Care CEUs

Continuing Education for Nursing Home Administrators

Breastfeeding Education

Introduction

According to the Centers for Disease Control and Prevention (CDC), breastfeeding is the best source of nutrition for most infants. Therefore, patients should receive breastfeeding education to ensure they effectively breastfeed infants. The question is, how can health care professionals provide effective breastfeeding education? This course will answer that very question, while providing breastfeeding recommendations that may be used to optimize the breastfeeding process.

Section 1: Breastfeeding

A 22-year-old, first-time mother presents to a health care facility. The new mother has concerns regarding breastfeeding. Initially, the new mother reports that she is "interested" in breastfeeding her newborn child - however, she is "not sure" how long she should breastfeed, or how to know if her child is receiving enough breast milk. Additionally, the new mother in concerned about "depression" and "COVID-19." Upon questioning from a health care professional, the patient then reveals that she may not breastfeed her newborn child "at all" and may "feed" her child "formula instead."

The scenario presented above highlights a patient that may require breastfeeding education. The question that remains is, how can health care professionals provide effective breastfeeding education? Health care professionals can provide effective breastfeeding education to individuals by incorporating the five essential elements of breastfeeding education into patient care. With that said, the first essential element of effective breastfeeding education is to understand why breastfeeding is important, and how to provide breastfeeding education. This section of the course will provide insight into why breastfeeding is important, while highlighting recommendations on how to provide breastfeeding education to patients. The information found within this section of the course was derived from materials provided by the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) unless, otherwise, specified (Centers for Disease Control and Prevention [CDC], 2021; World Health Organization [WHO], 2022).

What is breastfeeding?

Breastfeeding may refer to the act or process of feeding a child human breast milk.

Why is breastfeeding important?

Breastfeeding is important because it has health benefits for both newborn children and new mothers.

Health care professionals should note the following breastfeeding recommendations: the WHO recommends that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first six months of life; the WHO recommends that infants should be breastfed on demand (i.e., as often as the child wants, day and night) and no bottles, teats, or pacifiers should be used; the American Academy of Pediatrics recommends that infants be exclusively breastfed for about the first six months with continued breastfeeding along with introducing appropriate complementary foods for one year or longer (note: exclusive breastfeeding may refer to the act or process of providing a child with only breast milk for consumption without providing a child with additional food or drink, including water; the act or process of only feeding a child human breast milk; the term pacifier may refer to any nipple-shaped device/object that may be provided to an infant for the intended purpose of sucking and/or biting).

What are the health benefits of breastfeeding for a newborn child?

- **Breastfeeding can help prevent malnutrition** - breastfeeding is recognized as the best source of nutrition for most infants; breast milk is the ideal food for infants because it contains antibodies which help protect against many common childhood illnesses; breast milk provides all of the energy and nutrients that a newborn child requires for the first months of life, and it continues to provide up to half or more of a child's nutritional needs during the second half of the first year, and up to one third during the second year of life (note: malnutrition may refer to deficiencies, excesses, or imbalances in an individual's intake of energy and/or nutrients).
- **Breastfeeding may reduce/prevent infant digestion issues** - evidence suggests that human breast milk is easier for infants to digest when compared to formulas; breastfeeding can eliminate the digestive stress some formulas may cause infants; breastfeeding can protect infants' delicate digestive systems and reduce/prevent infant digestion issues (note: the term formula may refer to any human milk substitute intended for infant consumption).

- **Breastfeeding may reduce the incidence of nonspecific gastrointestinal tract infections** - evidence suggests that any breastfeeding is associated with a reduction in the incidence of nonspecific gastrointestinal tract infections.
- **Breastfeeding may prevent hospitalizations due to respiratory tract infections** - evidence suggests that the risk of hospitalization for lower respiratory tract infections in the first year is reduced when infants breastfed exclusively for more than four months.
- **Breastfeeding may reduce the incidence of otitis media** - evidence suggests that any breastfeeding compared with exclusive commercial infant formula feeding will reduce the incidence of otitis media (OM); exclusive breastfeeding for more than three months reduces the risk of otitis media.
- **Breastfeeding may reduce the risk of sudden infant death syndrome (SIDS)** - evidence suggests that breastfeeding is associated with a reduced risk of SIDS (note: the term sudden infant death syndrome [SIDS] may refer to the unexplained death of a healthy infant, which typically occurs while the infant is asleep).
- **Breastfeeding may reduce the incidence of allergic diseases** - evidence suggests that exclusive breastfeeding provides a protective effect, which can help reduce the incidence of clinical asthma, atopic dermatitis, and eczema in children.
- **Breastfeeding may reduce the incidence of celiac disease** - evidence suggests that there is a reduction in the risk of developing celiac disease in infants who were breastfed at the time of gluten exposure.
- **Breastfeeding may reduce the incidence of inflammatory bowel disease** - evidence suggests that breastfeeding is associated with a reduction in the risk of childhood inflammatory bowel disease.
- **Breastfeeding may help prevent obesity** - evidence suggests rates of obesity are significantly lower in breastfed infants.
- **Breastfeeding may reduce the incidence of diabetes** - evidence suggests that there is a reduction in the incidence of type 1 diabetes for infants who exclusively breastfed for at least three months; breastfeeding may be associated with a reduction in the incidence of type 1 diabetes.

- **Breastfeeding may reduce the incidence of leukemia and lymphoma** - evidence suggests that there is a reduction in leukemia, which is correlated with the duration of breastfeeding; evidence also suggests that there is a significant reduction in the risk of acute lymphocytic leukemia and in the risk of acute myeloid leukemia in infants who breastfed for six months or longer.
- **Breastfeeding may affect neurodevelopmental outcomes** - evidence suggests higher intelligence scores are noted in infants who exclusively breastfed for three months or longer.
- **Breastfeeding can be beneficial to preterm babies** - evidence suggests that all preterm infants should receive human milk; evidence also suggests that there are several significant short and long-term beneficial effects of feeding preterm babies human milk, such as lower rates of sepsis (note: the term preterm birth may refer to the birth of a live baby that is born before the completion of 37 weeks of pregnancy; the term preterm baby may refer to any baby born preterm).
- **Breastfeeding may reduce the risk of necrotizing enterocolitis** - necrotizing enterocolitis may refer to an intestinal disease characterized by injured and/or inflamed tissue in the small or large intestine; the death of tissue in the intestine. Health care professionals should note that necrotizing enterocolitis occurs most often in premature or "sick" newborn children.

What are the health benefits of breastfeeding for a new mother?

- **Breastfeeding can help lower mothers' risk of high blood pressure, type 2 diabetes, ovarian cancer, and breast cancer** - research indicates mothers that breastfeed have lower incidences of the aforementioned conditions.
- **Breastfeeding can help women lose weight** - breastfeeding burns calories, and when individuals burn calories on a consistent basis, it can help them lose weight.
- **Breastfeeding may help a mother's uterus return to its pre-pregnancy size** - research indicates breastfeeding may help release the hormone oxytocin, which in turn may aid the uterus in returning to its pre-pregnancy size.
- **Breastfeeding can help prevent postpartum depression** - evidence suggests that breastfeeding may help mothers bond with their infants, which in turn could help

mothers avoid postpartum depression (note: postpartum depression may refer to a form of depression associated with childbirth).

What is breastfeeding education?

- Breastfeeding education may refer to any effort made to counsel, assist, guide, and/or facilitate effective breastfeeding (note: effective breastfeeding occurs when an infant receives human breast milk for ingestion).
- One of the primary goals of breastfeeding education should be to support new mothers and parents in achieving their individualized goals for breastfeeding, whether they are considering initiating breastfeeding, or they are already breastfeeding and are facing particular challenges for continuation of breastfeeding.
- Breastfeeding education should be a process and interaction between health care professionals and pregnant women, mothers, and/or parents; breastfeeding education is not intended to be an act of a health care professional "telling a woman what to do;" the goal of breastfeeding education should be to empower women to breastfeed, while respecting their personal situations and wishes; breastfeeding education should not be forced on individuals; breastfeeding education should be made available
and accessible to all pregnant women, mothers, and parents, especially those who are considering or already breastfeeding.
- Breastfeeding education should enable individuals to have the best start at breastfeeding, with support to allow mothers and their neonates to initiate breastfeeding as soon as possible after birth.
- Breastfeeding education can assist mothers and new parents who are considering or are already breastfeeding to overcome challenges; emphasizing to mothers and new parents that breastfeeding provides protection and comfort as well as food; breastfeeding education should respond to the particular barriers that individuals may face.
- Breastfeeding education should anticipate and address important challenges and contexts for breastfeeding, in addition to establishing skills, competencies, and confidence among new mothers and parents.

- Breastfeeding education should include an anticipatory breastfeeding education approach (note: the term anticipatory breastfeeding education approach may refer to an approach or style of education that evaluates and assesses potential and existing challenges that may impact a new mother's or parents' breastfeeding goals). Health care professionals should note the following: an anticipatory breastfeeding education approach can help health care professionals reduce and prevent potential risks, problems, and/or complications that may impact effective breastfeeding.

When should new mothers/parents receive breastfeeding education?

- Breastfeeding education should be provided to all pregnant women and mothers with young children.
- Breastfeeding education should be provided in both the antenatal period of pregnancy and the postnatal/postpartum period of pregnancy, and up to 24 months or longer (note the term antenatal period of pregnancy may refer to period of time from conception until birth; the term postnatal/postpartum period of pregnancy may refer to the period that starts after the birth of a child and continues for six to eight weeks after the birth of a child).
- Breastfeeding education during pregnancy or soon after birth should encourage mothers and their families to start a nurturing, caring, and responsive relationship with their infant; one of the goals of breastfeeding education, during pregnancy or soon after birth, should be to support a positive and loving environment in which a neonate can thrive.
- Postnatal breastfeeding education should further support new mothers and their families, and enable them to build closeness, with skin-to-skin contact and responsive feeding (note: some new mothers may need extra support in establishing and boosting their confidence and providing effective breastfeeding to their newborn children).
- Breastfeeding education should be provided at least six times, and additionally as needed.
- Providing breastfeeding education to new mothers and parents, at least six times, allows for a full range of support to breastfeeding mothers and their families, beginning in the antenatal period through to the introduction of complementary

feeding and beyond (note: health care professionals should ensure that breastfeeding education sessions are of sufficient quality and quantity to be effective).

- The minimum of six breastfeeding education contacts may occur at the following time points: before
  birth (antenatal period); during and immediately after birth (perinatal period up to the first 2 - 3 days after birth); at 1 - 2 weeks after birth (neonatal period); in the first 3 - 4 months (early infancy); at 6 months (at the start of complementary feeding); and after 6 months (late infancy and early childhood), with additional contacts as necessary (e.g., when a parent is planning to return to school or work, or any time that presents concerns or challenges related to breastfeeding) or when opportunities for breastfeeding education occur (e.g., during child immunization visits).
- Health care professionals should note the following: parents and caregivers should be able to access appropriate help when they have concerns about breastfeeding; this may be particularly important in the first few weeks after birth when breastfeeding is being established, and during potential changes in new parents' schedules (e.g., a new mother returns to school or work); an assessment of breastfeeding effectiveness may be valuable in reassuring parents and addressing issues around feeding; breastfeeding education should be provided as a continuum of care, by appropriately trained health care professionals and community-based breastfeeding counselors.

How should health care professionals provide breastfeeding education?

- Breastfeeding education should be provided through face-to-face counseling with new mothers, parents, and caregivers, when appropriate.
- Breastfeeding education may also be provided through telehealth services. Specific information regarding telehealth may be found below.
    - Telehealth may refer to the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health, and health administration.

- A range of technologies may be used to support the delivery of telehealth including the following: text messaging, smartphone apps for mobile phones, websites and computers, standard and wireless telephones, live and asynchronous video, virtual reality, and/or artificial intelligence (AI).

- The different categories or types of telehealth include the following: live video, store-and-forward, remote patient monitoring, and mobile health.

    - **Live video** - live video, in the context of telehealth services, may refer to a live stream, two-way interaction between a patient and a health care professional(s) where both parties are communicating from different locations. Health care professionals should note that live video telehealth services, typically, occur in real time (note: the term real time may refer to the actual time during which a meeting, interaction, process, or event occurs; live).

    - **Store-and-forward** - store-and-forward may refer to a type of telehealth which involves the transmission of recorded health information (e.g., an x-ray or prerecorded video) through electronic communication systems to a health care professional who evaluates the information and provides a health care-related service to a patient(s). Health care professionals should note that store-and-forward telehealth services do not, typically, occur in real time.

    - **Remote patient monitoring** - remote patient monitoring may refer to the use of telehealth-related technologies to collect individuals' health care-related data in one location and electronically transmit it to health care professionals in a different location for assessment and recommendations.

    - **Mobile health** - mobile health may refer to the use of mobile communication devices (e.g., smart phones and tablets) to support health care, public health, and education. Health care professionals should note that mobile health applications can help individuals manage chronic conditions, track sleep patterns or fitness, schedule health care appointments, and/or send public health alerts via text message.

