

Supporting Resources

RESOURCE	DESCRIPTION
Why breastfeeding is helpful for trauma survivors [Video]. [place unknown]: Kathleen Kendall-Tackett; 2014. Available from: https://www.youtube.com/watch?v=uh9SuYgfRoE	<ul style="list-style-type: none"> ■ Findings on breastfeeding and sexual assault recovery are presented by researcher Dr. Kathleen Kendall-Tackett.
Kendal Tackett K. Breastfeeding and the sexual abuse survivor [Internet]. Schaumburg (IL): La Leche League International; 2004. Available from: http://breastfeedingmadesimple.com/wp-content/uploads/2016/02/LCSA.pdf	<ul style="list-style-type: none"> ■ A resource from La Leche League on the lifetime effects of childhood sexual abuse.
Simkin PT, Klaus P. When survivors give birth: understanding and healing the effects of early sexual abuse on childbearing women. [place unknown]: Classic Day Publishing; 2004.	<ul style="list-style-type: none"> ■ This book provides persons and perinatal care providers with an understanding of the short- and long-term effects of child sexual abuse on the childbearing person, including their breastfeeding.
Sperlich M, Seng JS, Li Y, et al. Integrating trauma-informed care into maternity care practice: conceptual and practical issues. J Midwifery Womens Health. 2017;62(6):661–72.	<ul style="list-style-type: none"> ■ An article presenting an overview on trauma and how it affects childbearing persons. ■ Steps are provided for integrating trauma-informed care into maternity care practices.

Incarcerated Persons

Most female inmates are parents (138). Research findings on inmates permitted to have their infants reside with them for up to one year indicate the following:

- breastfeeding may be difficult, as the inmates are removed from their family, social supports, and culture;
- the separation from a “high-risk lifestyle” creates an opportunity for the breastfeeding person to reflect and have a fresh start as a parent; and
- the achievement of breastfeeding allows the breastfeeding person the opportunity to redefine their sense of self and improve their sense of self-worth (138).

The evidence suggests that supporting incarcerated persons to breastfeed is positively associated with self-regard, parenting, and self-actualization (138-139). An advocacy organization for incarcerated parents created recommendations to support breastfeeding persons while incarcerated, including the following:

- educate and train those working in the criminal justice system regarding breastfeeding;
- provide breastfeeding education, including pumping and hand expression; and
- advocate for access to breastfeeding supports, such as a pump or small fridge to store EBM (138).

Supporting Resources

RESOURCE	DESCRIPTION
Sutherland MA. Incarceration during pregnancy: implications for women, newborns, and health care providers. <i>Nurs Womens Health</i> . 2013;13(3): 225–30.	<ul style="list-style-type: none"> ■ A summary of two studies on women who were incarcerated during pregnancy and their birth outcomes. ■ Implications for health-care providers are described, including advocacy for adherence to standards of perinatal care for incarcerated women and sensitivity to the unique needs of incarcerated women.
Collaborating Centre for Prison Health & Education. Guidelines for the implementation of mother–child units in Canadian correctional facilities [Internet]. Vancouver (BC): Collaborating Centre; 2015. Available from: https://icclr.law.ubc.ca/wp-content/uploads/2017/06/Guidelines_MCU_26AUG2015.pdf	<ul style="list-style-type: none"> ■ A resource on best practices for the care of women in correctional facilities who have children. ■ The guideline recommends that the person has a private place to breastfeed and that staff who work in corrections be educated on the long-term benefits of breastfeeding.

RESOURCE	DESCRIPTION
<p>Independent Review of Ontario Corrections. Corrections in Ontario. Directions for Reform [Internet]. [place unknown]: Queen’s Printer for Ontario; 2017. Available from: https://www.mcscs.jus.gov.on.ca/sites/default/files/content/mcscs/docs/Corrections%20in%20Ontario%2C%20Directions%20for%20Reform.pdf</p>	<ul style="list-style-type: none"> ■ A report on Ontario corrections services that includes a focus on parent-child and mother-baby programs. ■ The report indicates that there are no mother-baby programs in the 16 provincial institutions that house women. Only one facility offers contact visits between mothers and their children. ■ The report indicates that an incarcerated person who wishes to bond with her baby is not given that opportunity while in custody in Ontario. Following birth, once medically cleared by the primary care provider, the incarcerated person is escorted back to the correctional institution. Without an approved kinship agreement, the baby will be placed in the care of the Children’s Aid Society.

Indigenous Peoples

Studies on Indigenous Peoples^G populations—including First Nations, Inuit, and Métis—indicate lower rates of initiation, exclusivity, and continuation of breastfeeding (140-141). For example, Canadian Indigenous families living in northwestern Ontario had suboptimal rates of breastfeeding initiation and exclusivity (141). Family income, intended duration, plans to breastfeed exclusively, BSE, partner support, and a belief in meeting personal breastfeeding goals were influencing factors on breastfeeding duration (141).

Similarly, Inuit families living in remote arctic and subarctic regions of Canada face health inequities^G (such as food insecurity and difficulties accessing health care), and they have suboptimal exclusive breastfeeding rates (140). Income support—and, to a lesser extent, access to the Canadian Prenatal Nutrition Program (CPNP), a community-based program that provides support to improve the health and well-being of perinatal families experiencing challenging life circumstances—was positively associated with exclusive breastfeeding to six months (140).

To support breastfeeding among Indigenous populations, the following practices are suggested for nurses, the interprofessional team, and peers:

- Be aware that Indigenous breastfeeding persons are at higher risk of not initiating breastfeeding and not exclusively breastfeeding.
- Begin promoting breastfeeding prenatally when breastfeeding intention is being determined.
- Teach breastfeeding persons prenatally the steps they can take to increase their breastfeeding success, such as rooming-in and skin-to-skin contact.
- Encourage breastfeeding persons to seek support in their community (141).

For Canadian Indigenous infants, breastfeeding can positively support health over both the short term and long term and reduce the risk of morbidities and mortality (140). First Nations, Inuit, and Métis infants have a higher proportion of infectious illnesses and mortality than other Canadian infants (140). As any level of breastfeeding exposure in Indigenous infants can reduce the prevalence of morbidities such as otitis media, gastrointestinal and respiratory infections, and mortality due to SIDS, effective interventions to promote and support breastfeeding are critical (140).

Breastfeeding - Promoting and Supporting the Initiation, Exclusivity, and Continuation of Breastfeeding for Newborns, Infants, and Young Children

To this end, positive steps to promote breastfeeding include the following:

- Use public health campaigns to promote breastfeeding for infant feeding.
- Include traditional breastfeeding practices as part of breastfeeding education.
- Promote breastfeeding as a strategy supporting wellness that includes and respects Indigenous cultures and traditions.
- Promote the realities of breastfeeding, which may include a learning curve or the experience of pain. Avoid idyllic imaging or messaging that breastfeeding is natural.
- Offer programs that are universal for all First Nations breastfeeding persons and those that are focused for subgroups, such as adolescents.
- Include a peer support component in breastfeeding programs to help reduce social isolation and promote breastfeeding as a cultural norm.
- Involve the partner and family in breastfeeding support. Recognize the person's partner as an important source of emotional, physical, and practical support that can positively influence breastfeeding.
- Situate breastfeeding according to the person's reality and priorities. For some, this may include violence, concerns for personal safety, or feelings of sadness and isolation in the postpartum period.
- Recognize that band offices may offer financial incentives to persons who exclusively breastfeed for six months or longer.
- Acknowledge and respect the impact of residential schools and the loss culture and traditions that include breastfeeding.
- Be mindful that breastfeeding persons may have experienced physical and sexual trauma that makes it difficult for them to have healthy relationships with their body. As such, breastfeeding may be associated with feelings of shame.
- Recognize that the process of relocating pregnant persons hundreds (or even thousands) of kilometres away from home for late pregnancy, intrapartum, and early postpartum care is not conducive to breastfeeding. Evacuation involves separation from partners, other children, and family, leaving the person feeling isolated and without social support.
- Be aware First Nations breastfeeding persons who have been evacuated for intrapartum care may experience pressure to learn how to breastfeed before they are discharged from hospital and return home. Without ongoing and available breastfeeding education and support from nurses and the interprofessional team in their community, they are unlikely to continue to breastfeed post-discharge (142).

Supporting Resources

RESOURCE	DESCRIPTION
Breastfeeding Information for Indigenous families [Internet]. Toronto (ON): Best Start Resource Centre; 2015. Available from: http://www.breastfeedinginfoforparents.ca/indigenousecourse/story_html5.html	<ul style="list-style-type: none"> ■ An educational website supporting breastfeeding for Indigenous families. It provides information on breastfeeding fundamentals, common concerns, and tips for coping with everyday life and getting help. ■ The website includes links to other resources, including a video featuring an Indigenous midwife and a lactation consultant.
The Creator's Gift to Mothers [Video]. [place unknown]: Shibogama First Nations Council; 2016. Available from: https://www.youtube.com/watch?v=rkaxLGI5WBw	<ul style="list-style-type: none"> ■ A video describing the long-term benefits of breastfeeding using Indigenous characters and graphics in a First Nations community setting.
Close to the Heart: Breastfeeding our Children, honoring our values [Video]. [place unknown]: nativebreastfeeding; 2013. Available from: https://www.youtube.com/watch?feature=player_embedded&v=ipr0gPoh8Vs	<ul style="list-style-type: none"> ■ A video promoting breastfeeding for Indigenous Peoples that highlights the importance of breastfeeding and provides options for breastfeeding persons returning to work or school after a baby's birth. ■ Indigenous families share their experiences of breastfeeding.
Supporting Breastfeeding. Breastfeeding and First Nations Families [Internet]. Pickering (ON): La Leche League Canada; c2016 (updated 2016 Jun 20). Available from: https://supportingbreastfeeding.wordpress.com/2016/06/20/breastfeeding-and-first-nations-families/	<ul style="list-style-type: none"> ■ A webpage examining how peer support through La Leche League can assist First Nations breastfeeding persons and their families.
Best Start Resource Centre. Breastfeeding for the health and future of our nation. A booklet for Indigenous families [Internet]. Toronto (ON): Best Start Resource Centre; 2017. Available from: https://www.beststart.org/resources/breastfeeding/BFHFN_sept26.pdf	<ul style="list-style-type: none"> ■ A booklet for Indigenous Peoples who are thinking about breastfeeding or who are currently breastfeeding. ■ Topic areas include Indigenous traditions on breastfeeding and how the teachings of the Medicine Wheel support breastfeeding.

RESOURCE	DESCRIPTION
<p>The Baby-Friendly Initiative: Strengthening Indigenous Families and Communities [Video]. Toronto (ON): BFI Strategy for Ontario; 2017. Available from: https://www.youtube.com/watch?v=Wy5oioh3A7k&feature=youtu.be</p>	<ul style="list-style-type: none"> ■ A video that describes how components of the BFI can support Indigenous families.
<p>The Way of the Past is the Way of the Future: Promoting Breastfeeding Among First Nations Communities [Video]. [place unknown]: Anishnawbe Mushkiki; 2015. Co-published with CONFLIX. Available from: https://vimeo.com/151045444</p>	<ul style="list-style-type: none"> ■ A video focusing on the joys and challenges of breastfeeding for First Nations Peoples, including in public. ■ The representation of breastfeeding in the Medicine Wheel is discussed, as is and the important role of support from elders and family (including partners) during breastfeeding.

Obese Persons

Sixty per cent of female persons of reproductive age are overweight or obese. Globally, the rate of overweight and obese persons is on the rise. The evidence on obesity and poor breastfeeding outcomes is well established: obese persons have lower rates of breastfeeding intention, initiation, exclusivity, and continuation (143-144).

The underlying causes of poorer breastfeeding outcomes for obese persons are multi-faceted:

- Obese persons may experience difficulties with latch due to sore or cracked nipples and pain. This may be due to a higher tendency towards larger breasts, contributing to challenges with positioning and latch. Additionally, nipples may be flatter due to postpartum edema or intrapartum intravenous fluids, creating increased potential challenges with latch.
- Stage II of lactogenesis may be delayed beyond 72 hours when compared to persons with a lower body mass index (BMI). Obese persons have been found to have decreased prolactin levels at 48 hours and seven days postpartum. Imbalanced levels of insulin may be a contributing factor, as insulin levels also influence lactogenesis.
- Oxytocin levels may be reduced as a result of leptin secretion in adipose tissue. Leptin inhibits oxytocin release and muscle contraction, and it may contribute to difficulties with breast milk ejection reflex, which is necessary for milk transfer.
- It has also been suggested that increased androgens—which are associated with polycystic ovary syndrome and hypothyroidism—have a negative influence on the initiation and continued breastfeeding.
- Obese persons may experience separation from their infants in cases of labour-associated complications (e.g., prodromal labour, caesarean birth, or preterm birth) resulting in an admission to a NICU or special care nursery.
- Finally, psychosocial factors—including lower confidence in breast milk supply, lower self-esteem, and reduced social support—can be a factor (144).

The benefits of breastfeeding include a reduced risk of future childhood obesity for the infant and a significant reduction in obesity-associated comorbidities for both the breastfeeding person and the infant; this includes hypertension, diabetes mellitus, and elevated cholesterol levels (143).

Little is known about effective interventions to increase breastfeeding exclusivity and continuation for obese persons, as only four published trials have been conducted on this population. Scheduled support from a LC was the only intervention that demonstrated a significant effect (143).

Suggested interventions to support breastfeeding for obese persons throughout the perinatal period include the following:

- During pregnancy, focus on healthy weight gain parameters to reduce risk factors for prenatal and intrapartum complications (e.g., gestational diabetes mellitus (GDM), caesarean birth, or preterm labour).
- Use of oxytocin and intravenous fluids during labour should be judicious, whenever possible. This will reduce possible postpartum edema because obese persons are more likely to experience edema following birth, and edema in breast tissue can create challenges with positioning and latch.
- In postpartum, support the breastfeeding person to use a variety of breastfeeding positions (e.g., football or cross-cradle). Where needed, place a support (such as a rolled towel) under the breast to aid the breastfeeding person's visualization of the latch.
- Use reverse pressure softening around the areola (i.e., pressing the areola towards the chest wall) to assist with flattened nipples due to edema.
- Provide ongoing breastfeeding support as needed. Involve a lactation consultant in breastfeeding support, where indicated (143).

Supporting Resources

RESOURCE	DESCRIPTION
Bever Babendure J, Reifsnider E, Mendias E, et al. Reduced breastfeeding rates among obese mothers: a review of contributing factors clinical considerations and future directions. <i>Int Breastfeed J.</i> 2015;10:21.	<ul style="list-style-type: none"> ■ A literature review examining breastfeeding and obesity, including initiation, exclusivity, continuation, and effective interventions and implications for clinical practice.
Andreas N, Hyde M, Gale C, et al. Effect of maternal Body Mass Index on hormones in breast milk: a systematic review. <i>PLoS One.</i> 2014;9(12):e1115043.	<ul style="list-style-type: none"> ■ A systematic review examining the effect of the breastfeeding person's BMI on hormones in breast milk.

Persons with Depression and Anxiety

Symptoms of depression and anxiety can occur throughout the perinatal period and impact breastfeeding outcomes (145–148). The associations between breastfeeding and depression, anxiety, and concurrent depression and anxiety are discussed below, along with the clinical implications for nurses and the interprofessional team. For further details regarding perinatal depression, refer to the 2018 RNAO BPG “*Assessment and Interventions for Perinatal Depression*”, available at <http://rnao.ca/bpg/guidelines/assessment-interventions-perinatal-depression>

Depression

Research indicates that depression is associated with early breastfeeding cessation (147). Studies report higher rates of negative breastfeeding attitudes, lower levels of BSE, and increased likelihood of experiencing breastfeeding challenges with postpartum depression (147). Conversely, persons who initiated exclusive breastfeeding had decreased depression scores (as measured by the Edinburgh Postnatal Depression Scale) following childbirth and at three months postpartum, than persons who did not initiate exclusive breastfeeding (149). The suggested rationale for decreased depression symptoms for persons who breastfed exclusively includes an antidepressant effect caused by the lactation hormones oxytocin and prolactin, improved response to stress, and enhanced emotional involvement with the infant through breastfeeding (149).

Anxiety

Elevated symptoms of anxiety in the perinatal period are positively associated with breastfeeding cessation at three and 12 months postpartum (145, 148). Studies report that prior to cessation, symptoms of anxiety may worsen due to stressors related to breastfeeding (148). In contrast, other research indicates that anxiety is an independent risk factor for breastfeeding cessation, not a cause (146).

Concurrent Depression and Anxiety

Symptoms of anxiety and depression occurring during pregnancy may heighten in the postpartum period with the initiation of breastfeeding (148). In the postpartum period, depression and anxiety can negatively impact levels of motivation, intention, and BSE, leading to reduced rates of exclusive and continued breastfeeding and increased risk of early cessation (145–148).

Clinical Implications of Depression and Anxiety

The evidence indicates several clinical implications of depression and anxiety for breastfeeding persons that should be addressed by nurses and the interprofessional team:

- Routinely screen for symptoms of depression and anxiety during pregnancy and postpartum to identify persons at higher risk of perinatal mood disorders, breastfeeding cessation, and short breastfeeding duration. Support the breastfeeding person to find supports and services, as needed.
- Recognize that early assessment and treatment of postpartum depression can result in improved attitudes towards breastfeeding.
- Educate persons prenatally about breastfeeding, particularly primiparas with pregnancy-related complications, as they may be at higher risk for depression and/or anxiety.
- Recognize that anxiety is linked to reduced breast milk production due to decreased oxytocin (and possibly prolactin) levels. With reduced oxytocin, the milk ejection reflex is decreased and the “emptying” of the breast is not completed, creating a negative feedback loop and furthering the decrease in breast milk volume. Anxiety caused by physical or psychological stress also may elevate glucose and cortisol levels, which can contribute to delayed breast fullness and reduced milk volume in the first few days postpartum. This can trigger further anxiety regarding breastfeeding and increased likelihood of using formula products.
- Provide additional breastfeeding support to persons with anxiety and depression, starting prenatally. This may include strategies on breastfeeding techniques and management, as well as practical coping strategies.

- Monitor for negative breastfeeding experiences, as these may precede the onset of depression symptoms, especially breastfeeding difficulties, low BSE, or negative attitudes. In situations where breastfeeding persons present with negative breastfeeding experiences, screen for postpartum depression. Recognize that high screening scores for prenatal depression in the first trimester are associated with early cessation, while those in the third trimester are associated with a shorter duration of breastfeeding.
- Assess for risk factors for early breastfeeding cessation to support the continuation of breastfeeding and emphasize its importance for both the infant and the breastfeeding person.
- Promote social support for breastfeeding, as this can lead to improved breastfeeding outcomes and reduced risk of postpartum depression. Both low social support and perceived lack of support from a partner are associated with postpartum depression (145–150).

Supporting Resources

RESOURCE	DESCRIPTION
Best Start Resource Centre. Managing depression: a self-help resource for women living with depression during pregnancy, after delivery and beyond [Internet]. Toronto (ON): Best Start Resource Centre; 2014. Available from: https://www.beststart.org/resources/ppmd/DepressionWorkbook_ENG.pdf	<ul style="list-style-type: none"> ■ A self-help resource for persons living with postpartum depression, including coping strategies and some discussion on breastfeeding and depression.
Chaput K, Nettel-Aguirre A, Musto R, et al. Breastfeeding difficulties and supports and risk of postpartum depression in a cohort of women who have given birth in Calgary: a prospective cohort study. <i>CMAJ Open</i> . 2016;4(1):E103–109.	<ul style="list-style-type: none"> ■ A prospective cohort study⁶ examining whether breastfeeding challenges affect the risk of postpartum depression and whether breastfeeding support and education can modify the relationship between breastfeeding difficulties and postpartum depression. ■ The results indicate that high-quality breastfeeding support positively impacts breastfeeding outcomes and reduces the risk of postpartum depression.

Persons with Gestational Diabetes Mellitus

Diagnosed during pregnancy, GDM is a condition in which glucose intolerance and insulin resistance develops. It is one of the most common prenatal complications (151-152).

Despite the well-established importance of breastfeeding, the prevalence of breastfeeding for persons with GDM is lower immediately following childbirth and at the time of discharge from hospital compared to persons without GDM (153-154). Suggested reasons for the lower prevalence of breastfeeding include challenges with breastfeeding initiation, an increased likelihood of prenatal or birth-related complications (such as caesarean birth, prematurity, neonatal macrosomia, fetal malformations, and metabolic complications) and separation of the breastfeeding dyad due to monitoring and follow-up (e.g., neonatal hypoglycemia) (154–156). Additionally, persons with GDM may have delayed lactogenesis or less effective hormonal response (including the production of prolactin) to suckling in the first week postpartum (154, 156).

Persons with GDM who breastfeed may benefit by reducing their long-term likelihood of developing Type 2 diabetes mellitus (T2DM) and preserving their pancreatic beta cell function. There are, however, limitations to the evidence, such as a lack of standardized diagnostic criteria for GDM, minimal detailed measures of breastfeeding duration and intensity, and use of self-reported diagnosis of GDM, versus confirmed laboratory findings (154). For example, a prospective study included in a systematic review indicated that persons with GDM who had breastfed for a minimum of three months or longer had a reduced risk of T2DM and that their development of T2DM was delayed by 10 years, when compared to those who had breastfed for less than three months (154).

Breastfeeding demonstrated a protective effect for the breastfeeding person's risk of developing T2DM: lower risk of T2DM and metabolic syndrome (e.g., increased blood pressure, high blood sugar, or abnormal cholesterol or triglyceride levels that increase risk of heart disease, stroke, and diabetes) were found when compared to those persons with no breastfeeding experience (156). For the newborn, breastfeeding for six months or longer was negatively associated with being overweight in childhood at age two years (153).

In the provision of clinical care of persons with GDM, the evidence suggests the following strategies for nurses and the interprofessional team to support breastfeeding:

- Beginning in pregnancy, provide education on the importance of breastfeeding on health outcomes, including improved glucose responses in the short term and potential decreased risk of developing T2DM in the long term. As persons with GDM need frequent glucose monitoring, they may attend more prenatal visits, thereby increasing the opportunity to discuss the importance of breastfeeding.
- Assess breastfeeding challenges that the person with GDM may encounter. Be aware of the additional risk factors for breastfeeding cessation for persons who have other mitigating factors, such as obesity, low socio-economic status, or a caesarean birth.
- As hypoglycemia may be a concern (given the physiological caloric demands of breastfeeding), the breastfeeding person may require additional snacks (151, 154, 156).

Persons with Low Health Literacy

Health literacy includes the ability to obtain, process, and understand basic health information and services (158). It is a more powerful predictor of inequities in health outcomes than education or race (159). For example, in a study examining literacy and breastfeeding, a negative association was found between low health literacy and exclusive breastfeeding at two months among breastfeeding persons compared to peers with adequate health literacy (160). Similarly, another study found 30 per cent of persons with low health literacy never breastfed, compared to 13 per cent among those with adequate health literacy, as measured by a functional skills test (161).

To support breastfeeding, health education materials must be available to all breastfeeding persons, including those with low literacy levels (162). To facilitate this, nurses and the interprofessional team need to incorporate the following strategies:

- Be aware that there are persons with low literacy within populations. Recognize low literacy as a barrier to health outcomes (including breastfeeding) that can be modified.

- Have written breastfeeding materials available for persons with low literacy to support understanding throughout the perinatal period.
- Provide and support access to breastfeeding education and promotion using a variety of approaches, including verbal information, videos, and demonstration. Avoid relying solely on print resources (163).

Supporting Resources

RESOURCE	DESCRIPTION
BREASTFEEDING RESOURCES FOR PERSONS WITH LOW HEALTH LITERACY	
Best Start Resource Centre. My breastfeeding guide [Internet]. Toronto (ON): Best Start Resource Centre; 2015. Available from: https://www.beststart.org/resources/breastfeeding/BSRC_My_Breastfeeding_Guide_EN.pdf	<ul style="list-style-type: none"> ■ Parental education on breastfeeding. ■ Available in 17 other languages from: https://www.beststart.org/cgi-bin/commerce.cgi?search=action&category=B00E&advanced=yes&sortkey=sku&sortorder=descending
Washington State Department of Health. Healthy weight gain during pregnancy [Internet]. [place unknown]: Washington State Department of Health; 2016. Available from: https://here.doh.wa.gov/portals/14/Materials/940-027-PregWtLo-en-L.pdf	<ul style="list-style-type: none"> ■ A resource with suggestions for pregnant persons on healthy nutrients to support pregnancy and breastfeeding.
RESOURCES FOR SUPPORTING PERSONS WITH LOW HEALTH LITERACY	
U.S. Department of Health and Human Services; Centers for Disease Control and Prevention. Simply put: a guide for creating easy-to-understand materials [Internet]. Atlanta (GA): Centers for Disease Control; 2009. Available from: https://www.cdc.gov/healthliteracy/pdf/simple_put.pdf	<ul style="list-style-type: none"> ■ A guide with suggestions on how to create low literacy resources.
Health Literacy in Clinical Practice [Internet]. Toronto (ON): Hospital for Sick Children (Sick Kids); 2014. Available from: http://www.sickkids.ca/tclhinculturalcompetence/health-literacy-in-clinical-practice/index.html	<ul style="list-style-type: none"> ■ An online module examining the impact of health literacy on patient experience and health outcomes.

Persons with Low Income

Robust evidence demonstrates that low income negatively impacts rates of exclusive and continued breastfeeding (164–166). In Ontario, Canada, persons living in neighbourhoods with lower incomes have reduced rates of breastfeeding exclusivity on discharge following delivery compared to the provincial average (54 per cent versus 61 per cent) (164). Similarly, low-income families in the USA have the lowest rates of breastfeeding (164). To increase breastfeeding rates among this population, a variety of effective approaches have been found in the evidence:

- Educate persons on breastfeeding importance and techniques during pregnancy to reduce the intention of formula feeding. This should include persons who intend to feed only breast milk substitutes^G.
- Promote breastfeeding and include effective ways to breastfeed among persons who have not previously successfully breastfed. Review breastfeeding history and plans to breastfeed or pump. Support a plan to pump.
- Increase accessibility of lactation consultants in settings where low-income persons access postpartum care, either through face-to-face meetings or teleconferencing. Offer ongoing breastfeeding support following discharge from the childbirth setting.
- In order to recognize and value the person's participation in a breastfeeding program, offer incentives that address the basic needs of those with low income, including food, transportation, child care, clothing, or social support. Avoid other financial incentives, as these have not been shown to contribute to an associated increase in rates of initiation or any breastfeeding.
- To increase any breastfeeding, provide targeted breastfeeding supports, such as access to a breast pump.
- Provide educational programs that promote breastfeeding initiation and exclusivity in primary care settings with ongoing support and contact with the nurse or member of the interprofessional team (e.g., a general practitioner).
- Provide education over a number of sessions and use a variety of teaching modalities, including written materials (165–168).



Supporting Resources

RESOURCE	DESCRIPTION
Best Start Resource Centre. Populations with lower rates of breastfeeding: background information [Internet]. Toronto (ON): Best Start Resource Centre; 2014. Available from: https://www.beststart.org/pdf/BCP-P2_Background%20Information_final.pdf	<ul style="list-style-type: none"> ■ Background information on populations in Ontario and Canada with lower breastfeeding rates, including low-income persons.
Best Start Resource Centre. Breastfeeding and socioeconomic status [Internet]. Toronto (ON): Best Start Resource Centre; 2014. Available from: https://www.beststart.org/resources/breastfeeding/BSRC_Breastfeeding_factsheet_2_ENG.pdf	<ul style="list-style-type: none"> ■ A fact sheet examining breastfeeding trends in Ontario, Canada, and the impact of income, education, employment, and other factors (such as social determinants of health) on breastfeeding. ■ Persons with lower levels of income and education and higher levels of unemployment have reduced rates of breastfeeding initiation, exclusivity, and continuation. ■ Service providers need to promote and support breastfeeding in these populations.
RESOURCE	DESCRIPTION
Best Start Resource Centre. Child and family poverty in Ontario. A practical guide for moving from stigma to empowerment [Internet]. Toronto (ON): Best Start Resource Centre; 2017. Available from: https://www.beststart.org/resources/anti_poverty/pdf/G03-E_ChildAndFamilyPovertyInOntario.pdf	<ul style="list-style-type: none"> ■ A resource for Ontario, Canada service providers working with families living in poverty who have children under the age of six. ■ The impact of poverty on breastfeeding is discussed.
About CPNP [Internet]. Ottawa (ON): Government of Canada; c2018 (updated 2015 Dec 4). Available from: https://www.canada.ca/en/public-health/services/health-promotion/childhood-adolescence/programs-initiatives/canada-prenatal-nutrition-program-cpnp/about-cpnp.html	<ul style="list-style-type: none"> ■ CPNP is a Canadian community-based program to improve the pregnancy and postpartum health and well-being of families facing challenging life circumstances. ■ One of the goals of CPNP is to improve infant health through the promotion and support of breastfeeding.

Persons with Visual Impairment

Breastfeeding persons who are visually impaired require support and education that is provided in an accessible format (172). A validation study determined that assistive audio technology for the visually impaired could be incorporated to promote breastfeeding (172). For the user, the audio technology was found to be understandable and to provide clear breastfeeding information on topics such as breast milk composition, the benefits of breastfeeding, and breastfeeding myths.