- The potential benefits of telehealth include the following: telehealth has the potential to reach more individuals compared to traditional in-person

programs; patient convenience; telehealth services may be used to help prevent patient exposure to infectious diseases; timely access to locally unavailable health care services; increased communication; telehealth services can allow for real-time interactions between patients and health care professionals; telehealth services can allow for the transmission of recorded health information (e.g., an x-ray or prerecorded video); telehealth services can allow for remote patient monitoring; telehealth services can allow access to mobile health; patient prescriptions may be ordered via telehealth technologies; potential reductions in health care costs; improved patient outcomes; and improved patient satisfaction.

How can health care professionals optimize breastfeeding education?

- **Follow health care organization breastfeeding policies and procedures** - to help optimize breastfeeding education, health care professionals should follow their related health care organization's breastfeeding policies and procedures. Health care professionals should note the following: health care organizations should have written breastfeeding policies and procedures; if breastfeeding policies and procedures do not exist, health care professionals should work to create such policies and procedures to help ensure individuals receive the breastfeeding education they require.
- **Utilize health care organization breastfeeding education checklists** - in addition to policies and procedures, health care professionals should utilize health care organization breastfeeding education checklists to optimize breastfeeding education (note: the term breastfeeding education checklist may refer to a list or guide that outlines specific areas of breastfeeding education that should be reviewed with each new mother within the health care facility). Health care professionals should note the following: breastfeeding education checklists can help increase the continuity of breastfeeding education, as well as the comprehensive nature of the type of breastfeeding education provided to each new mother; if breastfeeding education checklists do not exist within a health care facility, health care professionals should consider developing such checklists.
- **Health care professionals should receive education/training on how to provide breastfeeding education to those in need** - health care organizations should provide breastfeeding education/training to health care professionals. If such education programs do not exist within health care organizations, health care

professionals should work to develop breastfeeding education/training for other health care professionals.

- **Health care professionals should help mothers initiate breastfeeding within the first hour after birth** - to help facilitate the overall breastfeeding process, health care professionals should help new mothers initiate breastfeeding within the first hour of their infant's birth.
- **Ensure the main source of initial infant nutrition is breast milk, unless medically indicated** - health care professionals should focus their initial infant nutrition efforts on breast milk to help establish the breastfeeding process and to ensure the new mother can adequately breastfeed her infant.
- **Allow mothers and infants to remain together** - allowing mothers and infants to remain close while they are receiving health care within a health care facility may help establish the mother-infant bond and, ultimately, promote breastfeeding. Health care professionals should note the following: early and uninterrupted skin-to-skin contact between mothers and infants should be facilitated and encouraged as soon as possible after birth to help establish the mother-infant bond and promote breastfeeding.
- **Allow for the practice of rooming-in** - to build on the previous recommendation, health care professionals should allow new mothers to practice rooming-in, when appropriate (note: the term rooming-in may refer to the practice of allowing mothers and infants to remain together for 24 hours a day). Health care professionals should note the following: rooming-in can help establish the mother-infant bond and, ultimately, promote breastfeeding.
- **Educate new mothers on how to express breast milk** - new mothers should be educated on how to express breast milk as a means of maintaining breastfeeding in the event of separation (e.g., a new mother is separated from a newborn child due to the mother's work schedule). Health care professionals should note the following: the term express, within the context of breastfeeding, may refer to the act or process of removing breast milk from the breast of a woman; expressed breast milk may refer to human breast milk that was removed from the breast.
- **Refer new mothers to breastfeeding support groups** - a breastfeeding support group may refer to any group that offers breastfeeding information, education, guidance, assistance, and support to mothers interested in breastfeeding or

actively breastfeeding their infants. Breastfeeding support groups can provide new mothers the support they may require to effectively breastfeed their infants. Health care professionals should note that breastfeeding support groups may be available to new mothers via electronic means (e.g., a video conferencing platform).

Section 1 Summary

Breastfeeding may refer to the act or process of feeding a child human breast milk. Breastfeeding is important because it has health benefits for both newborn children and new mothers. Breastfeeding education should be provided to all pregnant women and mothers with young children. Breastfeeding education should be provided in both the antenatal period of pregnancy and postnatally, and up to 24 months or longer. Breastfeeding education should be provided at least six times, and additionally as needed. Breastfeeding education should be provided through face-to-face counseling with new mothers, parents, and/or caregivers, when appropriate, or through telehealth services. Health care professionals can optimize breastfeeding education by adhering to the following recommendations: follow health care organization breastfeeding policies and procedures; utilize health care organization breastfeeding education checklists; health care professionals should receive education/training on how to provide breastfeeding support to those in need; health care professionals should help mothers initiate breastfeeding within the first hour after birth; ensure the main source of initial infant nutrition is breast milk, unless medically indicated; allow mothers and infants to remain together; allow for the practice of rooming-in; educate new mothers on how to express breast milk; refer new mothers to breastfeeding support groups. Finally, health care professionals should note the following breastfeeding recommendations: the WHO recommends that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first six months of life; the WHO recommends that infants should be breastfed on demand (i.e., as often as the child wants, day and night) and no bottles, teats, or pacifiers should be used; the American Academy of Pediatrics recommends that infants be exclusively breastfed for about the first six months with continued breastfeeding along with introducing appropriate complementary foods for one year or longer.

Section 1 Key Concepts

- The first element of effective breastfeeding education is to understand why breastfeeding is important, and how to provide breastfeeding education.
- Breastfeeding is important because it has health benefits for both newborn children and new mothers.
- The WHO recommends that children initiate breastfeeding within the first hour of birth and be exclusively breastfed for the first six months of life; the WHO recommends that infants should be breastfed on demand (i.e., as often as the child wants, day and night) and no bottles, teats, or pacifiers should be used; the American Academy of Pediatrics recommends that infants be exclusively breastfed for about the first six months with continued breastfeeding along with introducing appropriate complementary foods for one year or longer.
- Effective breastfeeding occurs when an infant receives human breast milk for ingestion.
- One of the primary goals of breastfeeding education should be to support new mothers and parents in achieving their individualized goals for breastfeeding, whether they are considering initiating breastfeeding, or they are already breastfeeding and are facing particular challenges for continuation of breastfeeding.
- Breastfeeding education should be provided to all pregnant women and mothers with young children.
- Breastfeeding education should be provided in both the antenatal period of pregnancy and the postnatal period of pregnancy, and up to 24 months or longer.
- Breastfeeding education should be provided at least six times, and additionally as needed.
- Breastfeeding education should be provided through face-to-face counseling with new mothers, parents, and/or caregivers, when appropriate, or through telehealth services.
- Health care professionals can optimize breastfeeding education by adhering to the following recommendations: follow health care organization breastfeeding policies and procedures; utilize health care organization breastfeeding education

checklists; health care professionals should receive education on how to provide breastfeeding support to those in need; health care professionals should help mothers initiate breastfeeding within the first hour after birth; ensure the main source of initial infant nutrition is breast milk, unless medically indicated; allow mothers and infants to remain together; allow for the practice of rooming-in; educate new mothers on how to express breast milk; refer new mothers to breastfeeding support groups.

Section 1 Key Terms

Breastfeeding - the act or process of feeding a child human breast milk

Exclusive breastfeeding - the act or process of providing a child with only breast milk for consumption without providing a child with additional food or drink, including water; the act or process of only feeding a child human breast milk

Pacifier - any nipple-shaped device/object that may be provided to an infant for the intended purpose of sucking and/or biting

Malnutrition - deficiencies, excesses, or imbalances in an individual's intake of energy and/or nutrients

Formula - any human milk substitute intended for infant consumption

Sudden infant death syndrome (SIDS) - the unexplained death of a healthy infant, which typically occurs while the infant is asleep

Preterm birth - the birth of a live baby that is born before the completion of 37 weeks of pregnancy

Preterm baby - any baby born preterm

Necrotizing enterocolitis - an intestinal disease characterized by injured and/or inflamed tissue in the small or large intestine; the death of tissue in the intestine

Postpartum depression - a form of depression associated with childbirth

Breastfeeding education - any effort made to counsel, assist, guide, and/or facilitate effective breastfeeding

Anticipatory breastfeeding education approach - an approach or style of education that evaluates and assesses potential and existing challenges that may impact a new mother's or parents' breastfeeding goals

Antenatal period of pregnancy - the period of time from conception until birth

Postnatal/postpartum period of pregnancy - the period that starts after the birth of a child and continues for six to eight weeks after the birth of a child

Telehealth - the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health, and health administration

Live video (within the context of telehealth services) - a live stream, two-way interaction between a patient and a health care professional(s) where both parties are communicating from different locations

Real time (within the context of telehealth services) - the actual time during which a meeting, interaction, process, or event occurs; live

Store-and-forward - a type of telehealth which involves the transmission of recorded health information (e.g., an x-ray or prerecorded video) through electronic communication systems to a health care professional who evaluates the information and provides a health care-related service to a patient(s)

Remote patient monitoring - the use of telehealth-related technologies to collect individuals' health care-related data in one location and electronically transmit it to health care professionals in a different location for assessment and recommendations

Mobile health - the use of mobile communication devices (e.g., smart phones and tablets) to support health care, public health, and education

Breastfeeding education checklist - a list or guide that outlines specific areas of breastfeeding education that should be reviewed with each new mother within the health care facility

Rooming-in - the practice of allowing mothers and infants to remain together for 24 hours a day

Express (within the context of breastfeeding) - the act or process of removing breast milk from the breast of a woman

Expressed breast milk - human breast milk that was removed from the breast

Breastfeeding support group - any group that offers breastfeeding information, education, guidance, assistance, and support to mothers interested in breastfeeding or actively breastfeeding their infants

Section 1 Personal Reflection Question

Why is it important for new mothers to breastfeed their infants?

Section 2: Key Aspects of Effective Breastfeeding

The second element of effective breastfeeding education is to provide individuals with information on key aspects of effective breastfeeding, which include the following: latching and how to hold a child during breastfeeding; signs an infant is receiving enough breast milk; the use of a breast pump; breast milk storage; how to clean, sanitize, and store infant feeding items; diet; and physical activity (note: effective breastfeeding occurs when an infant receives human breast milk for ingestion). With that in mind, this section of the course will review the aforementioned key aspects of effective breastfeeding. The information found within this section of the course was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

Latching and How to Hold a Child During Breastfeeding

Once new mothers decide to breastfeed their newborn children, it is important that they learn about latching and how to hold their child during breastfeeding. Latching may refer to the process of securing a child to a nipple/breast. Mothers can effectively engage in latching by adhering to the following suggestions.

- **Suggestion 1** - pull the child close to the nipple/breast in a manner that allows the child's chin and lower jaw to move into the nipple/breast first.
- **Suggestion 2** - when pulling the child close to the nipple/breast, aim the child's lower lip as far from the base of the nipple as possible to encourage the child to take a large mouthful of the breast.
- **Suggestion 3** - tickle the child's lips or mouth with the nipple/breast to encourage the child to open his or her mouth.

- **Suggestion 4** - determine if the latch feels comfortable. An effective/successful latch should not cause extreme pain or an uncomfortable pinching sensation to the mother.

- **Suggestion 5** - ensure little to no areola is visible. The term areola may refer to the dark or pigmented areas around the nipple(s). If the latch is effective/ successful there should be little to no areola visible to the mother. Health care professionals should note that the aforementioned sign can depend on the size of an areola and the size of a child's mouth.

- **Suggestion 6** - ensure the child's mouth appears to be full with breast. Essentially, if the latch is effective/successful, when the mother looks at the child's mouth, it should look like it is full of breast, (i.e., the child's mouth should look like it is around a portion of the breast consisting of the nipple).

- **Suggestion 7** - ensure the child's lips turn outward. If the latch is effective/ successful the child's lips should turn outwards, not inwards.

- **Suggestion 8** - listen to hear the child swallow. Typically, if the latch is effective/ successful, the mother should hear the child swallow. Health care professionals should note that some children's swallowing sounds may be very soft.

Along with latching, new mothers should receive education on how to hold their child during breastfeeding (note: the term breastfeeding hold may refer to the way an individual holds a child during breastfeeding; the position of a child in relation to the individual breastfeeding). Information regarding the more common types of breastfeeding holds may be found below.

- **Cradle hold** - the cradle hold can be advantageous for infants who take to breastfeeding with ease. To engage in the cradle hold, an individual should hold the child with his or her head on the forearm, with the child's body facing the body of the individual breastfeeding. Health care professionals should note that the cradle hold is considered one of the most comfortable holds for an individual breastfeeding and a child. Health care professionals should also note that the cradle hold is typically a standing breastfeeding hold.

- **Clutch hold** - the clutch hold, otherwise referred to as the "football hold," may be advantageous for individuals who had a C-section, have large breasts, have flat or inverted nipples, and/or experience a strong let-down reflex. The clutch hold may also be advantageous for infants that prefer to breastfeed in a more upright

position. To engage in the clutch hold, individuals should hold the child at the side of his or her body, with the child laying on his or her back and with his or her head at the level of the nipple. The child's head should be supported by placing the palm of a hand at the base of the child's head. In essence, when engaging in the clutch hold, the individual should hold the child up to the nipple/breast, like he or she would hold a football, hence the alternative name for the clutch hold, "football hold." Health care professionals should note that the clutch hold is typically a standing breastfeeding hold.