Supporting Resources

RESOURCE	DESCRIPTION
Baby Friendly Initiative Leaflets in Braille [Internet]. Manchester (UK): UNICEF United Kingdom; c2018. Available from: https://www.unicef.org.uk/babyfriendly/baby-friendly-resources/unicef-leaflets-in-braille/	<ul style="list-style-type: none">■ BFI resources, published in Braille, are provided at cost by UNICEF United Kingdom.
Hiland M. Breastfeeding Baby As a Blind or Visually Impaired Mother [Internet]. [place unknown]: American Foundation for the Blind; c2018 (posted 2016 Oct 26). Available from: https://www.visionaware.org/blog/visually-impaired-now-what/breastfeeding-baby-as-a-blind-or-visually-impaired-mother/12	<ul style="list-style-type: none">■ A blog post written by a breastfeeding person who is blind that discusses the benefits and unique challenges of breastfeeding.

Transgender Persons

There is very limited evidence on the experience of transgender persons (including transmasculine persons and trans men) and infant human milk feeding (169). Transgender persons include those whose gender identity does not align with their gender assignment at birth and who identify as non-binary (neither masculine or feminine) (170). Transmasculine persons may choose to engage in pregnancy, childbirth, and infant human milk feeding. The preferred language to describe infant human milk feeding by transmasculine persons may vary: it can include chestfeeding, nursing, feeding, or breastfeeding (169 - 170).

Qualitative research of the experiences of transmasculine individuals during lactation and chestfeeding indicate the following:

- While chestfeeding, some, but not all, experienced gender dysphoria, a type of conflict between the person's assigned gender and their gender identity. This led them to use coping mechanisms, such as focusing on the utility of chestfeeding, discontinuing chestfeeding, or wearing layered clothing to conceal any engorgement or other signs of lactation.
- For transgender persons, personal privacy during infant human milk feeding is important, in part to prevent judgment by others. Individuals expressed a desire to avoid comments or attitudes that reinforced infant feeding as an activity that is gendered and exclusive to females.

- Individuals had difficulties accessing support and assistance with latching, and some faced concerns of possible mastitis caused by binding their chests.
- Respect for all infant feeding choices is essential: chestfeeding for transgender persons should neither be assumed nor asserted. Instead, decisions regarding infant feeding should be supported through an informed decision-making process that respects individual decisions (169).

Preferred lactation care approaches provided for transgendered persons by health-care providers include the following:

- Be aware of (and careful with) the use of language, particularly pronouns and gendered terms. Use the identifiers as stated by the individual. Avoid assumptions about gender identity based on appearance or behaviour.
- Be willing to practice using gender neutral language, especially as pregnant and childbirth settings assume and use the feminine as the social and cultural norm.
- Ask the person how they can best be supported in their infant feeding plans.
- Become educated about trans health care needs during pregnancy, childbirth, and postpartum. Learn about chest masculinization surgery and its impact on mammary tissue.
- Create a clinical environment that is welcoming. This can be done through steps such as a posted visible non-discrimination policy, “safe space” stickers, and using gender-inclusive forms that include “trans” or “other”, in addition to male and female, as options.
- Form relationships with transgender individuals that are based on respect and trust. Ask how the person wishes to be identified—including preferred pronouns—and what terms they prefer to use when referring to body parts (169, 171)

Supporting Resources

RESOURCE	DESCRIPTION
My guide to caring for trans and gender-diverse clients [Internet]. Toronto (ON): Rainbow Health Ontario; c2016. Available from: https://www.rainbowhealthontario.ca/TransHealthGuide/	<ul style="list-style-type: none"> ■ The first of its kind in Canada, the Trans Primary Care Guide is an innovative online tool to assist health-care providers in offering primary and transition-related care to trans and gender-diverse patients. ■ The tool briefly discusses topics such as pregnancy and birth control.
MacDonald T, Noel-Weiss J, West D, et al. Transmasculine individuals’ experiences with lactation, chestfeeding, and gender identity: a qualitative study. <i>BMC Preg Childbirth</i> . 2016;16:106.	<ul style="list-style-type: none"> ■ A qualitative study examining the experiences of transmasculine individuals with lactation and chest feeding. ■ The findings indicate a need for health-care providers to understand gender dysphoria and transgender identities, and to take active steps to support lactation through competent care that is built on trust and respect.

Situations

Breastfeeding Challenges – Mastitis

An inflammatory condition of the breast tissue, mastitis is primarily caused by breast milk stasis or incomplete “emptying” of the breast. It is a leading cause of breastfeeding cessation (173–175). Milk stasis may or may not be caused by an infection. When it is, it is typically caused by staphylococcus; less frequently, it may be caused by *Escherichia coli* (*E. coli*) or streptococci (175). It is one of the most common infections breastfeeding persons can experience.

Clinical symptoms of mastitis often include unilateral breast and/or nipple pain and tenderness, swelling, redness (or erythema), and flu-like symptoms (such as chills, malaise, fever, and aches). Prevalence varies from 2 per cent to 33 per cent of breastfeeding persons (175).

Treatment for mastitis varies depending on the underlying cause (i.e., presence or absence of infection), the results of any laboratory investigations (e.g., culture, breast milk leukocyte count, or bacteria colony count), and the preference of the prescribing health-care provider (175). There is a lack of consensus and insufficient evidence from randomized trials on the treatment of mastitis, timing of antibiotic therapy, selection of antibiotics, and duration of treatment. This is important because absent, lacking, delayed, or ineffective treatment for mastitis contributes to breastfeeding complications, including cessation and recurring or worsening infections (e.g., septicemia).

Suggested treatments for mastitis from the evidence include the following:

- Supportive treatments: promote bed rest and fluids.
- Milk removal or “breast emptying”: continue to breastfeed on the affected side. Increase breastfeeding frequency or length with support for effective positioning, latch, and milk transfer. Reduce or cease use of formula supplements, if applicable. Incorporate breast milk expression via hand or pump, where indicated.
- Treatment of symptoms: use over-the-counter pain medications or anti-inflammatory agents for symptoms of pain.
- Pharmacologic: the use of antibiotics, including broad and/or narrow spectrum, as indicated by laboratory results.
- Other agents: consider probiotics^G or peptides (e.g., nisin) that inhibit bacteria growth (173, 175).

In cases of infectious mastitis that are unresponsive to treatment, a breast abscess^G may develop in which fluid or pus collects in the breast tissue. Suggested strategies for treatment include the following:

- Continued breastfeeding on the affected breast, as tolerated by the breastfeeding person. If not tolerable, the affected breast should be pumped and the non-affected breast offered for feeds until the abscess has resolved.
- Consider including breast ultrasound when antibiotics do not resolve infection.
- Traditional treatment includes surgical incision and drainage. Current and less invasive approaches include aspiration of the pus with ultrasound and a small needle following local anesthetic. This is indicated when the skin over the abscess has become necrotic or thin.
- Repeated irrigation with 0.9 per cent Sodium Chloride (NaCl) is used until the abscess collapses and there is no further leakage of pus (93).

As mastitis can be prevented, the implementation of best practices—such as ongoing breastfeeding assessment, skin-to-skin contact, support, education, responsive cue-based breastfeeding, and skills in hand breast milk expression, as discussed in earlier recommendations—are indicated.

Supporting Resources

COMPLICATIONS OF MASTITIS	SUGGESTED INTERVENTIONS
Breast abscess ⁶	<ul style="list-style-type: none"> ■ Continued breastfeeding on the affected breast, as tolerated by the breastfeeding person. If not tolerable, the affected breast should be pumped and the non-affected breast offered for feeds until the abscess has resolved. ■ Consider including breast ultrasound when antibiotics do not resolve the infection. ■ Traditional treatment includes surgical incision and drainage. Current and less invasive approaches include aspiration of the pus with ultrasound and a small needle following local anesthetic. This is indicated when the skin over the abscess has become necrotic or thin. ■ Repeated irrigation with 0.9 per cent Sodium Chloride (NaCl) is used until the abscess collapses and there is no further leakage of pus.

Breastfeeding Challenges – Recurring Nipple Pain

Recurring nipple pain can be a leading cause of reduced breastfeeding frequency and direct breastfeeding (174, 176). Other consequences include early cessation of exclusive breastfeeding and increased bottle feeding (174, 176). The experience of nipple pain can trigger feelings of discouragement and distress for the breastfeeding person. Nipple pain that is a result of trauma to the nipple can increase the potential for infection, leading to further symptoms of pain and increased risk of cessation (174, 176).

There are a number of underlying causes of nipple pain, and it can occur often as a result of ineffective positioning and latch (175). Examples of causes of nipple pain and suggested interventions are listed in **Table 16** (except mastitis, orofacial clefts, and ankyloglossia, all of which are discussed separately) (174–178).

Table 16: Causes of Nipple Pain and Suggested Interventions

CAUSE OF NIPPLE PAIN	SUGGESTED INTERVENTIONS
Ineffective positioning and latch	<ul style="list-style-type: none"> ■ The most common primary cause of nipple pain. ■ Breastfeeding assessment, education, and support are needed to correct and achieve effective positioning and latch. ■ Consider a lactation consultant if challenges with positioning and latch do not resolve. ■ Continue to breastfeed.
Milk blisters or plugged lactiferous ducts	<ul style="list-style-type: none"> ■ Warm compresses. ■ Aseptic lancing of the blister with a sterile needle, where indicated.

CAUSE OF NIPPLE PAIN	SUGGESTED INTERVENTIONS
Candida infection	<ul style="list-style-type: none"> ■ Swab the nipple and culture the breast milk and/or the infant’s mouth. ■ Conduct a physical examination of the infant for any signs of thrush. ■ Be aware that candida is too frequently diagnosed and treated based on presenting symptoms and not on laboratory results. ■ Treat the breastfeeding person and the infant with an antifungal, where indicated.
Psoriasis of the nipple	<ul style="list-style-type: none"> ■ Recognize that psoriasis of the nipple may flare up with breastfeeding. ■ Treat with topical corticosteroids.
Raynaud’s phenomenon (vasospasm)	<ul style="list-style-type: none"> ■ Apply warmth to the breast tissue. ■ Avoid vasoconstrictors, such as cold, which can cause the arterioles in the breast to spasm, leading to intermittent ischemia. ■ Use pharmacological treatment—such as nifedipine, a calcium channel blocker causing vasodilation—where indicated.
Eczema (endogenous atopic dermatitis, irritant contact dermatitis, and allergic contact dermatitis)	<ul style="list-style-type: none"> ■ Eczema mostly affects the areola and may present as redness, oozing, and erosion. The areola also can be dry with scaling lesions. ■ In addition to pain, the person may report itchiness and burning. ■ If the eczema is caused by an irritant, consider topical agents, soap or bleach used to wash clothing, or a prior course of antibiotics. ■ Allergic contact dermatitis can be caused by the application of topical agents to the nipple, such as lanolin, aloe vera, or home remedies that include tea bags, honey, banana or papaya (which can contain contaminants). ■ Observe the pattern of dermatitis to determine the underlying cause.
Herpes simplex virus (HSV)	<ul style="list-style-type: none"> ■ The diagnosis of HSV can be challenging, as it can mimic other, more common breastfeeding challenges, such as nipple dermatitis, candida, or bacterial mastitis. ■ HSV of the nipple needs to be confirmed: if it is left untreated, it can be life-threatening for an infant less than three months old, as the virus impacts the central nervous system.

Sources: Heller MM, Fullerton-Stone H, Murase JE. Caring for new mothers: diagnosis, management and treatment of nipple dermatitis in breastfeeding mothers. *Int J Dermatol.* 2012;51(10):1149–61; Kent J, Ashton E, Hardwick C, et al. Nipple pain in breastfeeding mothers: incidence, causes and treatments. *Intl J Envir Res Public Health.* 2015;12(10):12247–63; Bergmann R, Bergmann K, von Weizsäcker K, et al. Breastfeeding is natural but not always easy: intervention for common medical problems of breastfeeding mothers—a review of the scientific evidence. *J Perinat Med.* 2013;42(1):9–18; and Stone K, Wheeler A. A review of anatomy, physiology, and benign pathology of the nipple. *Ann Surg Oncol.* 2015;22:3236.

All breastfeeding persons with nipple pain require a comprehensive assessment to determine the underlying cause of the nipple pain (176). This will ensure that the chosen treatment is more likely to be effective and that breastfeeding will continue. An observation of a breastfeeding session and a history taking of the nipple pain are warranted. Repeated assessment of positioning and latch is supported: it is the most likely underlying cause of the pain—or, at a minimum, it is a contributing factor (174, 176).

Preventative steps to avoid painful and sore nipples include the following:

- Avoid soap on the nipple during lactation. Regular showering is sufficient.
- Use anticipatory guidance, support, and education.
- Support effective positioning and latch.
- Break the suction on the breast by placing a clean finger in the mouth once the infant appears satisfied (174, 176).

Supporting Resources

RESOURCE	DESCRIPTION
Inverted and flat nipples [Internet]. Melbourne (AU): Australian Breastfeeding Association; c2013 (updated 2016 Jun). Available from: https://www.breastfeeding.asn.au/bfinfo/inverted-and-flat-nipples	<ul style="list-style-type: none"> ■ Tips for breastfeeding persons with flat or inverted nipples.
Thrush & the breastfeeding family [Internet]. Toronto (ON): La Leche League Canada; 2016. Available from: https://www.lllc.ca/sites/lllc.ca/files/461_Thrush_CMYK_2016_FINAL.pdf	<ul style="list-style-type: none"> ■ An information sheet from La Leche League on the symptoms, diagnosis, and treatments of thrush and breastfeeding for parents, family members, and peers.
Barrett ME, Heller MM, Stone HF, et al. Raynaud phenomenon of the nipple in breastfeeding mothers: an underdiagnosed cause of nipple pain. <i>JAMA Dermatol.</i> 2013;149(3):300–6.	<ul style="list-style-type: none"> ■ An article describing the characteristics of Raynaud phenomenon, such as vasospasm, intermittent ischemia, and subsequent reflex vasodilation and the impact on breastfeeding.

Induced Lactation and Relactation

Induced lactation is a process in which persons who have not had a prior pregnancy and childbirth take active steps to stimulate and establish breast milk production using strategies such as hormonal therapy, galactagogues, or pumping for breast stimulation (179). Situations involving induced lactation may involve (but are not limited to) adoptive parents or a non-biological parent in a same-sex relationship. Relactation is a process of attempting to resume breastfeeding after it has ceased for biological and adoptive parents, including same-sex couples; it can provide a second chance at lactation (179-180).

For either induced lactation or relactation, the volume of breast milk produced may be much lower (or nil), and it may require the use of breast milk substitutes as a supplement (180). The reduction in breast milk volume can be multifactorial due to a lack of lactation-priming hormones from pregnancy and childbirth and/or shared breastfeeding among two or more breastfeeding persons (with a lack of full-time breast stimulation) (180).

Research on induced lactation is primarily limited to case studies. For example, a case study on adoptive parents of preterm twins who had achieved exclusive breastfeeding at two months includes the following recommendations:

- Educate nurses and the interprofessional team on adoptive lactation techniques.
- Teach the breastfeeding person hand expression technique and encourage skin-to-skin contact in an attempt to increase milk supply.
- Be realistic that milk supply may not be sufficient for exclusive breastfeeding, and that formula supplementation or other breast milk substitutes may be indicated.
- Consider referral to a LC for support with latching or the use of a supplemental nursing system or a breast pump to promote breast stimulation.
- Provide information about the efficacy, safety, and risks of galactagogues.
- Engage support from the person's partner, family, and social network, where indicated (181).

For same-sex persons with an adopted and/or biological child, one or both parents may wish to initiate and maintain lactation. The provision of breast milk and the role of breastfeeding may reflect the parental identity shared by the same-sex couple for both the biological parent (also referred to in the evidence as the “birth mother” or “childbearing parent”) and the partner (also referred to in the evidence as the “non-birth mother,” “other mother,” or “(m)other”) (182).

For some same-sex couples, attempts at shared breastfeeding can be a strategy to achieve relationship equality as parents (183). This may be particularly important to the non-biological parent, who may not depending on legislation, have the same recognized legal responsibilities and rights as the biological parent. For other same-sex parents, infant feeding choices may include incorporating a combination of breastfeeding and bottle feeding of EBM or formula products as a means of sharing care for the infant and supporting each other as parents (184).

To support decision making regarding infant feeding for same-sex couples (including induced lactation), nurses, the interprofessional team, and peers must do the following:

- Be respectful of diversity and seek to create positive spaces that are equitable, accessible, and supportive of the human and reproductive rights of individuals and families of all sexual identities.
- Be knowledgeable about breastfeeding, including for persons without prior pregnancies and those who are not lactating spontaneously.
- Be supportive of each couple's decisions regarding infant feeding and the meaning these decisions may have for them as parents and mothers. This supports the principles of breastfeeding as a human right with benefits for the infant, the breastfeeding person, and other parents.
- Be aware of their own attitudes and beliefs, and demonstrate cultural sensitivity^G in order to support the full spectrum of parenting options and constructions, including as it relates to breastfeeding (179, 183, 185).

Supporting Resources

RESOURCE	DESCRIPTION
The Public Health Alliance for Lesbian, Gay, Bisexual, Transsexual, Transgender, Two-Spirit, Intersex, Queer and Questioning Equity. A positive space is a healthy place: making your community health centre, public health unit or community agency inclusive to those of all sexual orientations and gender identities [Internet]. Toronto (ON): Ontario Public Health Association; 2011. Available from: http://opha.on.ca/getmedia/125e32e7-f9cb-48ed-89cb-9d954d76537b/SexualHealthPaper-Mar11.pdf.aspx?ext=.pdf	<ul style="list-style-type: none"> ■ A manual on how to create a positive space in health care (including public health) for people of all sexual orientations and gender identities.
Rainbowhealthontario.ca [Internet]. Toronto (ON): Rainbow Health Ontario; c2017. Available from: https://www.rainbowhealthontario.ca/	<ul style="list-style-type: none"> ■ A provincial service in Ontario, Canada, that provides training to assist health-care and social service providers to improve their skills in providing equitable and comprehensive services to lesbian, gay, bisexual, transgender, and queer or questioning (LGBT2SQ) people.
Goldberg L, Aston M, Burrow S, et al. Relationships and rural health practices. The experiences of LGBTQ+ women and their perinatal care providers [Internet]. [place unknown]: Queer Birthing Relationships; 2017. Available from: http://qrbnsandbeyond.ca/finalreport#page/1	<ul style="list-style-type: none"> ■ A report of a phenomenological qualitative research study examining the care of lesbian, gay, bisexual, transgender, queer or questioning, and other (LGBTQ+) persons by perinatal care providers.

Substance Use – Alcohol, Cannabis, and Tobacco

Alcohol

There is a paucity of evidence on alcohol use and breastfeeding persons (186). Abstinence is recommended as a safe level of alcohol in breast milk has not been established (186). Some research indicates that breastfeeding persons who consume alcohol tend to have higher levels of education (i.e., they attended college or university), socio-economic status, and tobacco use (186–188). These persons often use strategies to minimize alcohol exposure in breast milk, such as timing the consumption of alcohol to after a breastfeeding session (187) Pregnant persons who consume alcohol are more likely to continue alcohol use in the postpartum period, including while breastfeeding (186). For further details regarding alcohol use, refer to the 2015 RNAO BPG “*Engaging Clients Who Use Substances*”, available at http://rnao.ca/sites/rnao-ca/files/Engaging_Clients_Who_Use_Substances_13_WEB.pdf

Alcohol consumption levels are associated with rates of breastfeeding prevalence and the risk of breastfeeding cessation (186–187). For example, consumption at low levels (i.e., no more than two drinks per day) is positively associated with rates of any breastfeeding (i.e., from partial to exclusive) (188). In contrast, consumption of three to five drinks (or more) per sitting is positively associated with breastfeeding cessation when compared to two drinks or less daily (186). Suggested reasons for early breastfeeding cessation include (a) changes in infant sleep patterns and use of commercial formula products to calm them, (b) supplementation to offset a decrease in breast milk volume, (c) personal choice, and (d) reduced likelihood of breastfeeding (186).

As part of breastfeeding education on alcohol use and breastfeeding exposure, the following suggestions are made for breastfeeding persons:

- The safest approach is to avoid alcohol entirely. If used at all, avoid alcohol in the first month postpartum when milk supply is being established.
- Limit alcohol intake to a maximum of two standard drinks per day. A standard drink is defined as beer, 5 per cent (12 ounces); wine, 12 per cent (5 ounces); or spirits, 40 per cent (1.5 ounces).
- Avoid alcohol exposure immediately before a breastfeeding session to reduce exposure through breast milk.
- Consider breastfeeding or expressing breast milk via hand or pump before alcohol intake.
- Recognize that alcohol inhibits oxytocin levels, which results in delayed milk ejection reflex (i.e., delayed let-down reflex) and decreased milk volume.
- The clearance time of alcohol from breast milk is dependent upon a breastfeeding person's weight and the number of alcoholic beverages consumed. For example, a breastfeeding person who weighs 150 pounds (68 kg) and who consumes 12 ounces (354 ml) of 5 per cent beer would require two hours and 14 minutes to clear the alcohol from breast milk (189 - 191).



Supporting Resources

RESOURCE	DESCRIPTION
Alcohol and breastfeeding [Internet]. Nottingham (UK): La Leche League GB; c2018. Available from : https://www.laleche.org.uk/alcohol-and-breastfeeding/	<ul style="list-style-type: none"> ■ A resource developed by La Leche League Great Britain describing how much alcohol passes into breast milk and how alcohol intake affects a baby.
Best Start Resource Centre. Drinking alcohol while breastfeeding. Desk reference for health care providers (HCP) [Internet]. Toronto (ON): Best Start Resource Centre; 2016. Available from: https://www.beststart.org/resources/alc-reduction/pdf/Alcohol desk ref EN 2016 fnl.pdf	<ul style="list-style-type: none"> ■ A desk reference for health-care providers that provides information on reducing potential negative effects of alcohol while continuing to support breastfeeding. ■ Clearance time of alcohol from breast milk based on the number of alcoholic drinks consumed and the breastfeeding person’s weight is included.
College of Family Physicians of Canada; Canadian Centre for Substance Abuse. Alcohol screening, brief intervention and referral: a clinical guide [Internet]. Mississauga (ON): College of Family Physicians of Canada; 2012. Available from: http://www.sbir-diba.ca/docs/default-document-library/2012-screening-brief-intervention-and-referral-clinical-guide-enB0E406423349865474B15064.pdf?sfvrsn=4	<ul style="list-style-type: none"> ■ A three-step alcohol screening, brief intervention, and referral process.
Anderson P. Alcohol use during breastfeeding. <i>Breastfeed Med.</i> 2018;13(5):315-317. Available from: https://www.liebertpub.com/doi/full/10.1089/bfm.2018.0053	<ul style="list-style-type: none"> ■ An update on the effects of alcohol on lactation and on the infant, including acute and long-term effects. ■ The paper recommends waiting 2 - 2.5 hours per alcoholic drink to minimize exposure through breast milk. Breastfeeding sooner than this time period can affect the behaviour of the infant.

Cannabis

Cannabis is one of the most widely used psychoactive drugs in the world, but its use with breastfeeding has not been extensively studied, and exposure rates are often under-reported or with unknown dosages. This renders findings unreliable (192). Much of the evidence is based on findings from older studies with small sample sizes or lower potency, or from animal studies (192). Adding to this, concurrent use of cannabis with other substances (including tobacco) or prenatal use makes it challenging to determine its potential adverse effects through breast milk exposure (192-193). For further details regarding substance use, refer to the 2015 RNAO BPG “*Engaging Clients Who Use Substances*”, available at http://rnao.ca/sites/rnao-ca/files/Engaging_Clients_Who_Use_Substances_13_WEB.pdf

Given these limitations, suggested recommendations regarding breastfeeding and cannabis use include the following:

- Identify users of cannabis—ideally by or before pregnancy—and advise (at minimum) decreased use. Complete cessation is preferable.
- Discuss the benefits and harms of cannabis exposure and breastfeeding to support informed decision-making including the following:
 - Breastfeeding persons should be advised that there is likely no benefits of cannabis exposure through breast milk in a healthy infant and that the risks are not known due to the limitations of the evidence.
 - Cannabis and its metabolites can easily cross into breast milk, thereby exposing the infant.
 - The amount of exposure to the infant through breast milk is dependent upon the usage by the breastfeeding person.
 - Continued use of cannabis by the breastfeeding person during pregnancy and up to one month postpartum can negatively impact the growth and development of the newborn’s brain or central nervous system.
 - No data are available that examine the long-term impact of cannabis exposure through breast milk for infants beyond one year of age.
- Regular cannabis use can result in changes in the user’s mood and judgment, creating a potentially unsafe environment for an infant or young child.
- When cannabis is smoked, avoid smoking in the same room as the infant, to reduce effects of second-hand smoke exposure. Infant exposure to second-hand cannabis smoke is associated with a two-fold possible increased risk of SIDS. As breastfeeding reduces the risk of SIDS, an informed discussion of risks and benefits is necessary.
- Following the smoking of cannabis, wash hands and any clothing that may contain cannabis residue before contact with the infant.
- The American College of Obstetricians and Gynecologists recommend breastfeeding persons discontinue cannabis use for medicinal purposes in favour of alternative therapies that have been found to be safe during lactation.
- Be aware that cannabis compounds likely can remain in breast milk for days or weeks following exposure; they can also be present in the feces and urine of the breastfed infant. This could have negative legal implications, where applicable, in cases of custody or other judicial proceedings (192, 194).

Supporting Resources

RESOURCE	DESCRIPTION
<p>Best Start Resource Centre. Risks of cannabis on fertility, pregnancy, breastfeeding, and parenting [Internet]. Toronto (ON): Best Start Resource Centre; 2017. Available from: https://www.beststart.org/resources/alc-reduction/RisksOfCannabis_A30-E.pdf</p>	<ul style="list-style-type: none"> ■ A resource for pre-conceptual, pregnant, and postpartum persons (including those breastfeeding) and their families examining the risks of cannabis use. ■ Risks of cannabis use and breastfeeding are identified including that tetrahydrocannabinol (THC, the primary psychoactive compound in cannabis) from smoked cannabis is stored in the infant's fat cells and brain for weeks, potentially affecting motor development. ■ Breastfeeding persons are cautioned to avoid using cannabis. Despite the risks of cannabis exposure through breast milk, breastfeeding is recommended for its known benefits.
<p>Porath-Waller A. Clearing the smoke on cannabis [Internet]. [place unknown]: Canadian Centre on Substance Abuse; 2015. Available from: http://www.ccsa.ca/Resource%20Library/CCSA-Cannabis-Maternal-Use-Pregnancy-Report-2015-en.pdf</p>	<ul style="list-style-type: none"> ■ An updated report from 2015 from the Canadian Centre on Substance Abuse examining cannabis as the most commonly used illicit drug in the prenatal period. ■ Prevalence and impacts on pregnancy, fetal development, and birth outcomes are discussed.
<p>Society of Obstetricians and Gynecologists. Are you pregnant or considering pregnancy? Did you know that the use of cannabis may be harmful to your baby [Internet]? Ottawa (ON): Society of Obstetricians and Gynecologists; 2018. Available from: https://www.pregnancyinfo.ca/learn-more/</p>	<ul style="list-style-type: none"> ■ Information for parents regarding the potentially harmful effects cannabis can have on pregnancy and the development of the infant.

Tobacco

Tobacco is a commonly used substance in pregnancy and postpartum, including during breastfeeding (195-196). Research on breastfeeding and tobacco exposure, actively through tobacco use by the breastfeeding person and/or passively, through second-hand smoke and third-hand smoke^G, is negatively associated with exclusive and continued breastfeeding (195-196). For further details regarding interventions for tobacco use, refer to the 2017 RNAO BPG “*Integrating Tobacco Interventions into Daily Practice*”, available at <http://rnao.ca/bpg/guidelines/integrating-tobacco-interventions-daily-practice>

Breastfeeding - Promoting and Supporting the Initiation, Exclusivity, and Continuation of Breastfeeding for Newborns, Infants, and Young Children

For nurses and the interprofessional team working with breastfeeding persons who use or are exposed to tobacco, the evidence suggests the following approaches:

- Advise breastfeeding persons and/or family members who smoke that the benefits of breastfeeding for the infant outweigh their risks of exposure to tobacco.
- Assess smoking patterns of the pregnant person and others residing in the same household. Provide smoking cessation education and support to all interested parties to reduce the risk of second- and third-hand smoke exposures. In the event that tobacco use continues into the postpartum period and the breastfeeding person or family member is unable to quit, encourage harm reduction strategies, including reducing the number of cigarettes smoked.
- Recommend that the time interval between smoking and breastfeeding be increased to reduce nicotine concentration in breast milk.
- Recommend that smoking in the infant's presence be avoided to reduce exposure to second- and third-hand smoke and associated toxins, including carcinogens.
- Recognize that breast milk production is decreased with tobacco use, possibly due to the impact of nicotine on prolactin levels. For example, daily breast milk volume was decreased in those who smoked cigarettes for up to two weeks postpartum (compared to non-smokers). Between two to four weeks, total breast milk volume increased for non-smokers, but it remained the same for smokers, contributing to reduced growth and weight gain for their infants.
- Recognize that when breastfeeding persons who smoke or who are exposed to second-hand smoke stop breastfeeding, they can have a higher risk of mastitis than non-smokers: continued smoking is a causative factor for recurrent breast infections. It has been suggested that this is caused by a build-up of toxic substances (e.g., nicotine and cotinine) that damage the breast ducts directly or cause local hypoxia, which may lead to duct damage and subsequent inflammation and infection (195–198).