- **Cross-cradle hold** - the cross-cradle hold, otherwise referred to as the transitional hold, may be advantageous for preterm infants, infants that have trouble obtaining milk from the breast, and/or infants that require extra head support. To engage in the cross-cradle hold, individuals should hold the child along their body with the head of the child in front of the nipple. The child's head should be supported by placing the palm of a hand at the base of the child's head. Health care professionals should note that when utilizing the cross-cradle hold, individuals should ensure the child is secure across their bodies. Health care professionals should also note that the cross-cradle hold is typically a standing breastfeeding hold.

- **Laid-back hold** - the laid-back hold, otherwise referred to as the straddle hold, may be advantageous for infants who take to breastfeeding with ease or for individuals that favor a breastfeeding hold that allows them to lie down. The laid-back hold may also be advantageous for individuals that prefer a relaxed or gentle/delicate breastfeeding approach. To engage in the cross-cradle hold, individuals should lie back on a pillow with the child's head just above and between the breasts. When an individual is in the previous position they may gently guide the child to the nipple or simply allow the child to find the nipple on his or her own. Individuals should support the child's head, shoulders, and body as the child approaches the nipple and breastfeeds.

- **Side-lying hold** - the side-lying hold, otherwise referred to as the side-lying position, may be advantageous for individuals that had a C-section and/or for individuals that would like to lie down and rest while breastfeeding. To engage in the side-lying hold, individuals should lie on their side with their child close to the nipple. When an individual is in the aforementioned position the individual may gently guide the child to the nipple or simply allow the child to find the nipple on

his or her own. Individuals should support the child as deemed appropriate/ comfortable.

Signs an Infant is Receiving Enough Breast Milk

Specific signs can indicate that an infant is receiving enough breast milk. Information regarding some of the more widely accepted signs that may indicate that an infant is receiving enough breast milk may be found below.

- **The child passes clear/pale yellow urine** - a child passing mostly clear/pale yellow urine can be an apparent sign that a child is receiving enough breast milk. In essence, the clear/pale yellow urine can be an indication that a child is hydrated and well nourished. On the other hand, dark/deep yellow or orange urine can be a sign that a child is dehydrated and/or malnourished. Dehydration and malnutrition can be dangerous for infant health. Health care professionals should be aware of the following signs of child dehydration: sleepiness, irritability, thirst, dry mouth, and a decrease in the amount of wet diapers (note: infants should produce approximately six wet diapers per 24 hours, beginning after the first 72 hours post birth). Health care professionals should also be aware of the following signs of child malnutrition: not growing at the expected rate, changes in behavior, and low energy levels.
- **The child is producing consistent bowel movements** - a healthy child receiving enough breast milk should produce approximately one to three bowel movements per 24 hours, beginning after the first 24 hours post birth. Health care professionals should note that the color and texture of the bowel movements should be yellowish and loose, beginning after the first 72 hours post birth.
- **Consistent sleep patterns** - a child receiving enough breast milk should switch between short sleep periods and wakeful, alert periods. Health care professionals should note that an infant may experience quiet alert periods and crying alert periods.
- **The child appears content after breastfeeding** - essentially, in this context, a content child is a well fed child.

- **The breasts feel different after breastfeeding is complete** - if the child received enough breast milk, the individual breastfeeding should notice that the breast(s) feels different and/or softer.

Health care professionals should note the following breastfeeding education points of interest: at birth, an infant's stomach can comfortably digest what would fit in a hazelnut (i.e., about one to two teaspoons); by around 10 days, an infant's stomach grows to approximately the size of a walnut, and can hold about two ounces; once breastfeeding is established, exclusively breastfed infants who are one to six months old take in between 19 and 30 ounces of breast milk each day; often individuals will breastfeed about eight times per day, allowing the infant to receive approximately three ounces per feeding.

Breast Pumps

Breast pumps often play an important role in breastfeeding (note: the term breast pump may refer to any device designed and used for the removal of milk from a breast). Therefore, new mothers and parents should know how to use and clean a breast pump. Specific information on breast pumps and how to clean a breast pump may be found below.

- Individuals should wash their hands with soap and water for 20 seconds before using and/or handling a breast pump.
- Individuals should inspect a breast pump before using it. If the breast pump, or related parts, has any mold growing on it, the breast pump should be appropriately discarded.
- For extra germ removal, individuals should sanitize breast pumps and breast pump parts at least once daily. Sanitizing is especially important if a child is less than three months old, was born prematurely, or has a weakened immune system due to illness or medical treatment.
- When sanitizing breast pumps and breast pump parts, individuals should clean the breast pumps and breast pump parts first.
- When sanitizing breast pumps and breast pump parts, individuals may use a microwave on manufacture recommended settings or a dishwasher on

manufacture recommended settings. Individuals may also simply boil the breast pump parts for a total of five to ten minutes.

- After sanitization is complete, individuals should allow the breast pump parts to air dry. Once the breast pump parts are clean, individuals should store the breast pump parts in a clean, protected area to prevent contamination during storage.
- When cleaning the electrical unit for powered breast pumps, individuals should remember the following points of interest: electrical units, which hold the motor and batteries, should be wiped down with a clean paper towel or soft cloth after each use; the electrical unit should never be put into water or other liquids for cleaning; it should also never be cleaned using a microwave sterilizer; some breast pump manufacturers make wipes just for cleaning breast pumps, which can make cleaning more convenient; even if the aforementioned wipes are used, breast pump parts that come into contact with breast milk should be cleaned using liquid dishwashing soap and warm water before pumping.
- Individuals should also be aware of the following points of interest regarding breast pump tubing: when used correctly, breast pump tubing should not touch the pumped milk; individuals should keep a spare set of tubing on hand in case the original set gets soiled or damaged; if the tubing has water droplets in it at the end of a pumping session, disconnect the tubing from the flange/pump kit, but leave it attached to the pump, run the pump for a few more minutes until the tubing is dry.
- Individuals should review breast pump instruction manuals for specific information regarding their breast pump.

Breast Milk Storage

Along with breast pumps, breast milk storage often plays an important role in breastfeeding, especially for those individuals providing expressed milk to infants. Therefore, new mothers and parents should know how to adequately store breast milk. Specific information on adequate breast milk storage may be found below.

- Freshly expressed breast milk may be stored at room temperature for up to four hours.

- Freshly expressed breast milk may be stored in the refrigerator for up to four days.
- Freshly expressed breast milk may be stored in the freezer for up to 12 months, although frozen breast milk is best six months after freezing.
- When storing breast milk, individuals should use breast milk storage bags or clean food-grade containers with tight fitting lids made of glass or plastic to store expressed breast milk.
- Individuals should never store breast milk in disposable bottle liners or plastic bags that are not intended for storing breast milk.
- Individuals should not store breast milk in the door of the refrigerator or freezer due to the potential for temperature changes when the refrigerator/freezer door is opened.
- If freshly expressed breast milk will not be used within four hours of removal from the breast, it should be frozen right away to help to protect the quality of the breast milk.
- Individuals should freeze breast milk in small amounts such as two to four ounces or the amount that will be offered to a child at one feeding.
- When freezing breast milk individuals should leave about an inch of space at the top of the container because the breast milk will expand as it freezes.
- When traveling, individuals may store breast milk in an insulated cooler bag with frozen ice packs for up to 24 hours.
- Individuals may thaw frozen breast milk in the refrigerator overnight. To help thaw frozen breast milk, individuals may also place the breast milk container in a container of warm water.
- Individuals should never thaw or heat breast milk in a microwave.
- Individuals should use breast milk within 24 hours of thawing in the refrigerator.
- Once breast milk is brought to room temperature after storing in the refrigerator or freezer, it should be used within two hours.
- Individuals should never refreeze breast milk once it has been thawed.

- Breast milk does not need to be warmed. It can be served to a child at room temperature or cold. However, individuals should note a child's preference to promote feeding.
- If infants prefer warm breast milk, individuals can warm breast milk by placing the container of breast milk into a separate container or a pot of warm water for a few minutes or by running warm, but not hot, tap water over the container for a few minutes.
- Individuals should not heat breast milk directly on the stove or in the microwave.
- Individuals may test the temperature of the breast milk before feeding it to an infant by putting a few drops on the wrist. The breast milk should feel warm, not hot.
- Before providing the breast milk to a child, individuals should swirl the breast milk to mix the fat, which may have separated.
- If a child does not finish his or her breast milk, the leftover breast milk may still be used within two hours after the child is finished feeding. However, after two hours, leftover breast milk should be appropriately discarded.

How to Clean, Sanitize, and Store Infant Feeding Items

New mothers and parents should understand how to adequately clean, sanitize, and store infant feeding items to help prevent the transmission of infectious agents to newborn children (note: the term infectious agent may refer to an organism that is capable of producing an infection or infectious disease; infectious agents include: bacteria, fungi, viruses, and parasites). Therefore, new mothers and parents should receive education on how to clean, sanitize, and store infant feeding items. Specific information on how to adequately clean, sanitize, and store infant feeding items may be found below. The information found below was derived from materials provided by the CDC (CDC, 2020).

- The most common infant feeding items include bottles and the nipples, rings, caps, valves, and membranes that attach to bottles; additional infant feeding items may include: syringes, cups, spoons, and supplemental nursing systems (note: the term supplemental nursing system may refer to a feeding device that delivers supplemental milk at the breast via tubing).

- When cleaning infant feeding items by hand, individuals should adhere to the following steps: wash the hands with soap and water for 20 seconds; separate all bottle parts (e.g., bottles, nipples, caps, rings, valves); rinse bottle parts and any other feeding items by holding them under running water (note: do not set feeding items in the sink to prevent contamination from infectious agents); place all items in a clean basin or container used only to clean infant feeding items; fill wash basin with hot water and add soap; scrub items using a clean brush that is only used to clean infant feeding items; squeeze water through nipple holes to be sure they get clean; rinse by holding items under running water, or by holding completely under fresh water, in a separate basin that is used only for cleaning infant feeding items; place bottle parts, wash basin, and bottle brush on a clean, unused dish towel or paper towel in an area protected from dirt and dust; allow all items to air dry thoroughly (note: do not use a dish towel to rub or pat items dry because doing so may transfer infectious agents to the items; rinse the wash basins and brush well and allow them to air-dry after each use; wash basins and brush every few days, either in a dishwasher with hot water and a heated drying cycle [if they are dishwasher-safe], or by hand with soap and warm water; if the newborn child is less than three months old, was born prematurely, or has a weakened immune system due to illness or medical treatment [e.g., chemotherapy for cancer], wash basin and bottle brush after every use).
- When cleaning dishwasher safe infant feeding items in a dishwasher, individuals should adhere to the following steps: separate all bottle parts (e.g., bottles, nipples, caps, rings, valves); rinse bottle parts and any other feeding items by holding them under running water; place bottle parts and other feeding items in the dishwasher (note: individuals should be sure to place small items into a closed-top basket or mesh laundry bag so they don't end up in the dishwasher filter; If possible, individuals should run the dishwasher using hot water and a heated drying cycle [or sanitizing setting] to help kill more infectious agents); wash the hands with soap and water, and then remove infant feeding items from the dishwasher; if items are not completely dry, place them on a clean, unused dish towel or paper towel to air-dry thoroughly before storing in an area free of dust or dirt (note: do not use a dish towel to rub or pat items dry because doing so may transfer infectious agents to the items); store infant feeding items in an area free of dust or dirt.
- For extra infectious agent removal, individuals should sanitize feeding items at least once daily; sanitizing is particularly important when the newborn child is

younger than three months, was born prematurely, or has a weakened immune system; daily sanitizing of feeding items may not be necessary for older, healthy babies, if those items are cleaned carefully after each use.

- When sanitizing infant feeding items by boiling items, individuals should adhere to the following steps: place disassembled feeding items into a pot and cover with water; put the pot over heat and bring to a boil; boil for five minutes; remove items with clean tongs; allow all items to air dry thoroughly (note: do not use a dish towel to rub or pat items dry because doing so may transfer infectious agents to the items).
- When sanitizing infant feeding items by steaming items, individuals should place disassembled items in a microwave or plug-in steam system and follow the manufacturer's instructions for sanitizing, cooling, and drying the items.
- When sanitizing infant feeding items by bleaching items, individuals should adhere to the following steps: prepare a bleach solution of two teaspoons of unscented bleach per gallon (16 cups) of water in a clean wash basin; submerge all items completely, checking that the solution touches all parts and there are no air bubbles in the bottles; squeeze solution through nipple holes; soak items in solution for at least two minutes; remove items with clean hands or tongs; allow all items to air dry thoroughly (note: do not rinse items; any remaining bleach will break down quickly as items dry; do not use a dish towel to rub or pat items dry because doing so may transfer infectious agents to the items).
- When storing infant feeding items, individuals should adhere to the following steps: allow the clean feeding items, bottle brushes, and wash basins to air-dry thoroughly before storing to help prevent infectious agent contamination; wash hands well with soap and water; put together the clean, dry bottle parts; place reassembled bottles and other feeding items, wash basin, and dry bottle brush in a clean, protected area such as inside a closed kitchen cabinet that is only used to store clean items.
- Health care professionals should provide the following education to new mothers and parents: cleaning uses soap and water to physically remove germs from the bottle; sanitizing is an extra step to kill more infectious agents on items that were cleaned; sanitizing feeding items provides more protection against all infections.
- • Health care professionals should provide the following education to new mothers and parents: bottles should be cleaned after every feeding.

- Health care professionals should provide the following education to new mothers and parents: air-drying infant feeding items on a clean dish towel or paper towel is potentially more hygienic than using a drying rack; drying racks may trap moisture, allow mold and other infectious agents to grow, and are difficult to clean.

Diet

Pregnant individuals and individuals who are breastfeeding their newborn children should receive education and recommendations regarding diet. Specific diet recommendations for pregnant individuals and individuals who are breastfeeding may be found below. The information found below was derived from materials provided by the U.S. Department of Health and Human Services (U.S. Department of Health and Human Services, 2020).

- From 12 months through older adulthood, individuals should follow a healthy dietary pattern across their lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease (note: the term healthy dietary pattern may refer to the combination of foods and beverages that constitutes an individual's complete dietary intake over time; a description of a customary way of eating or a description of a combination of foods recommended for consumption).

- Individuals should focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits - nutrient-dense foods provide vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits (note: the term nutrient-dense foods may refer to the foods and beverages that provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium).

- Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry, when prepared with no or little added sugars, saturated fat, and sodium, are examples of nutrient-dense foods.

- Individuals should note that the core elements that make up a healthy dietary pattern include the following: vegetables of all types; fruits, especially whole fruit; grains, at least half of which are whole grain; dairy, including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives; protein foods, including lean meats, poultry, and eggs; oils, including vegetable oils and oils in food, such as seafood and nuts.

- Less than 10 percent of calories per day should come from sugars; individuals should avoid foods and beverages with added sugars; less than 10 percent of calories per day should come from saturated fat; less than 2,300 milligrams per day should come from sodium.

- Pregnancy and lactation are special stages of life for women, and nutrition plays a vital role before, during, and after the aforementioned life stages to support the health of the mother and her child. Following a healthy dietary pattern is especially important for those who are pregnant or lactating for several reasons. Increased calorie and nutrient intakes are necessary to support the growth and development of the baby and to maintain the mother's health. Consuming a healthy dietary pattern before and during pregnancy also may help improve pregnancy outcomes. In addition, following a healthy dietary pattern before and during pregnancy and lactation has the potential to affect health outcomes for both the mother and child in subsequent.

- Pregnant and breastfeeding individuals typically require more calories to meet their nutritional needs while breastfeeding; an additional 450 to 500 kilocalories (kcal) of healthy food calories per day is recommended for well-nourished breastfeeding mothers.

- The increased calorie and nutrient needs of pregnant and breastfeeding individuals should be met by consuming nutrient-dense food choices as part of a healthy dietary pattern; pregnant and breastfeeding individuals should meet their increased calorie and nutrient needs with nutrient-dense foods instead of with foods high in added sugars, saturated fat, and sodium.

- Weight gain is a natural part of pregnancy, which is why it is important to have a plan; meeting weight management goals may improve pregnancy outcomes, such as increasing the likelihood of delivering a healthy weight infant and improving the long-term health of both mother and child; women are encouraged to

partner with health care professionals to achieve their goals and optimize health outcomes.

- Individuals following a vegetarian or vegan dietary pattern during pregnancy/ breastfeeding may need to take special care to ensure nutrient adequacy; iron may be of particular concern because plant source foods only contain non-heme iron, which is less bioavailable than heme iron; vitamin B12 also is of concern because it is present only in animal source foods; individuals following a vegetarian or vegan dietary pattern should consult with a health care professional to determine whether supplementation of iron, vitamin B12, and/or other nutrients such as choline, zinc, or iodine is necessary and if so, the appropriate levels to meet their unique needs.

- Seafood intake during pregnancy is recommended, as it is associated with favorable measures of cognitive development in young children; individuals who are pregnant or lactating should consume at least eight and up to 12 ounces of a variety of seafood per week, from choices lower in methylmercury (note: methylmercury can be harmful to the brain and nervous system if an individual is exposed to too much of it over time; this is particularly important during pregnancy because eating too much of it can have negative effects on the developing fetus).

- Caffeine passes from the mother to the infant in small amounts through breast milk, but usually does not adversely affect the infant when the mother consumes low to moderate amounts (e.g., about 300 milligrams or less per day, which is about two to three cups of coffee).

- Individuals who are planning or capable of pregnancy should take a daily supplement containing 400 to 800 mcg of folic acid; the critical period for supplementation starts at least one month before conception and continues through the first two to three months of pregnancy.

- The Dietary Guidelines for Americans recommend that lactating parents consume 290 mcg of iodine and 550 mg of choline daily throughout the first year postpartum. Iodine can be found in dairy products, eggs, seafood, or in iodized table salt. Choline can be found in dairy and protein food groups, such as eggs, meats, some seafood, beans, peas, and lentils.

- Vitamin B12 is transferred through the placenta to the fetus during pregnancy and through breast milk after birth; infants who drink breast milk from a mother

who consumes adequate amounts of vitamin B12 or infants who drink infant formula, will receive enough vitamin B12; however, if a breastfeeding mother is deficient in vitamin B12, her infant may also become deficient.

- Iron supports proper neurological development during infancy and early childhood; most newborns have sufficient iron stored in their bodies for about the first six months of life depending on gestational age, maternal iron status, and timing of umbilical cord clamping; by age six months - however, infants require an external source of iron apart from breast milk.
- Vitamin D is needed to support healthy bone development and to prevent rickets (note: rickets may refer to a condition that causes weak or deformed bones); vitamin D deficiency rickets among breastfed infants is rare, but it can occur if an infant does not receive additional vitamin D from foods, a vitamin D supplement, or adequate exposure to sunlight; to avoid developing a vitamin D deficiency, the Dietary Guidelines for Americans and American Academy of Pediatrics recommend breastfed and partially breastfed infants be supplemented with 400 IU per day of vitamin D beginning in the first few days of life.
- Vitamin K is needed to form blood clots and to stop bleeding; newborn children are born with very small amounts of vitamin K stored in their bodies, which can lead to serious bleeding problems like vitamin K deficiency bleeding (VKDB) (note: VKDB can lead to brain damage and death); breast milk is low in vitamin K; breast milk from mothers who are taking vitamin K supplements is also low in vitamin K; the American Academy of Pediatrics recommends that all newborns, whether breastfed or formula fed, should receive a one-time intramuscular shot of vitamin K1 (phytonadione) at a dose of 0.5 to 1.0 milligrams shortly after birth (this is usually given during the birth hospitalization); a vitamin K shot can be administered after the first feeding at the breast, but not later than six hours of age; an oral dose of vitamin K is not recommended; oral vitamin K is not consistently absorbed through the stomach and intestines, and it does not provide adequate amounts for the breastfed infant. Infants who receive the vitamin K shot do not require further supplementation.

Physical Activity

Along with diet, pregnant individuals and individuals who are breastfeeding their newborn children should receive education and recommendations regarding physical

activity. Specific physical activity recommendations for pregnant individuals and individuals who are breastfeeding may be found below. The information found below was derived from materials provided by the U.S. Department of Health and Human Services (U.S. Department of Health and Human Services, 2020).

- Physical activity may refer to any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level

  Physical Activity Recommendations for Adults

  - Adults should move more and sit less throughout the day. Some physical activity is better than none. Adults who sit less and do any amount of moderate-to-vigorous physical activity gain some health benefits.

  - For substantial health benefits, adults should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week.

  - Additional health benefits are gained by engaging in physical activity beyond the equivalent of 300 minutes (5 hours) of moderate-intensity physical activity a week.

  - Adults should also do muscle-strengthening activities of moderate or greater intensity and that involve all major muscle groups on two or more days a week, as these activities provide additional health benefits.

  Physical Activity Recommendations for Women During Pregnancy and the Postpartum Period

  - Women should do at least 150 minutes (2 hours and 30 minutes) of moderate-intensity aerobic activity a week during pregnancy and the postpartum period. Preferably, aerobic activity should be spread throughout the week.

  - Women who habitually engaged in vigorous-intensity aerobic activity or who were physically active before pregnancy can continue these activities during pregnancy and the postpartum period.

- Women who are pregnant should be under the care of a health care professional who can monitor the progress of the pregnancy. Women who are pregnant can consult a health care professional about whether or how to adjust their physical activity during pregnancy and after the baby is born.

Physical Activity Recommendations for Adults With Chronic Health Conditions and Adults With Disabilities

- Adults with chronic conditions or disabilities, who are able, should do at least 150 minutes (2 hours and 30 minutes) to 300 minutes (5 hours) a week of moderate-intensity, or 75 minutes (1 hour and 15 minutes) to 150 minutes (2 hours and 30 minutes) a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity aerobic activity. Preferably, aerobic activity should be spread throughout the week.
- Adults with chronic conditions or disabilities, who are able, should also do muscle-strengthening activities of moderate or greater intensity and that involve all major muscle groups on two or more days a week, as these activities provide additional health benefits.
- When adults with chronic conditions or disabilities are not able to meet the above key guidelines, they should engage in regular physical activity according to their abilities and should avoid inactivity.
- Adults with chronic conditions or symptoms should be under the care of a health care professional. Individuals with chronic conditions can consult a health care professional or physical activity specialist about the types and amounts of activity appropriate for their abilities and chronic conditions.

Physical Activity Recommendations for Safe Physical Activity

- Individuals should understand the risks, yet be confident that physical activity can be safe for almost everyone.
- Individuals should choose types of physical activity that are appropriate for their current fitness level and health goals, because some activities are safer than others.
- Individuals should increase physical activity gradually over time to meet key guidelines or health goals. Inactive people should “start low and go slow” by

starting with lower intensity activities and gradually increasing how often and how long activities are done.

- Individuals should protect themselves by using appropriate gear and sports equipment, choosing safe environments, following rules and policies, and making sensible choices about when, where, and how to be active.
- Individuals should be under the care of a health care professional if they have chronic conditions or symptoms. Individuals with chronic conditions and symptoms can consult a health care professional or physical activity specialist about the types and amounts of activity appropriate for them.

Section 2 Summary

The second element of effective breastfeeding education is to provide individuals with information on key aspects of effective breastfeeding. Key aspects of effective breastfeeding include the following: latching and how to hold a child during breastfeeding; signs an infant is receiving enough breast milk; the use of a breast pump; breast milk storage; how to clean, sanitize, and store infant feeding items; diet; physical activity. Health care professionals should note the following: effective breastfeeding occurs when an infant receives human breast milk for ingestion.

Section 2 Key Concepts

- The second element of effective breastfeeding education is to provide individuals with information on the key aspects of effective breastfeeding.
- Key aspects of effective breastfeeding include the following: latching and how to hold a child during breastfeeding; signs an infant is receiving enough breast milk; the use of a breast pump; breast milk storage; how to clean, sanitize, and store infant feeding items; diet; physical activity.

Section 2 Key Terms

Latching - the process of securing a child to a nipple/breast

Areola - the dark or pigmented areas around the nipple(s)

Breastfeeding hold - the way an individual holds a child during breastfeeding; the position of a child in relation to the individual breastfeeding

Breast pump - any device designed and used for the removal of milk from a woman's breast

Infectious agent - an organism that is capable of producing an infection or infectious disease

Supplemental nursing system - a feeding device that delivers supplemental milk at the breast via tubing

Healthy dietary pattern - the combination of foods and beverages that constitutes an individual's complete dietary intake over time; a description of a customary way of eating or a description of a combination of foods recommended for consumption

Nutrient-dense foods - foods and beverages that provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium

Rickets - a condition that causes weak or deformed bones

Physical activity - any bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above a basal level

Section 2 Personal Reflection Question

How can health care professionals integrate information regarding the key aspects of effective breastfeeding into breastfeeding education?

Section 3: Potential Obstacles Associated with Breastfeeding

For many individuals, the breastfeeding process will be enjoyable and free of obstacles. That being said, breastfeeding is not without its potential difficulties. Therefore, the third element of effective breastfeeding education is to provide individuals with education regarding the potential obstacles associated with breastfeeding and recommendations on how to overcome such obstacles. This section of the course will review information and recommendations regarding the potential obstacles associated with breastfeeding.

The information found within this section of the course was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

Contraindications to Breastfeeding

One of the first obstacles that may initially come to mind when considering the potential obstacles associated with breastfeeding is, contraindications to breastfeeding. There are rare exceptions when human milk or breastfeeding is not recommended for newborn children. Specific information regarding contraindications to breastfeeding may be found below.

- Individuals should not breastfeed or provide expressed milk for consumption to newborn children if one or more of the following criteria are met by the newborn child or mother/individual providing breast milk: the newborn child is diagnosed with classic galactosemia (note: galactosemia may refer to a genetic metabolic disorder that affects how the body processes a simple sugar called galactose); the mother is infected with the human immunodeficiency virus (HIV); the mother is infected with T-lymphotropic virus type 1 or type 2; the mother is using an illicit drug (e.g., phencyclidine or cocaine) (note: narcotic-dependent mothers who are enrolled in a supervised methadone program and have a negative screening for HIV infection and other illicit drugs may breastfeed their children); the mother has suspected or confirmed Ebola virus disease (note: Ebola virus disease may refer to a rare and deadly disease caused by an infection with a group of viruses within the genus *Ebolavirus*).