Supporting Resources

RESOURCE	DESCRIPTION
<p>Registered Nurses' Association of Ontario. Identifying and eliminating stigmatization of pregnant smokers [Internet]. Toronto (ON): Registered Nurses' Association of Ontario; 2015. Available from: http://tobaccofreernao.ca/sites/tobaccofreernao.ca/files/Stigma.pdf</p>	<ul style="list-style-type: none"> ■ A fact sheet for health-care providers on how to reduce bias and stigma when working with pregnant smokers.
<p>Registered Nurses' Association of Ontario. How to integrate trauma-informed care for pregnant and postpartum smokers [Internet]. Toronto (ON): Registered Nurses' Association of Ontario; 2015. Available from: http://tobaccofreernao.ca/sites/tobaccofreernao.ca/files/Trauma.pdf</p>	<ul style="list-style-type: none"> ■ A brochure for nurses and the interprofessional team to enhance their smoking cessation practice, including five ways to incorporate trauma-informed care for pregnant and postpartum smokers.
<p>Registered Nurses' Association of Ontario. I am a new mother wallet card [Internet]. Toronto (ON): Registered Nurses' Association of Ontario; 2015. Available from: http://tobaccofreernao.ca/sites/tobaccofreernao.ca/files/WALLET_I_am_a_new_mother_COVER_0.pdf</p>	<ul style="list-style-type: none"> ■ A wallet card developed in collaboration with RNAO, Smokers' Helpline, and The Motherisk Program (The Hospital for Sick Children). The card details the impact of tobacco on breastfeeding, the benefits of quitting for both the breastfeeding person and the infant, the impact of second- and third-hand smoke on the infant, and safety considerations when using nicotine replacement therapy products during lactation.
<p>Pregnets. Smoking cessation for pregnant and postpartum women: a toolkit for health care providers [Internet]. Toronto (ON): Pregnets; 2012. Available from: http://www.pregnets.org/dl/toolkit.pdf</p>	<ul style="list-style-type: none"> ■ A toolkit for health-care providers, educators, and researchers on the essential components to address smoking cessation and reduction among pregnant and postpartum persons.
<p>Best Start Resource Centre. Addressing smoking with women and their families: strategies for in-home support services [Internet]. Toronto (ON): Best Start Resource Centre; 2015. Available from: https://www.beststart.org/resources/tobacco/BSRC_Addressing_Smoking_EN_fnl.pdf</p>	<ul style="list-style-type: none"> ■ A resource on smoking during pregnancy and postpartum, including a section on breastfeeding.

Appendix E: Strategies to Support Specific Breastfeeding Populations or Situations: Newborns, Infants, or Young Children

Some newborns, infants, or young children may require additional support to breastfeed due to clinical needs or unique situations. In this Appendix, some of these specific pediatric breastfeeding populations or situations are discussed, with indications of effective interventions to support breastfeeding.

Table 17: Specific Breastfeeding Populations and Situations: Newborns, Infants, and Young Children Discussed in Appendix E

NEWBORN, INFANT, AND YOUNG CHILD BREASTFEEDING POPULATIONS	SITUATIONS
Ankyloglossia (tongue-tie) and maxillary tie (lip-tie)	Breastfeeding refusal or “nursing strikes”
Infants with cleft lip, palate, or both	Emergency nutrition situations
Infants with Down syndrome	Introduction of complementary foods
Late preterm infants	Fussiness or colic
Preterm infants and cup feeding	
Twins or multiples	

The list is not exhaustive, and the inclusion of a resource in this appendix does not infer endorsement by the RNAO. The evidence used to support discussions included systematic reviews and primary studies. A comprehensive literature search and quality appraisal were not conducted.

Strategies to support specific breastfeeding populations or situations for breastfeeding persons are discussed in [Appendix D](#).

Newborn, Infant, and Young Child Breastfeeding Populations

Ankyloglossia

The congenital condition of ankyloglossia (also known as tongue-tie) involves the tongue having a reduced movement which can impact breastfeeding (91, 199). The sublingual frenulum is abnormally short, thick, or tight, which limits tongue mobility beyond the lower gum or lower incisors (91, 199 -200).

Ankyloglossia is thought to contribute to feeding problems, for both breast and bottle feeding infants (91 - 92, 199). It may cause disruptions to milk transfer and increased discomfort with breastfeeding (91, 200). It also may contribute to difficulties achieving or sustaining an effective latch, due to restricted protrusion and elevation of the tip of the tongue (91, 200).

Maxillary Tie (Lip-Tie)

Maxillary tie (also known as lip-tie) is a newer clinical entity that is often under-recognized (92). It involves tightness of the labial frenulum and restricts the infant's ability to create and maintain suction and latch around the areola (92). Following an assessment, a frenotomy may be indicated to resolve the lip-tie.

Assessment Tools for Ankyloglossia

There are a variety of tools suggested in research studies for assessing tongue tie and its severity, including the Hazelbaker's Assessment Tool for Lingual Frenulum Function (HATLFF) and the BTAT (199). Each tool has its own criteria based on the appearance and function of the tongue. For example, the BTAT criteria include the tongue tip appearance, the attachment of frenulum to the lower gum ridge, the degree of tongue lift when the infant's mouth is wide open, and the protrusion of the tongue. Further studies are needed to determine each tool's validity and reliability as well as their feasibility in clinical settings (199).

Frenotomy and Breastfeeding

A frenotomy is a low-risk surgical procedure in which the frenulum is cut to improve tongue or lip mobility. It can support exclusive and continued breastfeeding (91, 201). Potential risks post-operatively are low and include pain, bleeding, infection, and parental stress (91, 201). Bleeding is the most common complication, with a prevalence of 3 per cent to 5 per cent, but most bleeds resolve with no intervention needed, except applying direct pressure using gauze (92, 201).

The benefits of frenotomy for breastfeeding persons include reduced perceived nipple pain and improved latch in the short-term (91, 203). However, it is questionable if these benefits are due to the surgery itself or to the intensive breastfeeding support, time, and attention (both pre- and post-frenotomy). The evidence suggests the importance of (a) ongoing breastfeeding support to rectify any breastfeeding problems, (particularly latch or nipple pain), and (b) the assessment of the frenulum as part of a newborn examination (203).

Identified limitations in the body of evidence on frenotomy include:

- A lack of published guidelines on the diagnosis and treatment of ankyloglossia.
- A lack of uniform grading of the level of restricted tongue movement.
- An absence of studies examining the impact of contributing factors—such as level of motivation, previous breastfeeding history, and social and cultural support for breastfeeding—have on perceived improvements by parents for breastfeeding outcomes.
- Inconclusive studies with small sample sizes, inconsistent methodology, short-term follow-up, and a lack of non-surgical interventions for comparison.
- A lack of agreement on best practices for ankyloglossia (91, 201 – 203).

Supporting Resources

RESOURCE	DESCRIPTION
What is Frenotomy? [Internet]. [place unknown]: Stanford Medicine; c2017. Available from: http://med.stanford.edu/newborns/professional-education/frenotomy.html	<ul style="list-style-type: none"> ■ The frenotomy procedure to release a tongue-tie is depicted in photos and text.
Ghaheri BA, Cole M, Fausel SC, et al. Breastfeeding improvement following tongue-tie and lip-tie release: a prospective cohort study. <i>Laryngoscope</i> . 2017;127(5):1217–23.	<ul style="list-style-type: none"> ■ A cohort study of breastfeeding dyads with previously untreated tongue- and/or lip-ties that underwent surgical repair. ■ There were significant post-operative improvements in breastfeeding outcomes.
Pranksy SM, Lago D, Hong P. Breastfeeding difficulties and oral cavity anomalies: the influence of posterior ankyloglossia and upper-lip ties. <i>Int J Pediatr Otorhinolaryngol</i> . 2015 Oct;79(10):1714–7.	<ul style="list-style-type: none"> ■ A retrospective review of infants whose tongue- and lip-ties were released surgically. ■ Tongue- and lip-ties may cause breastfeeding difficulties, as there were some improvements with the surgical release of the ties.
Ingram J, Johnson D, Copeland M, et al. The development of a tongue assessment tool to assist with tongue-tie identification. <i>Arch Dis Child Fetal Neonatal Ed</i> . 2015 Jul;100(4):F344–F349.	<ul style="list-style-type: none"> ■ The BTAT is used to assess tongue appearance and function in infants with tongue tie. ■ The study determined that the BTAT is an objective measure of the severity of tongue tie.
Overcoming Breastfeeding Problems: Tongue Tie [Internet]. London (UK): UNICEF United Kingdom; c2018. Available from: https://www.unicef.org.uk/babyfriendly/support-for-parents/tongue-tie/	<ul style="list-style-type: none"> ■ An educational resource on tongue tie and breastfeeding with information and resources for parents and health-care providers.

Infants with a Cleft Lip, Palate, or Both

As a congenital anomaly, clefts occurring in the orofacial area include cleft lip, cleft palate, or both. Most common is cleft lip and palate (50 per cent of infants with orofacial clefts), followed by cleft palate (30 per cent) and cleft lip (20 per cent). The majority are unilateral; only 10 per cent are bilateral (204).

In relation to breastfeeding, infants with orofacial clefts encounter two challenges to achieving milk transfer: suction and compression (204-205). Suction is necessary for latching, maintaining effective positioning, and supporting milk transfer. Compression is needed to press the breast between the tongue and the jaw. For infants with orofacial clefts, these combined challenges contribute to longer feeding times, feeding fatigue, and slower growth and development. The likelihood of successful breastfeeding is dependent on the type, size, and location of the orofacial cleft; this

must be assessed on an individual basis (204–206). The person’s intention to breastfeed and any prior experience also should be part of the assessment. In general, infants with cleft lip are better able to create suction, thereby increasing their likelihood of successfully breastfeeding directly on the breast. This contrasts with infants with cleft palate or both cleft lip and cleft palate who may not be able to achieve effective suctioning to support milk transfer. For infants with cleft palate or both cleft lip and cleft palate, indirect breastfeeding—using devices such as a syringe, SpecialNeeds® Feeder (also known as a Haberman feeder), or a standard bottle—can be trialed, with individual assessments necessary to determine success (204, 206).

Suggested strategies to support direct or indirect breastfeeding for infants with orofacial clefts include the following:

- Encourage and promote the importance of breastfeeding.
- Individually assess each infant’s abilities in relation with a cleft. Focus on their abilities in relation to suction and compression.
- Involve nurses, the interprofessional team, or peers to educate and support the breastfeeding person and their family.
- Teach the breastfeeding person to express breast milk either via hand or pump to support breast milk production.
- Educate the breastfeeding person about the likelihood of breastfeeding success. Be sure to indicate that indirect breastfeeding may need to be incorporated to support breast milk supply until the cleft has been repaired.
- Teach modified breastfeeding positions (such as upright or semi-upright positions) to support effective positioning and latch.
- Monitor the infant’s weight gain and hydration to ensure adequate intake and the achievement of growth and development milestones (204–206).

Supporting Resources

RESOURCE	DESCRIPTION
Children’s Hospital at Westmead; Sydney Children’s Hospital; Randwick and Kaleidoscope Children, et al. Fact sheet: cleft lip and/or palate—feeding your baby [Internet]. Sydney (AU): Sydney Children’s Hospitals Network; 2014. Available from: http://www.schn.health.nsw.gov.au/files/factsheets/cleft_lip_andor_palate_-_feeding_your_baby-en.pdf	<ul style="list-style-type: none"> ■ An educational fact sheet for parents of infants with orofacial clefts. ■ Strategies for direct or indirect breastfeeding are described.

Infants with Down syndrome

The global recommendation of breastfeeding initiation, exclusivity, and continuation for all infants includes those with Down syndrome (207). An understanding of the needs of these infants in relation to breastfeeding is limited due to the lack of current published evidence.

As a congenital condition, Down syndrome (also known as trisomy 21) can result in infants encountering challenges with breastfeeding due to a weaker suck reflex and difficulties with swallowing (207). This can lead to delayed breastfeeding initiation and lower milk supply. Additionally, the infant may have other clinical concerns, such as congenital heart disease, gastrointestinal malformations, jaundice, and low birth weight (207). These conditions may warrant surgeries or hospitalizations, leading to further challenges due to a separation of the breastfeeding dyad.

The parent(s) and family of an infant with Down syndrome often experience difficulties with adjusting to the diagnosis and any clinical needs (207). The parents may feel unexpected and conflicting emotions that may impact bonding and readiness to breastfeed. Hospital admission for clinical investigations, possible surgeries, and other complications place stressors on the breastfeeding person and their family. In situations where there is a serious clinical concern for the infant, breastfeeding may not be seen as a high priority.

Strategies to support a breastfeeding person with an infant with Down syndrome are limited, but findings suggest the following:

- The breastfeeding person needs reassurance and encouragement that breastfeeding can be successful.
- A full assessment of the breastfeeding process is required to determine the infant's abilities and any challenges, including suck and swallow reflex. This may include an assessment by a lactation consultant.
- Support from nurses, the interprofessional team, and peers is instrumental in achieving breastfeeding initiation and exclusivity. In cases where a diagnosis has been made prenatally, support and preparation for breastfeeding during pregnancy can be helpful.
- Supporting the breastfeeding person to have time to hold their newborn and infant—including skin-to-skin contact—can be instrumental in promoting bonding.
- If the newborn is stable, initiate breastfeeding as soon as possible.
- Hand expression should be combined with double pumping to maximize breast milk production.
- Utilize breast compression to facilitate latch and milk transfer (207-208).

Supporting Resources

RESOURCE	DESCRIPTION
Children’s Hospitals and Clinics of Minnesota. Breastfeeding an infant with Down syndrome [Internet]. [place unknown]: Children’s Minnesota; c2018 (updated 2015 Aug). Available from: https://www.childrensmn.org/educationmaterials/childrensmn/article/15844/breastfeeding-an-infant-with-down-syndrome/	<ul style="list-style-type: none"> ■ Patient and family education material describing the benefits of breastfeeding for infants with Down syndrome and suggestions on how to help the baby breastfeed (such as positioning).
Thomas J, Marinelli KA; Academy of Breastfeeding Medicine. ABM clinical protocol #16: breastfeeding the hypotonic infant, revision 2016. <i>Breastfeed Med.</i> 2016;2:112–8.	<ul style="list-style-type: none"> ■ A protocol to promote, support, and sustain breastfeeding for infants and young children with hypotonia (i.e., low muscle tone), including those with Down syndrome.
Feeding Your Baby [Internet]. Auckland (NZ): New Zealand Down Syndrome Association; [date unknown]. Available from: http://www.nzdsa.org.nz/yayb/yayb7.htm	<ul style="list-style-type: none"> ■ Information for parents on breastfeeding, including potential challenges and benefits from the New Zealand Down Syndrome Association.
LLC Blog. Thursday Tip: Babies with Down Syndrome can breastfeed [Internet]. Pickering (ON): La Leche League Canada; 2015 (updated 2015 Mar 26). Available from: https://www.llc.ca/thursday-tip-babies-down-syndrome-can-breastfeed	<ul style="list-style-type: none"> ■ Strategies to support breastfeeding a baby with Down syndrome from La Leche League Canada.