- Individuals should not temporarily breastfeed or provide expressed milk for consumption to newborn children if one or more of the following criteria are met by the mother/individual providing breast milk: the mother is infected with untreated brucellosis (note: brucellosis may refer to an infectious disease caused by bacteria); the mother is taking specific medications (e.g., amiodarone) (note: few medications are contraindicated while breastfeeding; although many medications do pass into breast milk, most have no known adverse effect on milk supply or on infant well-being; however, health care professionals should always weigh the risks and benefits when prescribing medications to breastfeeding mothers); the mother is undergoing diagnostic imaging with radiopharmaceuticals; the mother has an active herpes simplex virus (HSV) with lesions present on the breast (note: mothers can breastfeed directly from the unaffected breast if lesions on the affected breast are covered completely to

avoid transmission). Health care professionals should note the following: mothers/individuals providing breast milk may be able to resume breastfeeding after consulting with a health care professional to determine when their breast milk is safe for their infant; mothers should be provided with lactation support to learn how to maintain milk production and feed their infants with pasteurized donor human milk or formula while temporarily not breastfeeding.

- Individuals should not temporarily breastfeed, but may provide expressed milk for consumption to newborn children if the mother has untreated, active tuberculosis (note: the mother may resume breastfeeding once she has been treated appropriately for two weeks and is documented to be no longer contagious); the mother has active varicella (chicken pox) infection that developed within the five days prior to delivery to the two days following delivery. Health care professionals should note the following: airborne and contact precautions may require temporary separation of the mother and infant, during which time expressed breast milk should be given to the infant by another healthy caregiver; mothers should be able to resume breastfeeding after consulting with a physician to determine when there is no longer a risk of spreading infection; mothers should be provided with lactation support to learn how to maintain milk production while not breastfeeding and/or while expressing their milk.

Postpartum Depression

As previously mentioned, postpartum depression may refer to a form of depression associated with childbirth. Unfortunately, postpartum depression may be an obstacle to breastfeeding for some women. Specific information regarding postpartum depression and breastfeeding may be found below.

- Postpartum depression is relatively common.
- Postpartum depression may result from a combination of physical and emotional factors.
- Postpartum depression may interfere with a woman's ability to breastfeed and/or care for an infant.
- The more common symptoms associated with postpartum depression include the following: feeling sad, hopeless, empty, or overwhelmed, crying more often than

usual or for no apparent reason, worrying or feeling overly anxious, feeling moody, irritable, or restless, oversleeping, having trouble concentrating, having trouble remembering details, having trouble making decisions, experiencing anger or rage, losing interest in activities that are usually enjoyable, suffering from physical aches and pains, frequent headaches, stomach problems, muscle pain, eating too little or too much, withdrawing from or avoiding friends and family, having trouble bonding or forming an emotional attachment with an infant, thinking about self-harming, and thinking about harming an infant.

- If a new mother experiences the aforementioned symptoms for a period of two weeks or more, she should seek the care of a health care professional.
- Postpartum depression should be diagnosed by a health care professional.
- If left untreated, postpartum depression may lead to the following: additional health problems, an inability to care for an infant, and/or self-harm/infant harm.
- Treatment for postpartum depression can include one or a combination of the following treatment options: psychotherapy, cognitive behavioral therapy, and medications.
- Medications used to treat postpartum depression include selective serotonin reuptake inhibitors (SSRIs).
- Some SSRIs, or closely related medications, such as Celexa, are not contraindicated during breastfeeding.
- When providing breastfeeding support to women diagnosed with postpartum depression, health care professionals should review patients' medications; many medications do pass into breast milk, most have little or no effect on milk supply or on infant well-being; when discussing medications it is important for health care professionals to ask a mother about whether she is breastfeeding.
- Mothers with postpartum depression can typically continue to breastfeed; health care professionals should work with mothers to ensure they receive appropriate treatment, support, and medications that are safe to use while breastfeeding.
- Some mothers experience positive feelings from breastfeeding, others may not; health care professionals should work with mothers to address depression in a timely manner and to help them reach their breastfeeding goals; health care professionals should talk to mothers about treatment options for depression

including medications and non-pharmacological options (e.g., individual or group therapy) and assist mothers in accessing professional breastfeeding support as needed.

Influenza (Flu)

Influenza, otherwise referred to as the flu, may present an obstacle to breastfeeding. Specific information regarding influenza and breastfeeding may be found below.

- Influenza, otherwise referred to as flu, may refer to an acute, contagious respiratory tract illness caused by influenza viruses that infect the nose, throat, and sometimes the lungs.
- Flu can cause mild to severe illness, and at times can lead to death; pregnant women and young children are at high risk of developing flu-related complications.
- Flu is not spread to infants through breast milk. The flu is typically transmitted by person-to-person contact via respiratory droplets when people cough, sneeze, or talk, or possibly, when a person touches a surface or object that has the flu virus on it and then touches his or her own mouth or nose (note: person-to-person contact may refer to the transmission of a communicable disease/illness from a host to a healthy person by way of body fluids).
- A mother's breast milk contains antibodies and other immunological factors that can help protect her infant from flu and is the recommended source of nutrition for the infant, even while the mother is ill; if a mother is too sick to feed her infant at the breast and another healthy caregiver is caring for the infant, the breastfeeding mother should be encouraged and supported to regularly express her milk so that the infant continues to receive her breast milk; prior to expressing breast milk, mothers should wash their hands well with soap and water and, if using a breast pump, follow recommendations for proper cleaning; because a woman's breast milk supply could decrease for some mothers while they are ill, mothers may need additional lactation support from a lactation provider to address milk supply concerns, reduce the possibility of developing a breast infection, and support the breastfeeding relationship during an flu infection.

- When an infant has flu, the mother should be encouraged to continue breastfeeding or feeding expressed breast milk to her infant; infants who are ill need fluids to stay hydrated and breast milk is the best option; expressed breast milk can also be given from a cup, syringe, or bottle if the infant is unable to breastfeed directly at the breast.

- If direct breastfeeding is interrupted due to temporary separation of mother and child, the breastfeeding mother should be encouraged and supported to regularly express her milk so that the infant continues to receive her breast milk; a breastfeeding mother with flu may need access to a hospital-grade pump and additional lactation support while in the hospital and after discharge to maintain her milk supply and reduce the possibility of developing a breast infection; prior to expressing breast milk, mothers should wash their hands well with soap and water and, if using a breast pump, follow recommendations for proper cleaning; if a mother is expressing breast milk, the expressed breast milk should be fed to the infant by a healthy caregiver who does not have flu, when applicable.

- Individuals with flu should take precautions to avoid spreading flu to infants (regardless of feeding method) because infants are at high-risk of serious flu-related complications; precautions are especially important for infants younger than six months of age because they cannot be vaccinated against influenza viruses; individuals with flu should thoroughly wash and dry their hands with soap and water before touching the infant or any item that the infant will touch (including during feeding) and anytime they sneeze or cough on their hands.

- Immunization of pregnant and breastfeeding women reduces the risk of flu to themselves and to their infants; to protect infants, especially those younger than six months of age who cannot be vaccinated, parents, siblings, other household members aged six months and older, and other caregivers should also receive an annual flu vaccination.

- Flu vaccination is safe for breastfeeding women and their infants aged six months and older; women who get the flu vaccine while pregnant or breastfeeding develop antibodies against flu that they can share with their infants through their breast milk; breastfeeding can provide some protection against flu for infants, including children younger than six months who cannot receive the flu vaccine; annual flu vaccination is recommended for all persons aged six months and older, and is particularly important for pregnant women; additionally, to protect

children younger than six months of age from flu, persons around the infant (e.g., caregivers and household members) should receive the flu vaccination.

- Preventative actions such as avoiding close contact with sick persons, covering one's nose and mouth with a tissue when sneezing or coughing and throwing the tissue away immediately afterwards, washing the hands, and disinfecting surfaces can also help protect all infants from flu, whether they are breastfed or not.
- While data on the effect of currently recommended influenza antiviral medications during breastfeeding are limited, the CDC recommends that postpartum (e.g., within two weeks after birth) women with suspected or confirmed flu should be treated with antiviral medications since they are at high risk of flu complications; for women who are breastfeeding with suspected or confirmed flu, treatment with oral oseltamivir is currently preferred.

Methicillin-resistant *Staphylococcus aureus* (MRSA) Infection

A methicillin-resistant *Staphylococcus aureus* (MRSA) infection may present an obstacle to breastfeeding. Specific information regarding MRSA and breastfeeding may be found below.

- *Staphylococcus aureus* (staph) may refer to a type of bacteria found on individuals' skin; staph bacteria can be carried by individuals and not cause any symptoms, but can also cause serious infections that can lead to sepsis or death.
- Methicillin-resistant Staphylococcus aureus (MRSA) may refer to a type of staph bacteria that is resistant to several antibiotics.
- Staph and MRSA can be associated with mastitis (a breast infection) and breast abscesses in breastfeeding mothers, and require prompt medical attention; typically, mothers with a staph or MRSA infection can continue to breastfeed their infant.
- Continued breastfeeding is appropriate and recommended for most healthy infants; breastfeeding promotes drainage and helps to resolve the infection, if it involves the breast; Staph bacteria, including MRSA, are not transmissible via human milk; however, these bacteria can be transferred through direct contact with infected tissue, such as an open lesion on the breast, or through expressed milk that has come in contact with infected tissue; breastfeeding can continue on

the affected breast (even if a drain is present in the case of an abscess) as long as the infant's mouth does not come in contact with purulent drainage or open infected tissue; all open infectious tissue should be completely covered with clean, dry bandages while breastfeeding or expressing milk; continued breastfeeding is also recommended for most healthy infants when their mother is colonized, but does not have a MRSA infection.

- If it is not possible to avoid contact with infectious tissue while breastfeeding or expressing milk, the mother can express milk from the affected breast and discard it until she is no longer infectious on that side (undergone 24 - 48 hours of antibiotic therapy); expressing milk is important for maintaining milk production while not directly breastfeeding from the affected breast.

- There are several medications used to treat MRSA that are compatible with breastfeeding; if the mother requires abscess drainage, outpatient treatment using needle or catheter aspiration will allow the infant to remain with the mother and continue breastfeeding; breastfeeding promotes abscess drainage and helps resolve the infection; if a drain needs to be left in the abscess to allow for healing, the infant can continue to breastfeed or receive expressed milk from that breast as long as the infant's mouth or the pump's flange does not come in contact with the insertion of the drain.

- Infants in a newborn intensive care unit (NICU), or who are premature or small-for-gestational-age, are more susceptible to morbidity and mortality due to MRSA; infants in a NICU are at higher risk, so a facility might recommend special precautions, like using gowns and gloves when caring for infants whose mothers are carrying or are infected with MRSA, or placing mother and infant in their own room; if a MRSA infection is in the breast (e.g., mastitis) it might be prudent to minimize the infant's exposure to infected tissue or contaminated milk; one strategy is to culture breast milk expressed by a mother with a MRSA infection to confirm the breast milk does not contain staph bacteria before feeding it to the infant; alternatively, expressed milk could be discarded and if appropriate, pasteurized donor human milk could be provided to the infant until the mother's milk is culture-negative for MRSA or until the signs of active infection have resolved; it is important for the mother to receive lactation support and continue to express her milk to maintain her milk supply during the time she receives treatment.

Hepatitis B or Hepatitis C Infections

Hepatitis B or hepatitis C infections may present an obstacle to breastfeeding. Specific information regarding hepatitis B, hepatitis C, and breastfeeding may be found below.

- Hepatitis B may refer to a liver infection caused by the hepatitis B virus (HBV), which is transmitted by blood, semen, or other body fluid from an infected person; a woman with hepatitis B can infect her infant with the virus during childbirth; all pregnant women should be given a blood test for hepatitis B as part of their prenatal care or when they arrive at the hospital to give birth; the CDC recommends that newborn children get the first dose of the hepatitis B vaccine before leaving the hospital or within the first 24 hours; newborn children are typically given the second dose of the vaccine one to two months after the first dose, and the third dose by the time they are 18 months old.

- All infants born to HBV-infected mothers should receive hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine within 12 hours of birth; the second dose of vaccine should be given at age one to two months, and the third dose at age six months. The infant should be tested after completion of the vaccine series, at age nine and 12 months (generally at the next well-child visit), to determine if the vaccine worked and that the infant is not infected with HBV through exposure to the mother's blood during the birth process; however, there is no need to delay breastfeeding until the infant is fully immunized; the risk of HBV mother-to-child transmission through breastfeeding is negligible if infants born to HBV-positive mothers receive the HBIG/HBV vaccine at birth.

- If a HBV-positive mother's nipples and/or surrounding areola are cracked and bleeding, she should stop nursing temporarily; to maintain her milk supply while not breastfeeding, she should express and discard her breast milk until her nipples are healed; once the nipples are no longer cracked or bleeding, the HBV-positive mother may fully resume breastfeeding; health care professionals may need to refer mothers for lactation support to learn how to maintain milk production and how to supplement with pasteurized donor human milk or formula while temporarily not breastfeeding.