Late Preterm Infants

Breastfeeding is recommended for infants born preterm between 34^{0/7} – 36^{6/7} weeks gestation (209). The importance of breastfeeding, including immunologic benefits and reduced risk of infections, are even more important for late preterm infants than they are for term infants (209-210). Risk of morbidity and mortality can be increased for late preterm infants, often related to complications such as hypothermia, weight loss, slow weight gain, prolonged jaundice, dehydration, or respiratory instability (209 - 210).

The late preterm infant can have cumulative challenges with breastfeeding due to their physiological and neurological immaturity. This includes a lack of coordinated suck–swallow–breathe reflex, shallow latch, sleepiness, reduced stamina, and a less vigorous suck (209–211). When combined, these problems can contribute to longer feeding sessions and inadequate milk transfer. Breastfeeding difficulties may be further complicated by conditions experienced by the breastfeeding person related to preterm labour and birth, such as hypertension, diabetes, obesity, or a birth via caesarean section. Any of these conditions can inhibit secretion of prolactin, resulting in reduced milk production or delayed lactogenesis Stage II.

Examples of strategies involving the breastfeeding dyad and the hospital environment to support breastfeeding for the late preterm infant include the following:

- Promote breastfeeding through education. Infants who are breastfed during hospitalization are more likely to be exclusively breastfed than infants who are fed with breast milk and commercial formula products.
- Provide the breastfeeding person and their family with education and counselling prior to (and following) discharge from the childbirth setting.
- Encourage breastfeeding persons to hand express or pump breast milk approximately eight times per day (to mimic typical infant feeding patterns) in order to support breast milk production in cases where the infant is not directly breastfeeding or not breastfeeding often, or simply to increase supply.
- Assess the length of breastfeeds regularly, as the late preterm infant may tire more quickly.
- Implement responsive cue-based breastfeeding (as opposed to scheduled breastfeeding), where possible.
- Involve a lactation consultant for timely additional support in cases where breastfeeding challenges arise.
- Encourage breastfeeding persons to maximize milk production and time if using a pump by double pumping (i.e., pumping both breasts at the same time).
- Support breastfeeding persons to hand express or pump breast milk throughout the day and at night (when prolactin levels are highest).
- Monitor preterm infants—who may be at increased risk of jaundice—for risk factors such as hypoglycemia, respiratory or feeding difficulties, dehydration, or hypothermia. Implement strategies to prevent these breastfeeding risk factors.
- Avoid infant separation from the breastfeeding person as much as possible during clinical investigations. Implement skin-to-skin contact to support breastfeeding.
- Develop guidelines within perinatal acute facilities (such as NICUs) to support breastfeeding persons with breast stimulation for lactogenesis.
- Seek to achieve a quiet hospital environment to promote more efficient breastfeeding. Busy, noisy units can contribute to overstimulation for the late preterm infant and poorer breastfeeding outcomes (209–212).

Supporting Resources

RESOURCE	DESCRIPTION
<p>Best Start Resource Centre. Breastfeeding your late preterm baby [Internet]. Toronto (ON): Best Start Resource Centre; 2016. Available from: https://www.beststart.org/resources/breastfeeding/B26E-BreastfeedingYourLatePretermBaby.pdf</p>	<ul style="list-style-type: none"> ■ A resource for parents on breastfeeding a late preterm infant. Topics include getting started, pumping, feeding your baby at the hospital, and feeding your baby at home following discharge. Available in 18 languages.

Preterm Infants and Cup Feeding

For preterm infants, evidence suggests cup feeding is more beneficial to support exclusive breastfeeding than bottle feeding (33, 213). Support for cup feeding is promoted and supported by WHO and BFI as a key breastfeeding principle for preterm infants only (33). Results from a meta-analysis indicate that preterm infants who were cup fed had a greater likelihood of exclusive breastfeeding, versus any breastfeeding, at the time of hospital discharge and six months post-discharge than those who were fed from a bottle (33). As a feeding method, education on cup feeding is required to ensure safety and effectiveness (33).

To achieve effective and safe cup feeding, examples of strategies include the following:

- Hold the infant in an upright position to avoid choking, gagging, or milk aspiration.
- Place the cup near the infant’s lips to facilitate lapping or sipping the milk. This allows the infant to control the pace and amount of feed taken.
- Combine cup feeds with attempts to feed at the breast to avoid long-term exposure to cup feeding and potential preference over breastfeeding (33).

Facilities using cup feeding require an evaluation of its safety and efficacy, with consideration of factors such as staffing and human resources, time, costs, spillage, milk aspiration, and clinical outcomes (33).

Supporting Resources

RESOURCE	DESCRIPTION
Cup Feeding [Video]. Waitsfield (VT): Global Health Media; 2016. Available from: https://globalhealthmedia.org/portfolio-items/cup-feeding/?portfolioID=5623	<ul style="list-style-type: none"> ■ A video demonstrating the steps of cup feeding for infants who can swallow but who are not ready to fully breastfeed. ■ The video demonstrates different feeding methods, including a cup, a paladai (a type of a small spouted cup), and a spoon.
Cup-feeding [Internet]. Melbourne (AU): Australian Breastfeeding Association; 2016 Mar (updated 2016 Jun). Available from: https://www.breastfeeding.asn.au/bfinfo/cup-feeding	<ul style="list-style-type: none"> ■ Rationales for cup feeding and suggestions on how to cup feed are included in this educational resource for parents from Australia’s leading authority on breastfeeding.

Twins or Multiples

Twins or higher order multiples have lower rates of breastfeeding than singleton infants, despite the known importance of breastfeeding and the risks of not breastfeeding (39). Breastfeeding multiples can present challenges to the breastfeeding person due to the time and physical demands of feeding two or more infants (39). Further breastfeeding challenges can include infants born prematurely or those requiring admission to a NICU (39). The risk of early breastfeeding cessation is higher in this population (39).

Research indicates education and support are effective interventions for singletons, but there is a lack of evidence from randomized trials that indicate the efficacy of these interventions for twins or multiples (39). Additionally, the specifics of timing, duration, and who should deliver breastfeeding interventions for breastfeeding persons of twins or multiples have not been determined (39).

Supporting Resources

RESOURCE	DESCRIPTION
Multiple Births Foundation. Guidance for health professionals on feeding twins, triplets and higher order multiples [Internet]. London (UK): Multiple Births Foundation; 2011. Available from: http://www.multiplebirths.org.uk/mbf_professionals_final.pdf	<ul style="list-style-type: none">■ A guidance written for health-care providers to support breastfeeding of twins and multiples.

Situations

Breastfeeding Refusal or “Nursing Strikes”

There is little published evidence on breast refusal (also known as “nursing strikes”) (214-215). Breastfeeding refusal occurs when an infant abruptly refuses to breastfeed; this is a threat to exclusivity and continuation, and it is a common cause of cessation. Nursing strikes often are mistaken for self-weaning, which unlike breast refusal is a gradual and long-lasting process (214).

The rationale for breastfeeding refusal among six month-old infants include the following:

- infant-related factors, such as nasal obstruction, pain, teething, illness, and gastroesophageal reflux;
- breastfeeding person-related factors, such as mastitis and changes in breastfeeding patterns; and
- slow breast milk transfer or IMS (215).

Changes in schedules that cause separation of the breastfeeding dyad (such as returning to work or school) also may be a factor, as breastfeeding patterns and frequencies may be altered (215).

Suggested strategies to re-establish breastfeeding following breast refusal include the following:

- Take steps to make the breast a positive place for the infant. This includes skin-to-skin contact or co-bathing to trigger instinctive breastfeeding.
- Support the breastfeeding person to express breast milk, either via hand or pump, to maintain milk supply as soon as possible once a strike begins. Advise a daily frequency of breast milk expression to mimic that of typical breastfeeds.
- Consider limiting the number of people who are feeding the infant (if applicable) to only the breastfeeding person in order to support the re-establishment of the breastfeeding dyad relationship (216).

Supporting Resources

RESOURCE	DESCRIPTION
Breast refusal [Internet]. Melbourne (AU): Australian Breastfeeding Association; 2012. Available from: https://www.breastfeeding.asn.au/bf-info/breast-refusal	<ul style="list-style-type: none"> ■ A resource for parents describing reasons for breast refusal, including factors relating to the infant and the breastfeeding person, including milk supply. ■ Includes strategies on how to get the baby on the breast, such as trying different feeding positions, feeding the infant while still sleepy, and using massage or music for relaxation.
Burbidge A. Nursing strikes [Internet]. Nottingham (UK): La Leche League GB; 2017. Available from: https://www.laleche.org.uk/nursing-strikes/	<ul style="list-style-type: none"> ■ Causes for breastfeeding strikes and tips on how to resolve them.

Emergency Nutrition Situations

In emergencies, an organized and prepared approach by local governments or (as indicated) by organizations such as UNICEF is needed to minimize morbidities and mortality among infants or young children (217). Breastfeeding support is integral to the protection and promotion of the health of infants and young children, and it includes steps to enhance initiation, exclusivity, and continuation. Strategies include using lactation aids or supplemental feeding devices only where necessary, and only where it is possible to clean them adequately. Further information can be found at <http://www.ennonline.net/operationalguidance-v3-2017>.

Infant Colic/Fussiness

Infant fussiness or colic is a benign and self-limiting condition in which an infant has uncontrollable crying episodes. It typically begins when the infant is between six and eight weeks of age, and it resolves spontaneously by three to four months (218–220). At a minimum, colic may involve crying episodes that last three hours daily, three times per week, over a three-week time span, but a criteria for a diagnosis of colic has not been established (219).

Colic is a frequent reason for pediatric clinic visits, and it can lead to breastfeeding cessation, followed by the related concerns of IMS, the impact of food intake, and possible sensitivities or allergies (219). The breastfeeding person may experience exhaustion from sleep interruption and symptoms of postpartum depression (218). The underlying etiology or cause(s) of colic are not known, but it has been proposed that it is related to abnormal motility in the gastrointestinal tract related to immaturity of the gut or insufficient lactobacilli contributing to pain and flatulence (218 - 219).

There are many treatments that have been suggested and studied for the treatment of colic, although there is limited conclusive evidence supporting their effectiveness (220). For example, probiotics are thought to be an effective approach to colic when the underlying cause is an imbalance in the intestinal microflora. Probiotics may be helpful in reducing hyperperistalsis and growth of *E. coli* and suppressing inflammation in the gut. Medications to reduce gastrointestinal discomfort also may be tried, such as simethicone to reduce and relieve gas in the intestine (220). Physical therapies, such as chiropractic or massage treatments, have been suggested, but there is insufficient evidence to recommend the use of these modalities (220).

A hypoallergenic diet for the breastfeeding person is sometimes advised to reduce potential colic triggers when a food allergy through breast milk exposure is suspected for the infant (219-220). Foods typically suggested to be eliminated in the diet include dairy, fish, peanuts, soy, tree nuts and wheat. There is limited evidence to support a hypoallergenic diet as an approach to colic symptoms, however, and many studies demonstrate equivocal results related to changing to a hypoallergenic diet to resolve colic (219). Additionally, the diet modifications necessary may be difficult for the breastfeeding person to maintain due to the number of food groups eliminated (219).

While treatments may not result in the improvement of colic symptoms, the breastfeeding person should be advised to continue to breastfeed and offered reassurance and acknowledgment of the stress and anxiety that colic can cause (218-220).

Supporting Resources

RESOURCE	DESCRIPTION
Toronto Public Health. Protocol #11: crying and colic in the breastfed baby [Internet]. Toronto (ON): Toronto Public Health; [date unknown]. Available from: https://www.toronto.ca/wp-content/uploads/2017/11/95f9-tph-breastfeeding-protocol-11-crying-colic-2013.pdf	<ul style="list-style-type: none">■ A protocol for health-care providers, including assessment criteria and education suggestions for parents.

Introduction of Complementary Foods

The introduction of solids at six months (or 26 weeks of age) is associated with reduced breastfeeding patterns (i.e., exclusive to partial) or total cessation (221-222). Despite the WHO's recommendation of exclusive breastfeeding to six months of age, there are recommendations from other health authorities globally supporting the introduction of complementary foods for infants between four and six months of age. Despite these differences, there is agreement among health authorities that the introduction of solids prior to 17 weeks (or before the end of four months of age) is significantly associated with increased risks of otitis media, allergies, respiratory and gastrointestinal disorders, and obesity (221).

There are no risks or contraindications associated with exclusive breastfeeding to six months for infants living in developing and developed countries. Rather, exclusivity to six months has demonstrated important health outcomes for the breastfeeding dyad (222). For the infant, breastfeeding to six months reduces the risk of infection and poses no increased risk of growth deficits; for the breastfeeding person, the use of lactational amenorrhea (caused by exclusive breastfeeding) as a temporary method of contraception can naturally support child spacing (222).

To support the avoidance of (too) early introduction of solids and to promote exclusive breastfeeding to six months, strategies for the breastfeeding person and their family (including the infant’s grandmother(s)) include the following:

- Provide supportive guidance and consistent information regarding normal breastfeeding practices during the infant’s first six months.
- Educate parents on normal infant breastfeeding patterns in comparison to formula feeding infants. This includes more frequent feeds, more irregular feeding frequencies, slower weight gain pattern, and a greater likelihood of night time feeds. Similarly, educate parents about the normal growth parameters for a breastfed infant versus a formula-fed one. Slower weight gain is a common reason for introducing solids.
- Provide additional reassurance and support to breastfeeding persons who are more likely to introduce complementary foods earlier than six months and more likely to cease or reduce breastfeeding. This includes adolescent or first-time parents and persons with a low socio-economic background. Parents of infants who are males, have higher birth weights, or are harder to settle also are at increased risk of early introduction of complementary foods.
- Educate family members on the importance of continuing to support the breastfeeding person throughout the first six months postpartum. This will support exclusivity. Acknowledge the demands of infant care and disrupted sleep on the breastfeeding person. Create ways to support the breastfeeding person to get more rest.
- Emphasize that “good” parenting for the breastfeeding person includes having an infant who will have regular periods of being fussy, crying, or having difficulty settling.
- Indicate to parents that introducing solid foods may not improve infant sleep or make the infant feel more settled. Instead, encourage the breastfeeding person to feed the infant more frequently to support infant growth and development.
- Teach parents about the risks associated with early introduction of solids and how breast milk can be sufficient for a growing infant (221-222).

Supporting Resources

RESOURCE	DESCRIPTION
Best Start Resource Centre. Feeding your baby: a guide to help you introduce solid foods [Internet]. Toronto (ON): Best Start Resource Centre; 2016. Available from: https://www.beststart.org/resources/nutrition/feedingyourbaby/D12-E-FeedingYourBaby.pdf	<ul style="list-style-type: none"> ■ A guide on how to feed a baby from six months to one year of age while continuing to breastfeed.
Health Canada; Canadian Paediatric Society; Dietitians of Canada, et al. Nutrition for Healthy Term Infants: Recommendations from Six to 24 Months [Internet]. Ottawa (ON): Government of Canada; 2015 (updated 2015 Jan 19). Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding/nutrition-healthy-term-infants-recommendations-birth-six-months/6-24-months.html	<ul style="list-style-type: none"> ■ Principles include recognition of breastfeeding as a source of nutrition for older infants and young children, as complementary foods are introduced. ■ This recommendation supports breastfeeding up to two years or as long as the breastfeeding dyad determine.