- Hepatitis C may refer to a liver infection caused by the hepatitis C virus (HCV), which is transmitted by blood from an infected individual; there is not a vaccine available for hepatitis C; the best way to prevent hepatitis C is by avoiding behaviors that can spread the disease, especially injecting drugs.

- According to the CDC, there is no documented evidence that breastfeeding spreads HCV; therefore, having HCV-infection is not a contraindication to breastfeed.
- HCV is spread by infected blood; therefore, if the HCV-positive mother's nipples and/or surrounding areola are cracked and bleeding, she should stop nursing temporarily; to maintain her milk supply while not breastfeeding, she can express and discard her breast milk until her nipples are healed; once the nipples are no longer cracked or bleeding, the HCV-positive mother may fully resume breastfeeding; health care professionals may need to refer mothers for lactation support to learn how to maintain milk production and how to supplement with donor human milk or formula while temporarily not breastfeeding.

Shingles

Shingles may present an obstacle to breastfeeding. Specific information regarding shingles and breastfeeding may be found below.

- Shingles, also known as herpes zoster or zoster, is caused by the varicella zoster virus, the same virus that causes chickenpox (varicella); after an individual recovers from chickenpox, the virus stays dormant (inactive) in the body and can reactivate years later, causing shingles; anyone who recovered from chickenpox may develop shingles, but the risk of shingles increases as individuals get older.
- Shingles cannot be passed from one person to another and cannot be spread to an infant through breast milk; however, the varicella zoster virus can spread from a person who has active shingles and cause chickenpox in someone who has never had chickenpox or received the chickenpox vaccine; the virus is spread through direct contact with fluid from the rash blisters caused by shingles.
- If a mother has an active shingles infection, she can continue to breastfeed if she does not have skin lesions on her breast; if a lesion develops on or near the areola, where the infant's mouth would touch the lesion while nursing, then the mother needs to express her milk on that side to maintain her milk supply and prevent mastitis; the mother can discard the milk until the infant can resume nursing directly at that breast; the mother may need access to a hospital-grade pump and additional lactation support to maintain her milk supply and reduce the possibility of developing a breast infection.

- Before expressing breast milk, mothers should wash their hands well with soap and water; breastfeeding can continue on the unaffected breast during this time; all lesions should be covered with clean, dry bandages until they are healed to avoid direct contact with an infant; mothers must engage in hand washing until all lesions are fully crusted over.
- Women can take antiviral medications to treat shingles while breastfeeding.

Breast Surgery

Breast surgery or a history of breast surgery may present an obstacle to breastfeeding. Specific information regarding breast surgery and breastfeeding may be found below.

- Most individuals who had breast surgery are able to produce some milk; some surgeries impact milk production more than others**.**
- Most individuals who had breast or nipple surgery are able to produce some milk, but not all of these mothers will be able to produce a full milk supply for their infants; having a full milk supply is not necessary for a successful breastfeeding experience because it is possible to supplement in a way that supports breastfeeding.
- Breast augmentation, lift, and reduction procedures have the potential to affect the nerves and ducts within the breast, thus impacting lactation; breast implants below the muscle usually affect milk production less than implants above the muscle; incisions around the areola and surgical techniques that include completely detaching the areolae and nipples are more likely to cause reductions in milk production; over time, ducts that were severed during surgery may grow back together or form new pathways, and nerves may regain functionality, enabling the mother to produce milk; a scar around the whole areola following breast reduction does not indicate complete detachment because it may have remained connected to tissue containing nerves, ducts, and blood supply; the amount of milk made will depend on the number of connected ducts and functionality of the nerves that enable lactation, as well as other factors apart from the surgery, such as hormones and milk removal; newborn children of mothers who had breast surgery should be carefully monitored for adequate weight gain; mothers may need support to increase milk production and/or to supplement with pasteurized donor human milk or formula.

- Women who were treated for breast cancer with partial or total mastectomy may have reduced capability to breastfeed or produce breast milk; partial or total mastectomy can result in removal of breast tissue and damage to essential nerves involved in lactation; women with total mastectomy of one breast should plan for unilateral breastfeeding; women with partial mastectomy and radiation therapy should expect significantly reduced milk production on the affected side(s); a single breast can produce enough breast milk for healthy infant growth; however, dyads should be followed closely for adequate infant weight gain.
- Women may have varied experiences with breastfeeding after breast cancer treatment and may encounter a range of social and psychological challenges; health care professionals may need to address psychosocial challenges when supporting the infant feeding decisions of women who had breast cancer.
- Mothers who had underdeveloped (hypoplastic) breasts prior to breast surgery may not be able to produce enough milk (primary lactation failure) and will need lactation support to learn how to stimulate production and/or how to supplement with pasteurized donor human milk or formula.
- Health care professionals should talk with mothers who had breast surgery about the type of surgery, placement of incisions, and underlying reasons for the surgery to understand the potential for reduced milk production; health care professionals should examine mothers' breasts to identify possible insufficient glandular tissue and provide anticipatory guidance for breastfeeding support, when appropriate.
- Health care professionals should closely monitor infants of mothers who had breast surgery to be sure that the infant receives optimal nutrition for growth; when mothers present with insufficient milk production postpartum, health care professionals should inquire about prior breast surgery as part of the assessment; health care professionals should refer some individuals to an International Board Certified Lactation Consultant (IBCLC) to educate mothers who had breast surgery on how to stimulate production and/or how to supplement with pasteurized donor human milk or formula; health care professionals should ensure that mothers who had breast surgery and encounter breastfeeding challenges receive appropriate emotional support, when applicable.

Alcohol and Marijuana Use

Alcohol and marijuana use may prove to be an obstacle to breastfeeding for some women. Specific information regarding alcohol, marijuana use, and breastfeeding may be found below.

- Not drinking alcohol is the safest option for breastfeeding mothers; generally, moderate alcohol consumption by a breastfeeding mother (e.g., up to one standard drink per day) is not known to be harmful to the infant, especially if the mother waits at least two hours after a single drink before nursing; however, exposure to alcohol above moderate levels through breast milk could be damaging to an infant's development, growth, and sleep patterns; alcohol consumption above moderate levels may also impair a mother's judgment and ability to safely care for her child (note: the term standard drink, in the context of alcohol consumption, may refer to 12 ounces of 5% beer; 8 ounces of 7% malt liquor; 5 ounces of 12% wine; or 1.5 ounces of 40% [80 proof] liquor).

- Drinking alcoholic beverages is not an indication to stop breastfeeding; however, consuming more than one drink per day is not recommended.

- Alcohol levels are usually highest in breast milk 30 - 60 minutes after an alcoholic beverage is consumed, and can be generally detected in breast milk for about two to three hours per drink after it is consumed; however, the length of time alcohol can be detected in breast milk will increase the more alcohol a mother consumes; for example, alcohol from one drink can be detected in breast milk for about two to three hours, alcohol from two drinks can be detected for about four to five hours, and alcohol from three drinks can be detected for about six to eight hours, and so on; however, blood alcohol levels and the length of time alcohol can be detected in breast milk after drinking will depend on a number of factors, including the amount of alcohol consumed, how fast the alcohol is consumed, whether it is consumed with food, how much a mother weighs, and how fast alcohol is broken down in a mother's body.

- Moderate alcohol consumption by a breastfeeding mother (e.g., up to one standard drink per day) is not known to be harmful to the infant, especially if the mother waits at least two hours before nursing; however, higher levels of alcohol consumption can interfere with the milk ejection reflex (letdown) while maternal alcohol levels are high; over time, excessive alcohol consumption could lead to shortened breastfeeding duration due to decreased milk production; excessive

alcohol consumption while breastfeeding could also affect the infant's sleep patterns and early development.

- The alcohol level in breast milk is essentially the same as the alcohol level in a mother's bloodstream; expressing or pumping milk after drinking alcohol, and then discarding it, does not reduce the amount of alcohol present in the mother's milk more quickly; as the mother's alcohol blood level falls over time, the level of alcohol in her breast milk will also decrease; a mother may choose to express or pump milk after consuming alcohol to ease her physical discomfort or adhere to her milk expression schedule; if a mother decides to express or pump milk within two hours (per drink) of consuming alcohol, the mother may choose to discard the expressed milk; if a mother has consumed more than a moderate amount of alcohol, she may choose to wait two hours (per drink) to breastfeed her child, or feed her infant with milk that was previously expressed when she was not drinking, to reduce her infant's exposure to alcohol; breast milk continues to contain alcohol as long as alcohol is still in the mother's bloodstream.

- Chemicals from marijuana in any form (e.g., edibles, oils, or other concentrates) can be passed from a mother to her infant through breast milk; marijuana-related chemicals have the potential to affect a variety of neurodevelopmental processes in the infant; tetrahydrocannabinol (THC), the main active component of marijuana, is stored in body fat and slowly released over time, meaning an infant could be exposed to an unknown amount and for an extended period of time; in addition, some marijuana-related products, including cannabidiol (CBD) products, may contain other contaminants (e.g., pesticides, heavy metals, bacteria, and fungus) that could be dangerous to a mother and her infant.

- The CDC presents data that suggests the effects of marijuana and CBD exposure to an infant through breastfeeding are limited and conflicting; to limit potential risk to the infant, breastfeeding mothers should be advised not to use marijuana or marijuana-containing products in any form, including those containing CBD, while breastfeeding.

- If a mother continues to use marijuana or CBD while breastfeeding, she should be encouraged to significantly reduce her intake; to minimize secondhand smoke exposure, marijuana products should not be smoked around babies or children; marijuana use may also impair a mother or other caregiver's judgment and ability to care for an infant.

- When advising mothers on the medicinal use of marijuana while breastfeeding, consideration should be given to the potential risks of marijuana exposure and benefits of breastfeeding to the infant and mother.

Insufficient Breast Milk Supply

For some mothers, breast milk supply may be an obstacle to breastfeeding. Specific information and recommendations regarding insufficient breast milk supply may be found below.

- At times during the process of breastfeeding, it is normal for the breasts to no longer feel full; the feeling of breasts no longer feeling full is a woman's natural physical reaction to the adjustments required to breastfeed.
- Growth spurts can cause an infant to want more breast milk. Growth spurts can happen when an infant is around two to three weeks, six weeks, and three months of age. Mothers should be aware of growth supports and should allow their infants additional milk. During periods where infants require additional milk, mothers should not be overly concerned about their supply of breast milk. An increase in feeding is natural for most infants.
- Mothers should let the infant decide when to end a breastfeeding session. As previously mentioned, it is natural for infants to want additional breast milk at times.
- Mothers should remember the more often the breasts are emptied, the more milk they will produce.
- Mothers can offer both breasts at breastfeeding sessions to encourage emptying and, ultimately, the production of more breast milk.

Oversupply of Breast Milk and Strong Let-Down Reflex

An oversupply of breast milk and a strong let-down reflex may also present obstacles to breastfeeding. Specific information and recommendations regarding an oversupply of breast milk and a strong let-down reflex may be found below.

- Breasts that feel "over-full" or "too full" with breast milk is a concern for some women, because it may lead to an uncomfortable feeling. If women experience a

feeling that their breasts are over-full with milk they should be sure to offer the breast that feels over-full to infants when breastfeeding to encourage emptying.

- If a breast feels too full and/or uncomfortable, a woman may remove the breast milk by hand or by breast pump.
- Women may burp their infant during breastfeeding to encourage breast milk consumption and the emptying of breast milk from the breast.
- Along with producing too much milk, some women may be concerned that they may have a strong let-down reflex. Some women may have a strong let-down reflex, which may cause milk to rush out of the breast. A strong let-down reflex may be associated with an overproduction of breast milk.
- Women can overcome a strong let-down reflex by holding their nipples with their fingers when breastfeeding to compress the milk ducts and reduce the flow of milk.
- Women should note that if an infant chokes while breastfeeding due to an increased flow of milk, they should gently break the latch.
- Women should also note that they should allow infants to latch on and off the breast at their discretion.

Breast Enlargement/breast engorgement

It is natural for women's breasts to become larger, heavier, and slightly tender when they begin producing milk. However, some women's breasts can become so large that they experience pain, tenderness, warmth, and/or redness. When breasts reach the point where they cause pain, tenderness, warmth, and/or redness they are said to be engorged. Breast engorgement is a result of breast milk build up, and should be avoided when possible due to potential obstacles to breastfeeding. Specific information and recommendations regarding breast engorgement may be found below.

- In addition to pain, tenderness, warmth, and/or redness, breast engorgement may lead to a low-grade fever.
- Breast engorgement typically occurs between three to five days after an individual gives birth (note: breast engorgement may occur at any time during

breastfeeding, especially when breast milk is not regularly removed from the breast).

- Women can prevent breast engorgement by breastfeeding often after giving birth.
- Women can overcome breast engorgement by removing breast milk by hand or with a breast pump.
- Women can overcome the pain associated with engorgement by massaging the breasts.

Plugged Duct

A plugged duct, otherwise referred to as a plugged milk duct, can be common when breastfeeding. When a milk duct is plugged it typically feels like a hard, tender swelling in the breast(s). Women can overcome plugged ducts by following the recommendations found below.