Appendix F: Risk Factors for Delayed Lactogenesis Stage II

The onset of increased breast milk production, defined as lactogenesis Stage II, is an important development to support breastfeeding and the associated benefits for the breastfeeding person and newborn. Delayed onset of lactogenesis Stage II is defined as occurring beyond two to eight days following childbirth. Such delay has a high prevalence (between 23 per cent and 44 per cent) in the USA.

Risk factors for delayed lactogenesis Stage II are complex (see **Table 18**). Effective interventions, such as support and education, are critical to reducing shorter breastfeeding duration and excess newborn weight loss.

Table 18: Perinatal Risk Factors in Developed Countries for Delayed Lactogenesis Stage II

PRENATAL RISK FACTORS	INTRAPARTUM RISK FACTORS	POSTPARTUM RISK FACTORS	NEWBORN RISK FACTORS
Primiparity	Prolonged second stage of labour	Flat or inverted nipples	Macrosomia
Elevated pre-pregnancy BMI consistent with overweight or obese	Medications used for pain relief	Lack of breast discomfort (suggesting a lack of increased milk supply or perception of milk not “coming in”)	Separation of the breastfeeding dyad for clinical investigations or admission to a neonatal intensive care unit
Type 1 diabetes mellitus	Caesarean birth, particularly if under general anesthetic	Suboptimal breastfeeding behavior in the first few days of life, as measured by lower LATCH scores or lack of stimulation or breast “emptying”	Feeding with formula or other manufactured infant feeding product
Gestational diabetes mellitus	Elevated cortisol levels related to intrapartum stress	Decreased prolactin response to infant suckling in overweight and obese persons	Lower Apgar score at one and five minutes
Older age and primiparity	Preterm labour and birth	Breast edema in the first 48 hours	Lower gestational age and primiparity
		Possibly larger breast size and difficulties achieving effective positioning and latch	Elevated cortisol levels due to stress

Sources: Matias S, Dewey K, Quesenberry C, et al. Maternal prepregnancy obesity and insulin treatment during pregnancy are independently associated with delayed lactogenesis in women with recent gestational diabetes mellitus. *Am J Clin Nutr.* 2014;99(1):115–21; and Nommsen-Rivers L, Chantry C, Pearson J, et al. Delayed onset of lactogenesis among first-time mothers is related to maternal obesity and factors associated with ineffective breastfeeding. *Am J Clin Nutr.* 2010;92(3):574–84.

Appendix G: Importance of Breastfeeding to Short- and Long-Term Health Outcomes and Risks of Not Breastfeeding

Breastfeeding initiation, exclusivity, and continuation have positive short- and long-term health outcomes for the breastfeeding person and the infant. In the promotion and support of breastfeeding, these factors indicate the importance of breastfeeding as a practice that contributes to reductions in morbidities and mortality. In contrast, a lack of breastfeeding has health risks for the breastfeeding dyad. As part of informed decision-making regarding infant feeding, these harms and benefits must be discussed.

Table 19: Importance of Breastfeeding to Short-Term Health Outcomes for Breastfeeding Persons and Risks of Not Breastfeeding

SHORT-TERM HEALTH OUTCOMES AND RISKS OF NOT BREASTFEEDING	
Lactational amenorrhea	<ul style="list-style-type: none"> ■ In comparison to no breastfeeding, persons who exclusively or predominantly breastfed greater than 12 months had a 23 percent higher likelihood of continued lactational amenorrhea at six months postpartum. ■ For those who partially breastfed, there was a 21 percent increased likelihood of continued lactational amenorrhea at six months postpartum. ■ Exclusive breastfeeding and longer duration of breastfeeding, when compared to mixed feeding (i.e., breastfeeding and formula or other manufactured infant and young child feeding products), was associated with a mean and median increase in duration of lactational amenorrhea.
Postpartum depression	<ul style="list-style-type: none"> ■ Postpartum depression predicts a reduced duration of breastfeeding. ■ It is unclear from the evidence whether breastfeeding reduces the association between prenatal depression and postpartum depression.
Postpartum weight change	<ul style="list-style-type: none"> ■ The majority of studies showed little or no association between postpartum weight change and breastfeeding. ■ It is unclear whether persons who intentionally wish to lose weight have more success with weight loss if they are breastfeeding than if they are not.

Sources: World Health Organization; UNICEF. Protecting, promoting, and supporting breastfeeding in facilities providing maternity and newborn services: the revised Baby-friendly Hospital Initiative 2018. Implementation guidance. Geneva (CH): World Health Organization; 2018. Available from: <http://www.who.int/nutrition/publications/infantfeeding/bfhi-implementation-2018.pdf?ua=1>; Chowdhury R, Sinha B, Sankar MJ, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015;104(Suppl 467):96–113; Duan X, Wang J, Jiang X. A meta-analysis of breastfeeding and osteoporotic fracture risk in females. Osteoporos Int. 2017;28(2):495–503; and Stuebe A. Associations among lactation, maternal carbohydrate metabolism, and cardiovascular health. Clin Obstet Gynecol. 2015;58(4):827–39.

Table 20: Importance of Breastfeeding to Long-Term Health Outcomes for Breastfeeding Persons and Risks of Not Breastfeeding

LONG-TERM HEALTH OUTCOMES AND RISKS OF NON BREASTFEEDING				
Osteoporosis	<ul style="list-style-type: none"> A systematic review and meta-analysis found a dose-response with breastfeeding in which a longer duration of breastfeeding was positively associated with a decreased risk of osteoporotic and hip fractures among post-menopausal women. 			
Breast cancer	<ul style="list-style-type: none"> Approximately twenty thousand deaths due to breast cancer could be prevented by improving breastfeeding rates 			
	Ever breastfed, versus never breastfed	Breastfed for less than six months, versus never breastfed	Breastfed for 6-12 months, versus never breastfed	Breastfed for more than 12 months, versus never breastfed
	22 percent reduction	7 percent risk reduction	9 percent risk reduction	23-26 percent reduction
Ovarian cancer	30 percent reduction	17 percent reduction	28 percent reduction	37 percent reduction

Sources: World Health Organization; UNICEF. Protecting, promoting, and supporting breastfeeding in facilities providing maternity and newborn services: the revised Baby-friendly Hospital Initiative 2018. Implementation guidance. Geneva (CH): World Health Organization; 2018. Available from: <http://www.who.int/nutrition/publications/infantfeeding/bfhi-implementation-2018.pdf?ua=1>; Chowdhury R, Sinha B, Sankar MJ, et al. Breastfeeding and maternal health outcomes: a systematic review and meta-analysis. Acta Paediatr. 2015;104(Suppl 467):96–113; Duan X, Wang J, Jiang X. A meta-analysis of breastfeeding and osteoporotic fracture risk in females. Osteoporos Int. 2017;28(2):495–503; and Stuebe A. Associations among lactation, maternal carbohydrate metabolism, and cardiovascular health. Clin Obstet Gynecol. 2015;58(4):827–39.

***Appendix D** includes further discussion of breastfeeding and gestational diabetes and postpartum depression.

Acta Paediatrica developed a special issue coordinated by WHO focusing on the impact of breastfeeding on health for children and breastfeeding persons. All of the 10 review articles are open access and are available from: <http://onlinelibrary.wiley.com/doi/10.1111/apa.2015.104.issue-S467/issuetoc>.

Table 21: Importance of Breastfeeding to Short-Term and Long-Term Health Outcomes for Infant and Young Child Health Outcomes and Risks of Not Breastfeeding

HEALTH OUTCOME	RISK OF NOT BREASTFEEDING TO HEALTH OUTCOMES
Mortality (all causes)	<ul style="list-style-type: none"> ■ A higher risk of mortality for infants and young children who are not breastfed. ■ Infants to 11 months of age who are not breastfed have a 1.8 fold increased risk of mortality compared to those who received any breast milk. ■ Young children to two years of age have a twofold higher risk of death when not breastfed compared to those who received any breast milk.
Mortality (infection-related)	<ul style="list-style-type: none"> ■ Risk of infection-related mortality is highest among infants 0–5 months of age who were never breastfed compared to those predominately or partially breastfed. ■ For children ages 6–23 months, a twofold increased risk of mortality is seen with no breastfeeding, compared to those who received any breastfeeding. ■ Infants exclusively breastfed had the lowest risk of infection-related mortality. ■ Partial breastfeeding offers modest protection when compared to no breastfeeding.
Intelligence tests	<ul style="list-style-type: none"> ■ A positive association is seen with breastfeeding and higher intelligence test scores. ■ A causal association is also suggested for breastfeeding and cognition.
Child growth	<ul style="list-style-type: none"> ■ The evidence is not conclusive on growth parameters (weight or length/height measures) and breastfeeding. ■ The evidence from studies in low- and high-income countries indicates a small but significant reduction in BMI/weight for height measures among those who are breastfed.
Malocclusions or misalignment of the teeth	<ul style="list-style-type: none"> ■ There is a positive association between longer duration of breastfeeding and prevention of malocclusions.
Dental caries	<ul style="list-style-type: none"> ■ Breastfeeding during infancy up to 12 months of age may protect against dental caries. A systematic review and meta-analysis found that a longer duration of breastfeeding up to 12 months of age, versus a shorter duration, had a reduced risk of caries. However, some studies found that young children who were breastfed more than 12 months had an increased risk of dental caries, when compared to those who were breastfed less than 12 months. There was a further increased risk of caries for young children greater than 12 months of age who were breastfed at night or frequently. For newborns and infants up to 12 months of age, evidence indicates that breastfeeding may protect against dental caries.
Otitis media	<ul style="list-style-type: none"> ■ The risk for otitis media among formula-fed infants is doubled compared to infants exclusively breastfed for three months or longer.

Source: Sankar M, Sinha B, Chowdhury R et al. Optimal breastfeeding practices and infant and child mortality: a systematic review and meta-analysis. *Acta Paediatr (Oslo)*. 2015;104(S467):3-13; and Tham R, Bowatte G, Dharmage SC, Tan DJ, Lau MXZ, Dai X, Allen KJ, Lodge CK. Breastfeeding and the risk of dental caries: a systematic review and meta-analysis. *Acta Paediatr (Oslo)*. 2015;104(S467):62-84.

Appendix H: Clinical Indications for Use of Formula or Other Manufactured Infant and Young Child Feeding Products

Clinical Indications for Use of Formula or Other Manufactured Infant and Young Child Feeding Products

There are a small number of clinical indications for breastfeeding persons and infants that may indicate use of formula or other manufactured infant and young child feeding products on either a temporary or permanent basis. In any situation where ceasing breastfeeding and considering using formula or other manufactured infant and young child feeding products, harms and benefits must be discussed through an informed decision-making process.

Table 22: Clinical Conditions of the Breastfeeding Person

Temporary use of formula or other manufactured infant and young child feeding products	<ul style="list-style-type: none">■ Severe illness in which the person is unable to care for the infant (e.g., sepsis).■ Active HSV lesions on the person's breasts and the infant's mouth.■ Use of medications, such as radioactive iodine, cytotoxic chemotherapy, frequent or prolonged use of topical iodine or iodophors, and drugs causing side-effects of respiratory depression and drowsiness (including opioids, anti-epileptics, and sedating psychotropic medications).
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Sources: World Health Organization. Acceptable medical reasons for use of breast-milk substitutes. Geneva (CH): World Health Organization; 2009; and World Health Organization. HIV and infant feeding 2010: an updated framework for priority action. Geneva (CH): World Health Organization; 2012.

Note that the 2009 WHO resource referenced in **Table 22** also indicated that human immunodeficiency virus (HIV) infection is a condition in which permanent avoidance of breastfeeding is recommended in cases where replacement feeding is acceptable, feasible, affordable, sustainable, and safe (AFASS). This information has been omitted from **Table 22** as WHO has since updated its guidelines on HIV and infant feeding based on changes in antiretroviral therapy availability and effectiveness. As HIV infection and breastfeeding is beyond the scope of this guideline, it is not discussed further in this BPG, but for more information, please see *HIV and infant feeding 2010: an updated framework for priority action*, available from: http://www.who.int/maternal_child_adolescent/documents/9241590777/en/ For the Canadian context, refer to “*Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months*”. It is described in the Supporting Resources section on the following page.

Table 23: Clinical Conditions of the Infant

<p>Indications of permanent use of formula or other manufactured infant and young child feeding products</p>	<ul style="list-style-type: none"> ■ Classic galactosemia. ■ Maple syrup urine disease. ■ Phenylketonuria. (Some breastfeeding may be possible with careful monitoring).
<p>Indications of temporary use of formula or other manufactured infant and young child feeding products</p>	<ul style="list-style-type: none"> ■ A very low birth weight of 1500 grams or less. ■ Very preterm infants born at or before 32 weeks gestation. ■ Hypoglycemia risk due to impaired metabolic adaptation or increased glucose demand (e.g., small for gestational age, preterm, significant intrapartum hypoxia or ischemia, ill infant, or having a breastfeeding parent who is diabetic) that does not respond to breastfeeding.

Source: World Health Organization. Acceptable medical reasons for use of breast-milk substitutes. Geneva (CH): World Health Organization; 2009.

Supporting Resources

RESOURCE	DESCRIPTION
<p>World Health Organization. Acceptable medical reasons for use of breast-milk substitutes. Geneva (CH): World Health Organization; 2009. Available from: http://www.who.int/nutrition/publications/infantfeeding/WHO_NMH_NHD_09.01/en/</p>	<ul style="list-style-type: none"> ■ A listing of clinical conditions for infants that may warrant temporary or permanent avoidance of breast milk exposure.
<p>Health Canada; Canadian Paediatric Society; Dietitians of Canada, et al. Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months [Internet]. Ottawa (ON): Government of Canada; 2015 (updated 2015 Aug 18). Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding/nutrition-healthy-term-infants-recommendations-birth-six-months.html#a10</p>	<ul style="list-style-type: none"> ■ National recommendations from Canada on infant feeding practices from birth to six months of age. ■ In regards to postpartum persons who are HIV positive, including those who are on antiretroviral therapy, the guideline recommends that breastfeeding should be avoided as the virus can be transmitted via breast milk. The guideline recommends counselling for the breastfeeding person regarding the risk of HIV transmission during pregnancy and lactation to support informed decision-making.

Appendix I: Strategies to Promote and Support Exclusive and Continued Breastfeeding as the Cultural Norm

To establish exclusive and continued breastfeeding as the cultural norm, it can be informative to have an understanding of the experiences of persons who breastfeed for six months to two years (or longer). Identifying which strategies are effective at reinforcing breastfeeding as the cultural norm—such as providing breastfeeding education in primary and high schools and integrating breastfeeding accommodations into college and university campuses—is helpful. An understanding of attitudes towards breastfeeding in public can inform efforts to address or change current values and beliefs, indicating where changes are needed to support and promote exclusive and continued breastfeeding.

Breastfeeding beyond Six Months to Two Years or Longer

Research has identified some key attributes of persons who breastfeed their infants beyond 12 months of age:

- i) They recognize and value the health benefits of breastfeeding for the breastfeeding person (e.g., a reduced risk of T2DM and pre-menopausal cancers, including breast and ovarian) and for the infant and young child (e.g., immune protection and reduced risk of T2DM, certain childhood cancers, and obesity).
- ii) They have an increased likelihood of being partnered or married, having a higher socio-economic status, and staying at home and not returning to work (where applicable) for the first six months postpartum or longer. This may or may not involve a parental leave of absence.
- iii) They adopt the philosophy of attachment parenting, which supports components such as responsive cue-based breastfeeding, co-sleeping, and babywearing.
- iv) They have a mutually enjoyable close relationship with their infant or young child (223).

Research indicates that there are negative societal opinions of breastfeeding beyond 12 months, including stigma and marginalization, especially with longer continued breastfeeding (223). The experiences of stigma adversely impact breastfeeding confidence and the decision of whether or not to continue to breastfeed. Additionally, stigma can create secrecy for some breastfeeding persons, leading to a practice of “closet nursing,” in which some aspects of breastfeeding are concealed or denied out of fear of judgment or unwanted opinions.

Nurses have an important role in supporting persons who breastfeed up to and beyond infancy, as they frequently have interactions with families as part of routine clinical practice (223). As nurses have skills of critical thinking and evidence-based decision-making, they are in an ideal position to support breastfeeding beyond infancy. To do this, nurses must seek to understand the experiences of breastfeeding persons and what continued breastfeeding means to them; they must then use this understanding to inform their interactions and care. By applying this approach, nurses can be agents of change to support continued breastfeeding as the norm.

Breastfeeding Curricula in Primary and High Schools

WHO and UNICEF UK recommend the inclusion of educational interventions in the school setting to increase positive attitudes and awareness of breastfeeding (224). Educational interventions with children and adolescents positively affect their knowledge of breastfeeding (224). Students in primary and secondary schools support receiving

education on breastfeeding (224). In particular, educating high school students on breastfeeding is viewed as relevant as decisions regarding infant feeding often are contemplated in adolescence or early adulthood (i.e., prior to conception). As many students may not know about the importance of breastfeeding or may not have observed it before, the inclusion of breastfeeding education in primary and high school curricula creates an opportunity to inform them using accurate, evidence-based information (225).

In addition to raising awareness of breastfeeding and its importance, educational interventions in primary and high school settings also positively affect breastfeeding attitudes and intentions. Studies focusing on the impact of school health programs on breastfeeding attitudes in locations such as Brazil, Northern Ireland, Canada (in Nova Scotia and an Ojibwa community), and the USA found positive effects on breastfeeding attitudes and perceptions (226). The inclusion of breastfeeding education in curricula promoted it as the cultural norm and positively impacted future intentions to breastfeed (226).

Breastfeeding on Campus

To support exclusive and continued breastfeeding on campus, supports are needed (227). Studies suggest that strategies such as being able to pump on campus, having access to available breast milk storage spaces, and receiving the support of students and faculty aided the decision of breastfeeding persons to continue to breastfeed (227).

The Breastfeeding Friendly Campus Initiative (www.bfcampuses.ca) details a strategy to support breastfeeding persons who are attending post-secondary educational institutions in Ontario, Canada. The strategy seeks to educate schools on their duty to accommodate breastfeeding students, to make students aware of their rights as breastfeeding persons, and to inform faculty of their obligations to support breastfeeding accommodations on campus.

Attitudes towards Breastfeeding in Public Spaces

In the province of Ontario, Canada, breastfeeding in public is protected as a human right through the Ontario Human Rights Code. Despite this legal protection and societal support for breastfeeding, negative attitudes persist towards openly breastfeeding in public spaces, such as malls or restaurants. These attitudes include feelings that breastfeeding should be done discretely or that it should be limited to washrooms in order to avoid breast exposure and be respectful of the comfort of others (228-229). Such attitudes and the limitations they impose on public breastfeeding can act as barriers to exclusive and continued breastfeeding, influencing the decisions of breastfeeding persons regarding whether continuing to breastfeed or to wean (228).

Breastfeeding promotion strategies need to be implemented to change attitudes and reinforce breastfeeding as a human right. For breastfeeding persons to feel comfortable breastfeeding in public spaces, they must have autonomy and equity (230). Despite public spheres that are open, available, and legally accessible to everyone, breastfeeding persons may perceive themselves—or be perceived by others—as not having equal access to those spaces; they also may feel that they need to abide by social norms (such as discretion) (230). Normalizing breastfeeding affords breastfeeding persons the right to feed their infants in private and public spaces and to be treated as equals who are not disadvantaged, segregated to bathroom stalls, or subject to censure or hostility (230). Creating a normalized breastfeeding culture requires giving breastfeeding persons the right to make autonomous choices regarding where they breastfeed and their visibility in public spaces (230).

Supporting Resources

RESOURCE	DESCRIPTION
BREASTFEEDING BEYOND SIX MONTHS TO TWO YEARS, OR LONGER	
<p>Tedder J. The roadmap to breastfeeding success: teaching child development to extend breastfeeding duration. <i>J Perinat Educ.</i> 2015;24(4):239-248. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4718010/</p>	<ul style="list-style-type: none"> ■ An evidence-based clinical project that supports breastfeeding to one year, or longer and integrates child development theory.
BREASTFEEDING AS THE CULTURAL NORM	
<p>Breastfeeding Committee for Canada [Internet]. [place unknown]: Breastfeeding Committee for Canada; c2014. Available from: http://www.breastfeedingcanada.ca/Default_en.aspx</p>	<ul style="list-style-type: none"> ■ A website developed by BCC. ■ BCC's vision is to establish breastfeeding as the cultural norm for infant feeding within Canada.
BREASTFEEDING CURRICULA IN SCHOOLS	
<p>OPHA Breastfeeding Promotion Workgroup. Breastfeeding information and activity kit for secondary school teachers [Internet]. Toronto (ON): Ontario Public Health Association; 2009. Available from: http://www.opha.on.ca/getmedia/5725dc8f-bc93-47da-8d61-6c23561e4e41/BF_Info-ActivityKit-May2009.pdf.aspx?ext=.pdf</p>	<ul style="list-style-type: none"> ■ A toolkit for educators to promote breastfeeding to secondary school students. ■ Includes activities, structured learning experiences, and resources on breastfeeding.
SUPPORTING BREASTFEEDING IN COMMUNITY SETTINGS	
<p>Public Health Agency of Canada. Protecting, promoting and supporting breastfeeding. A practical workbook for community-based programs. 2nd ed. [Internet]. Ottawa (ON): Public Health Agency of Canada; 2014. Available from: https://www.pharmacists.ca/cpha-ca/assets/File/education-practice-resources/BreastfeedingPHACworkbook.pdf</p>	<ul style="list-style-type: none"> ■ A workbook to support communities to identify strategies to promote, protect, and support breastfeeding in a population health context, including engaging the community as a partner and moving towards a breastfeeding-friendly community.

SUPPORTING BREASTFEEDING IN COMMUNITY SETTINGS

Breastfeeding Committee of the Wisconsin Partnership for Activity and Nutrition. Ten steps to breastfeeding friendly child care centers resource kit [Internet]. Madison (WI): Wisconsin Department of Health Services; 2016. Available from: <https://www.dhs.wisconsin.gov/publications/p0/p00022.pdf>

- A toolkit focusing on strategies to promote breastfeeding in child care centers by creating a culturally appropriate, breastfeeding-friendly environment such as (a) displaying pictures of breastfeeding families that are ethnically and racially diverse and (b) using culturally diverse breastfeeding educational materials.

EXPERIENCES OF BREASTFEEDING IN PUBLIC

Toronto. Breastfeeding in public [Internet]. Toronto (ON): City of Toronto; 2018. Available from: <https://www.toronto.ca/community-people/children-parenting/pregnancy-and-parenting/breastfeeding/breastfeeding-in-public/>

- A resource focusing on breastfeeding in public as a human right.
- Includes strategies that can be taken if a person is asked to stop breastfeeding in public.

From Bump to Breastfeeding: Feeding Out and About [Video]. United Kingdom: Best Beginnings; 2008. Available from: <https://www.bestbeginnings.org.uk/feeding-out-and-about/3d272399-9120-4d5f-b619-aae5193bfe93>

- An excerpt from the “*Bump to Breastfeeding*” video series focusing on experiences of breastfeeding in public.

Ten square metres of love [Video]. [place unknown]: UNICEF; 2015. Available from: https://www.unicef.org/nutrition/index_24824.html

- A breastfeeding health promotion campaign advocating for breastfeeding in public, including spaces designated for breastfeeding.

Appendix J: General Breastfeeding Resources

The following is not an exhaustive list of resources, but rather a selection of resources identified within the systematic reviews, AGREE II-appraised guidelines, and by the expert panel or external stakeholder feedback. Inclusion in this list does not constitute an endorsement by RNAO.

Links to websites that are external to the RNAO are provided for information purposes only. The RNAO is not responsible for the quality, accuracy, reliability, or currency of the information provided through these sources. Further, the RNAO has not determined the extent to which these resources have been evaluated. Questions related to these resources should be directed to the source.

PROMOTING BREASTFEEDING IN CANADA AND GLOBALLY

<p>Breastfeeding Committee for Canada [Internet]. [place unknown]: Breastfeeding Committee for Canada; 2014. Available from: http://www.breastfeedingcanada.ca/</p>	<ul style="list-style-type: none"> ■ BCC is a Health Canada Initiative and includes membership from professional and consumer organizations, as well as individual breastfeeding experts. ■ BCC seeks to establish breastfeeding as the cultural norm for infant feeding within Canada.
<p>Baby-Friendly Initiative Ontario [Internet]. [place unknown]: BFI Ontario; 2018. Available from: http://www.bfiontario.ca</p>	<ul style="list-style-type: none"> ■ The provincial authority of the BCC. Their mission is to protect, promote and support breastfeeding in the province of Ontario, Canada through the adoption, implantation, and maintenance of the practice standards of the BFI.
<p>BFI Strategy for Ontario [Internet]. Toronto (ON): Michael Garron Hospital; 2012. Available from: http://www.tegh.on.ca/bins/content_page.asp?cid=3-22-6657&lang=1</p>	<ul style="list-style-type: none"> ■ The BFI Strategy for Ontario provides hospitals and community health organizations with training, tools, guidance, and educational resources to support BFI designation.
<p>Breastfeeding Resources Ontario [Internet]. [place unknown]: BFI Strategy for Ontario; [date unknown]. Available from: http://breastfeedingresourcesontario.ca/</p>	<ul style="list-style-type: none"> ■ Resources aligned with BFI that are evidence-informed and high-quality to facilitate knowledge translation and sharing of best practice resources.
<p>Health topics. Breastfeeding [Internet]. [place unknown]: World Health Organization; 2018. Available from: http://www.who.int/topics/breastfeeding/en/</p>	<ul style="list-style-type: none"> ■ The website includes links to related breastfeeding topics including general information, publications, BFI, and statistics.

PROMOTING BREASTFEEDING IN CANADA AND GLOBALLY

UNICEF United Kingdom The Baby-Friendly Initiative [Internet]. [place unknown]: UNICEF; 2018. Available from: <https://www.unicef.org.uk/babyfriendly/>

- Website includes multiple BFI resources, information on skin-to-skin contact, responsive cue-based breastfeeding, and other breastfeeding-related topics.

RESOURCES FOR MEMBERS OF THE INTERPROFESSIONAL TEAM

Optimizing Support for Breastfeeding as Part of Obstetric Practice (American College of Obstetrics and Gynecology, 2016). <https://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Support-for-Breastfeeding-as-Part-of-Obstetric-Practice>

- A Committee Opinion paper from ACOG outlining the unique role of obstetricians and gynecologists to support breastfeeding.

Physician Breastfeeding Reference Manual & Quick Reference Guide, Baby-Friendly Newfoundland & Labrador (2016). <http://breastfeedingresourcesontario.ca/resource/physician-breastfeeding-reference-manual-quick-reference-guide>

- A two-part breastfeeding resource consisting of a Quick Reference Guide supported by a detailed Reference Manual.
- The resource is designed to assist primary health-care providers to support breastfeeding using evidence.

OTHER RESOURCES

Pre-conception health (Best Start Resource Centre, 2017). <http://www.healthbeforepregnancy.ca/breastfeeding/>

- A resource focusing on pre-conceptual health including parenting and breastfeeding.

Prenatal Education Program (Best Start Resource Centre, 2017). <http://en.beststart.org/resources-and-research/prenatal-education-program>

- A prenatal resource that included a focus on breastfeeding basics.

Bilingual Online Ontario Breastfeeding Services <http://ontariobreastfeeds.ca/>

- A directory of online breastfeeding services for Ontario, Canada, including those provided in English and French.

Appendix K: Description of the Toolkit

BPGs can only be successfully implemented if planning, resources, organizational, and administrative supports are adequate and there is appropriate facilitation. To encourage successful implementation, an RNAO expert panel of nurses, researchers, and administrators has developed the *Toolkit: Implementation of Best Practice Guidelines* (2012). The *Toolkit* is based on available evidence, theoretical perspectives, and consensus. We recommend the *Toolkit* for guiding the implementation of any clinical practice guideline in a health-care organization.

The *Toolkit* provides step-by-step directions for the individuals and groups involved in planning, coordinating, and facilitating the guideline implementation. These steps reflect a process that is dynamic and iterative, rather than linear. Therefore, at each phase, preparation for the next phases and reflection on the previous phase is essential. Specifically, the *Toolkit* addresses the following key steps, as illustrated in the “Knowledge-to-Action” framework (87):

1. Identify the problem: Identify, review, and select knowledge (e.g., BPG).
2. Adapt knowledge to the local context:
 - Assess barriers and facilitators to knowledge use, and
 - Identify resources.
3. Select, tailor, and implement interventions.
4. Monitor knowledge use.
5. Evaluate outcomes.
6. Sustain knowledge use.

Implementing guidelines to effect successful practice changes and positive clinical impact is a complex undertaking. The *Toolkit* is one key resource for managing this process. It can be downloaded at www.RNAO.ca/bpg/resources/toolkit-implementation-best-practice-guidelines-second-edition

Notes

Lined area for taking notes, consisting of 25 horizontal lines.

ia BPG

INTERNATIONAL
AFFAIRS & BEST PRACTICE
GUIDELINES

TRANSFORMING
NURSING THROUGH
KNOWLEDGE

Best Practice Guideline

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