- Women should breastfeed on the affected side every two hours, which will help loosen the plug and keep breast milk flowing.
- Women should massage the area, starting behind the sore spot by moving their fingers in a circular motion toward the nipple.
- Women may use a warm compress on the sore spot.
- Women should try to relax and get as much sleep as possible. Relaxation and sleep can help release tension, which in turn may help heal the plugged duct.

Sore Nipples

One of the more common obstacles women may face while breastfeeding is sore nipples. Sore nipples can often prevent women from breastfeeding infants. Thus, health care professionals should provide women with methods or strategies to overcome or prevent sore nipples. Specific recommendations regarding sore nipples may be found below.

- Women should ensure they achieve an effective/successful latch when breastfeeding.

- Women should change positions or breastfeeding holds each time they breastfeed.
- After breastfeeding, women should express a few drops of milk and gently rub it over the nipples with clean hands; human breast milk has natural healing properties and oils that often soothe tender areas.
- Women should allow the nipples and breast(s) to air-dry after breastfeeding.
- Women should avoid harsh soaps and/or ointments.

Infant Birth Defects

Infant birth defects may present an obstacle to breastfeeding. Specific information regarding birth defects and breastfeeding may be found below.

- Infants born with birth defects can have a range of physical and developmental abnormalities, from very mild to more severe; breast milk is an important nutrition for infants with birth defects; for most infants with birth defects, breast milk is still the optimal source of nutrition; breast milk may be especially beneficial for infants with certain birth defects who are often at higher risk for developmental delays and respiratory and other infections; breastfeeding can also help to strengthen jaw and facial muscles, which could benefit babies with low muscle tone; however, due to some infants' physical and developmental differences, mothers may face some challenges in establishing and maintaining breastfeeding; health care professionals should work to ensure that mothers of infants with birth defects have adequate support to maximize their ability to provide them with breast milk.
- Several of the most common birth defects, including Down syndrome, cleft lip and/or palate, and congenital heart disease, can affect an infant's ability to breastfeed due to the associated physical and developmental features; infants with Down syndrome (Trisomy 21) can have hypotonia (low muscle tone) which can lead to abnormal or weakened control of the oropharyngeal structures, contributing to an uncoordinated and/or weak suck, or difficulty swallowing, similar to those experienced by premature infants; in infants born with a cleft lip and/or a cleft palate, the oral cavity may not be adequately separated from the nasal cavity during feeding, which can make it difficult to create the suction needed to breastfeed successfully; this may result in the infant getting tired easily

while breastfeeding or requiring a longer time to feed, which can affect growth and nutrition status; some infants born with a congenital heart defect or disease may not be able to feed at the breast right after birth due to complications, such as hypoxia (low levels of oxygen in the blood).

- With adequate support, depending on the type and severity of the birth defect, some infants will be able to feed at the breast, while others may need to receive breast milk from a bottle or other feeding device, such as a supplemental nursing system, cup, or syringe; mothers of infants with some birth defects will likely need extra support in establishing and maintaining breastfeeding; these infants will also need to be closely monitored to be sure they are receiving enough calories to gain enough weight (note: a supplemental nursing system may refer to a feeding device delivering supplemental milk at the breast via tubing).

Infant Jaundice

Infant jaundice may present an obstacle to breastfeeding. Specific information regarding jaundice may be found below.

- Jaundice may refer to a condition characterized by yellowish skin and/or yellowish whites of the eyes caused by the buildup of bilirubin in the blood. Bilirubin may refer to a product produced from the normal breakdown of red blood cells.

- Jaundice is common during the first weeks of life, especially among preterm newborns for the following reasons: newborns have a higher rate of bilirubin production due to the shorter lifespan of red blood cells and higher red blood cell concentration compared to adults; newborns have immature liver function, leading to slower metabolism of bilirubin; newborns may have a delay in passage of meconium, leading to increased reabsorption of bilirubin in the intestines.

- Most newborns with jaundice can continue breastfeeding; more frequent breastfeeding can improve the mother's milk supply and, in turn, improve caloric intake and hydration of the infant, thus reducing the elevated bilirubin; in rare cases, some infants may benefit from a time-limited, temporary interruption (e.g., 12 - 48 hours) of breastfeeding with replacement feeding to help aid in the diagnosis of breast milk jaundice; ongoing clinical assessment, including repeat bilirubin levels, will help determine when breastfeeding can resume.

- Suboptimal intake jaundice, also called breastfeeding jaundice, most often occurs in the first week of life when breastfeeding is being established; newborn children may not receive optimal milk intake, which leads to elevated bilirubin levels due to increased reabsorption of bilirubin in the intestines; inadequate milk intake also delays the passage of meconium, which contains large amounts of bilirubin that is then transferred into the infant's circulation; in most cases breastfeeding can, and should, continue; more feedings can reduce the risk of jaundice.

Infant Gastroesophageal Reflux Disease (GERD)

Some infants may develop GERD, which, subsequently, may present an obstacle to breastfeeding. Specific information regarding infant GERD may be found below.

- GERD may refer to a disease that occurs when stomach acid or bile flows up into the tube connecting the mouth and the stomach and irritates the lining.
- Signs/symptoms of infant GERD include the following: spitting up, projectile vomit, inconsolable crying, obvious discomfort, refusing to eat, waking during the night, and problems swallowing.
- It is important for a woman to continue breastfeeding even if an infant exhibits signs/symptoms of GERD.
- Severe infant GERD cases may require health care intervention.

Infant Colic

Finally, infant colic may present an obstacle to breastfeeding. Specific information regarding infant colic may be found below.

- The term colic may refer to periods of frequent and/or prolonged distress from an otherwise healthy infant.
- Typically, when infant colic occurs, the infant may inconsolably cry and/or fuss.
- Infant colic usually starts between two and four weeks after birth.
- Infant colic will likely improve or disappear by three to four months after birth.
- Infant colic may be caused by a breastfeeding woman's diet.

- Dietary changes (e.g., limiting caffeine) can help alleviate colic.
- Infant colic may be a sign of an underlying issue with an infant.
- If infant colic continues beyond four months after birth, individuals should seek health care.

Section 3 Summary

The third element of effective breastfeeding education is to provide individuals with education regarding the potential obstacles associated with breastfeeding and recommendations on how to overcome such obstacles. Potential obstacles associated with breastfeeding include the following: contraindications to breastfeeding, postpartum depression, influenza, a MRSA infection, hepatitis B or hepatitis C infections, shingles, breast surgery, insufficient breast milk supply, an oversupply of breast milk and a strong let-down reflex, breast enlargement/breast engorgement, a plugged duct, sore nipples, infant birth defects, infant jaundice, infant GERD, and infant colic. Health care professionals should provide individuals with information and recommendations on the potential obstacles of breastfeeding to promote effective breastfeeding.

Section 3 Key Concepts

- The third element of effective breastfeeding education is to provide individuals with education regarding the potential obstacles associated with breastfeeding and recommendations on how to overcome such obstacles.
- Potential obstacles associated with breastfeeding include the following: contraindications to breastfeeding, postpartum depression, influenza, a MRSA infection, hepatitis B or hepatitis C infections, shingles, breast surgery, insufficient breast milk supply, an oversupply of breast milk and a strong let-down reflex, breast enlargement/breast engorgement, a plugged duct, sore nipples, infant birth defects, infant jaundice, infant GERD, and infant colic.

Section 3 Key Terms

Galactosemia - a genetic metabolic disorder that affects how the body processes a simple sugar called galactose

Ebola virus disease - a rare and deadly disease caused by an infection with a group of viruses within the genus *Ebolavirus*

Brucellosis - an infectious disease caused by bacteria

Influenza (otherwise referred to as flu) - an acute, contagious respiratory tract illness caused by influenza viruses that infect the nose, throat, and sometimes the lungs

Person-to-person contact - the transmission of a communicable disease/illness from a host to a healthy person by way of body fluids

Staphylococcus aureus (staph) - a type of bacteria found on individuals' skin

Methicillin-resistant Staphylococcus aureus (MRSA) - a type of staph bacteria that is resistant to several antibiotics

Hepatitis B - a liver infection caused by the hepatitis B virus (HBV), which is transmitted by blood, semen, or other body fluid from an infected person

Hepatitis C - a liver infection caused by the hepatitis C virus (HCV), which is transmitted by blood from an infected individual

Standard drink (within the context of alcohol consumption) - 12 ounces of 5% beer; 8 ounces of 7% malt liquor; 5 ounces of 12% wine; or 1.5 ounces of 40% (80 proof) liquor

Tetrahydrocannabinol (THC) - the main active component of marijuana

Let-down reflex - the process that allows milk to be released into and through the milk ducts

Jaundice - a condition characterized by yellowish skin and/or yellowish whites of the eyes caused by the buildup of bilirubin in the blood

Bilirubin - a product produced from the normal breakdown of red blood cells

Gastroesophageal reflux disease (GERD) - a disease that occurs when stomach acid or bile flows up into the tube connecting the mouth and the stomach and irritates the lining

Colic - periods of frequent and/or prolonged distress from an otherwise healthy infant

Section 3 Personal Reflection Question

How can health care professionals integrate information and recommendations regarding the potential obstacles associated with breastfeeding into breastfeeding education?

Section 4: Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19

Due to the ever evolving threat of coronavirus disease 2019 (COVID-19), health care professionals should work to prevent the transmission of COVID-19 when providing breastfeeding education and care to patients, especially those engaging in breastfeeding (note: coronavirus disease 2019 [COVID-19] may refer to a respiratory illness that can spread from person to person that is caused by a virus known as the severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]). To help prevent the transmission of COVID-19 to breastfeeding individuals the CDC developed the Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19. Subsequently, the fourth element of effective breastfeeding education is to follow the recommendations included in the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19 to help prevent the transmission of COVID-19. This section of the course highlights recommendations included in the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19. The information found within this section of the course was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

- Individuals without suspected or confirmed COVID-19 and who have not been in close contact with someone who has COVID-19, or who have been fully vaccinated for COVID-19 do not need to take special precautions when feeding at the breast or expressing milk (note: the term close contact may refer to being within six feet of any other person for a cumulative total of 15 minutes or more over a 24-hour period during that person’s potential period of COVID-19 transmission).
- Children being breastfed by someone with suspected or confirmed COVID-19 should be considered as a close contact of a person with COVID-19, and should be quarantined for the duration of the lactating parent’s recommended period of isolation and during their own quarantine thereafter.

- Breastfeeding individuals should adhere to the following precautions during their recommended period of isolation: wash the hands using soap and water before touching a child or expressing breast milk either by hand expression or with a breast pump; if soap and water are not available, use a hand sanitizer with at least 60% alcohol; wear a mask when less than six feet from a child (including when feeding at the breast or feeding from a bottle) and when expressing breast milk; clean and sanitize breast pumps and all infant feeding items.
- Any healthy caregiver, preferably one who is fully vaccinated against COVID-19 and not at increased risk for severe illness from COVID-19, may feed expressed breast milk to a child; if an individual is not vaccinated and is living in the same house or has been in contact with the breastfeeding individual, he or she should wear a mask while feeding the child for the duration of the lactating parent's recommended period of isolation and during their own quarantine thereafter.
- Some individuals with suspected or confirmed COVID-19 may desire to breastfeed their child, but they may be unable to or choose not to during their COVID-19 illness; one reason may be that they are unable to access appropriate support; health care professionals may refer such patients to professional lactation support as needed.
- Breastfeeding individuals should be counseled to inform their child's health care professional that their child was in close contact with an individual suspected or confirmed to have COVID-19 prior to any in-person health care visits or if the child develops symptoms of COVID-19.
- During the COVID-19 pandemic, health care professionals should consider providing additional information on isolation and quarantine when counseling individuals with specific living situations, such as those living in close quarters or living in shared housing.
- The CDC recommends that everyone five years of age and older get vaccinated against COVID-19; in addition, everyone who is eligible, including those who are pregnant, breastfeeding, trying to get pregnant, or might become pregnant in the future, should get a COVID-19 vaccine booster shot.
- Due to the danger of suffocation, masks should not be put on children younger than two years.

- Recently pregnant individuals (for at least 42 days following end of pregnancy) are at increased risk for severe COVID-19 illness; health care professionals may counsel the breastfeeding individual on the risks and the benefits of continuing to feed at the breast during a child's COVID-19 illness.
- Health care professionals are encouraged to prioritize newborn care and recommend infant and childhood vaccinations; during health care assessments, health care professionals should evaluate infant feeding and weight gain (particularly given potential breastfeeding disruptions due to COVID-19 illness), assess for dehydration and jaundice, assess caregiver stressors and coping, and provide appropriate supports.
- Prior to any in-person health care visits, parents and caregivers should be counseled to inform their child's health care professional if either they or their child were in close contact with an individual suspected or confirmed to have COVID-19 or develops symptoms of COVID-19; the same approach should be taken with respect to a child who has any other ongoing, close contact with another individual who has suspected or confirmed COVID-19.
- Health care professionals should consider how to minimize exposure to COVID-19 for patients, caregivers, and staff in the context of their local COVID-19 epidemiology and practice environment.
- Lack of access to professional lactation support (e.g., lactation consultants, pediatric, or obstetric health care professionals) is a barrier to breastfeeding; during the COVID-19 pandemic, it is critical to ensure that people who are breastfeeding or who desire to breastfeed continue to have access to the aforementioned support; breastfeeding problems are often urgent and require immediate assistance; breastfeeding consults typically require very close contact between the lactation specialist and the lactating caregiver/child dyad; therefore, effective hand hygiene and the use of appropriate personal protective equipment (PPE) is essential. Specific information regarding effective hand hygiene and PPE may be found below. The information found below was derived from materials provided by the CDC (CDC, 2018).
    - Hand hygiene may refer to the process of cleaning the hands in order to prevent contamination and/or the spread of infectious agents (e.g., viruses).

- Effective hand hygiene occurs when dirt, soil, microorganisms, and other contaminants are removed from the hands.
- Effective hand hygiene may include hand washing with soap and water, and hand sanitizing with an alcohol-based handrub.
- Health care professionals may use a variety of different products to carry out effective hand hygiene. The following products are typically available to health care professionals and may be used to carry out effective hand hygiene: detergents, plain soap, antimicrobial (medicated) soap, antiseptic agents, and alcohol-based handrubs.
- Hand hygiene should be performed at the following key moments: when hands are visibly soiled; after barehanded touching of instruments, equipment, materials, and other objects likely to be contaminated by blood, saliva, or respiratory secretions; before and after treating each patient; before donning PPE; immediately after removing all PEE.
- Health care professionals should wash their hands with soap and water when they are visibly dirty or visibly soiled with blood or other body fluids or after using the toilet.
- Health care professionals should use an alcohol-based handrub when their hands are not visibly soiled to reduce bacterial counts.
- Personal protective equipment (PPE) may refer to equipment designed to protect, shield, and minimize exposure to hazards that may cause injury, illness, and/or disease.
- Effectively donning PPE can prevent the spread of infectious materials and agents to patients/health care professionals.
- PPE can include a variety of different types of equipment such as: masks, respirators, gowns, and gloves.
- Health care professionals should don medical procedure masks, otherwise referred to as surgical masks or disposable face masks, when deemed necessary or required (note: a medical procedure mask may refer to a single-use mask that is not made of cloth and is not designed to be washed or laundered).

- To effectively don a medical procedure mask, health care professionals should engage in hand hygiene before touching a mask; health care professionals should ensure the mask completely covers his or her mouth and nose. A health care professional should also ensure a mask fits snugly to the face and below the chin. Health care professionals should note that, often, masks can be secured to the head and neck via separate ties.
- To effectively remove a medical procedure mask, health care professionals should untie the bottom ties, if applicable, followed by the upper ties. The mask should then be pulled off and discarded in the appropriate waste container. A health care professional should not touch a contaminated mask. Health care professionals should wash their hands or use an alcohol-based hand sanitizer after removing a mask; health care professionals should wash their hands or use an alcohol-based hand sanitizer after removing all PPE.
- A respirator may refer to a personal protective device that is worn on the face or head and covers at least the nose and mouth.
- A respirator is used to reduce the wearer's risk of inhaling hazardous airborne particles (including infectious agents), gasses, or vapors.
- A N95 respirator may refer to a particulate-filtering, face piece respirator that filters at least 95% of airborne particles.
- Health care professionals should note that N95 respirators reduce the wearer's exposure to airborne particles.
- Health care professionals should note that N95 respirators are capable of filtering out all types of particles, including bacteria and viruses.
- A "fit test" may be required to determine the appropriate size respirator needed for each individual health care professional; health care professionals may also require training regarding how and when to use a respirator.
- Hand hygiene should be performed before donning a respirator.
- When donning a respirator, a health care professional should make sure the respirator completely covers his or her mouth and nose; health care professionals should also ensure the respirator fits snug to the face and

below the chin; additionally, a health care professional should be sure the respirator is properly sealed.

- Health care professionals should note that achieving an adequate seal to the face is essential when wearing a N95 respirator.
- Health care professionals should note that when properly fitted and worn, minimal leakage should occur around the edges of the respirator when the user inhales.
- To effectively remove a respirator, a health care professional should undo the bottom ties, if applicable, followed by the upper ties; the respirator should then be pulled off and discarded in the appropriate waste container; a health care professional should not touch a contaminated respirator. Health care professionals should engage in hand hygiene after removing respirators; health care professionals should wash their hands or use an alcohol-based hand sanitizer after removing all PPE.
- Health care professionals should note the following: a surgical N95 respirator (also referred as a medical respirator) is recommended only for use by health care professionals who need protection from both airborne and fluid hazards (e.g., splashes; sprays).
- Gowns that protect against microorganisms are available to health care professionals; for health care activities with low, medium, or high risk of contamination, surgical gowns may be used (note: the term surgical gown may refer to a type of gown intended to be worn by various health care professionals during surgical procedures).
- As with any type of PPE, the key to proper selection and use of a gown is to understand the hazards and the risk of exposure; some of the factors important to assessing the risk of exposure in health care facilities include: sources, modes of transmission, types of contact, and the duration and the type of tasks to be performed by the user of the PPE.
- Health care professionals should engage in effective hand hygiene before donning a gown.
- When putting on a gown, a health care professional should make sure the gown completely covers his or her torso from the neck to the knees; a gown should also completely cover a health care professional's arms and

wrist; a gown should be wrapped around the back and fastened at the back of the neck and waist, when applicable.

- To effectively remove a gown, a health care professional should unfasten the gown's ties and pull the gown away from the neck and shoulders; when the gown is removed from the body, it should be rolled or folded and placed in the appropriate waste container.
- Health care professionals should engage in hand hygiene after removing a gown; health care professionals should wash their hands or use an alcohol-based hand sanitizer after removing all PPE.
- Health care professionals should use gloves in situations involving possible contact with blood or body fluids, mucous membranes, and/or non-intact skin (e.g., exposed skin that is chapped, abraded, or with dermatitis).
- Nonsterile disposable patient examination gloves, which are used for routine patient care in health care settings, are appropriate for patient care.
- The use of gloves does not replace the need for hand hygiene.
- Gloves do not provide complete protection against hand contamination.
- Health care professionals should note that the prolonged use of gloves for contact precautions in the absence of considering the need to perform hand hygiene can result in the transmission of germs.
- Health care professionals should note that the use of contaminated gloves caused by inappropriate storage, inappropriate patient care moments, and techniques for donning and removing gloves, may also result in germ transmission.
- Typically, gloves are single-use items, glove decontamination and reprocessing are not recommended and should be avoided.
- The CDC does not recommend wearing double gloves when providing care to patients.
- Hand hygiene should be performed before donning gloves.

- When donning gloves, health care professionals should be sure to touch only a restricted surface of a glove corresponding to the wrist (e.g., at the top edge of the cuff).
- When wearing gloves, health care professionals should avoid touch contamination; touch contamination may refer to touching one's self and/or other surfaces such as tables, light switches, and doors while wearing gloves; touch contamination may lead to contamination and/or the passing of potentially infectious materials.
- Health care professionals should change their gloves as they administer care to different patients (i.e., a new patient means a new pair of gloves).
- Health care professionals should remove gloves after caring for a patient.
- To effectively remove a pair of gloves, a health care professional should use one gloved hand to grasp the palm area of the other gloved hand; once the health care professional has a firm grip on the palm of one gloved hand, the health care professional should then peel off the first glove; after removing the first glove, the health care professional should then hold that glove in one hand; using his or her fingers, the health care professional should slide the fingers off his or her ungloved hand under the remaining glove at the wrist and peel off the second glove right over the first glove; both gloves should then be placed in the appropriate waste container.
- Health care professionals should engage in hand hygiene after removing gloves; health care professionals should wash their hands or use an alcohol-based hand sanitizer after removing all PPE.

- Lactation specialists and other health care professionals who are not vaccinated should use alternative approaches, such as telehealth, to provide lactation support services whenever possible, particularly when providing support to breastfeeding dyads with suspected or confirmed COVID-19.
- In-person support may be necessary to support some breastfeeding individuals.
- Lactation specialists/health care professionals conducting home visits, breastfeeding individuals receiving in-home lactation services and breastfeeding education, and any other household members should consider getting the COVID-19 vaccine or screen themselves for COVID-19.

- Lactation specialists/health care professionals should stay home if they have COVID-19, have COVID-19 symptoms, and/or were in close contact with someone who has COVID-19 while not fully vaccinated.
- If the client or any other household member has COVID-19 and in-home support is deemed necessary and critical, use all recommended personal protective equipment.
- If neither the client nor any of the household members is known to have suspected or confirmed COVID-19, wear a surgical mask while inside the client's home; engage in effective hand hygiene with soap and water for at least 20 seconds when entering and leaving the home and when adjusting or putting on or taking off masks; discard disposable surgical masks between clients; if soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol; surgical masks offer both source control (i.e., blocking the spread of respiratory secretions from the wearer) and protection for the wearer against exposure to splashes and sprays of infectious material from others; additionally, in communities with moderate to substantial community transmission, consider wearing eye protection in addition to a surgical mask to ensure that the eyes, nose, and mouth are all protected from exposure to respiratory secretions while providing breastfeeding support.
- For all home visits where any household members are not vaccinated, or the household's COVID-19 vaccination status is unknown; health care professionals should require the client as well as any other household members aged two and older to wear a mask; because of the danger of suffocation, do not place masks on children younger than two years; masks should also not be worn by anyone who has trouble breathing, is unconscious, cannot move, or is otherwise unable to remove the mask without assistance; when not providing hands-on support or close observation, health care professionals should stay at least six feet away from the client and others in the home; masks should be worn at all times and are even more important when less than six feet apart; health care professionals should wear disposable gloves when touching the client or the child; engage in effective hand hygiene with soap and water for at least 20 seconds when entering and leaving the home, when adjusting or putting on or off masks, and before putting on and after taking off disposable gloves; if soap and water are not readily available, health care professionals should use a hand sanitizer that contains at

least 60% alcohol; health care professionals should clean and disinfect surfaces and equipment such as infant scales, when appropriate.

- When counseling breastfeeding individuals on precautions to take prior to breastfeeding or expressing milk in workplaces, health care professionals should discuss an individual's circumstances (e.g., level of exposure to people with suspected or confirmed COVID-19; availability and proper use of personal protective equipment); all individuals breastfeeding or expressing milk in workplaces should be counseled on how to engage in effective hand hygiene before touching any pump or bottle parts; and how to effectively clean, sanitize, and store infant feeding items.

- Breastfeeding individuals who work in settings with higher risk of potential exposure to SARS-CoV-2, such as health care professionals and first responders, should wear a mask while breastfeeding or expressing milk in the workplace.

- Employers should provide breastfeeding employees with a private, non-bathroom space for milk expression; if a workplace has a multi-user lactation room, efforts should be made to implement engineering and administrative controls to enable physical distancing (e.g., spacing lactation stations at least six feet apart, installing physical shields between lactation stations, staggering lactation schedules, and encouraging telework); the risk of getting infected with SARS-CoV-2 from contaminated surfaces is low; however, both cleaning (use of soap or detergent) and disinfection (use of a product or process designed to inactivate SARS-CoV-2) of milk collection devices (e.g., bottles, milk bag, breast pump) can reduce the risk of transmission from contaminated surfaces and is generally recommended to prevent bacteria from contaminating the breast milk; breastfeeding individuals may consider additional steps to minimize potential routes of exposure.

- Pasteurized donor human milk is important in the care of preterm infants when a lactating caregiver's milk is not available; current evidence suggests that breast milk is not a likely source of SARS-CoV-2 infection; also, there is data suggesting that pasteurization inactivates SARS-CoV-2 in donor human milk; therefore, pasteurized donor human milk is very unlikely to be a source of SARS-CoV-2 infection; disruptions in human milk donations may be seen due to COVID-19; if hospitals have difficulty acquiring donor human milk, available supplies should be prioritized for preterm infants who will benefit most from human milk feeds.

Section 4 Summary

Due to the ever evolving threat of COVID-19, health care professionals should work to prevent the transmission of COVID-19 when providing breastfeeding education and care to patients, especially those engaging in breastfeeding. To help prevent the transmission of COVID-19 to breastfeeding individuals the CDC developed the Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19. Subsequently, the fourth element of effective breastfeeding education is to follow the recommendations included in the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19 to help prevent the transmission of COVID-19. Health care professionals should note the following: in addition to the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19, health care professionals should follow their health care organizations' COVID-19-related policies and procedures to help prevent the transmission of COVID-19 to breastfeeding individuals.

Section 4 Key Concepts

- The fourth element of effective breastfeeding education is to follow the recommendations included in the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19 to help prevent the transmission of COVID-19.

Section 4 Key Terms

Coronavirus disease 2019 (COVID-19) - a respiratory illness that can spread from person to person that is caused by a virus known as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)

Close contact - being within six feet of any other person for a cumulative total of 15 minutes or more over a 24-hour period during that person’s potential period of COVID-19 transmission

Hand hygiene - the process of cleaning the hands in order to prevent contamination and/or the spread of infectious agents

Personal protective equipment (PPE) - equipment designed to protect, shield, and minimize exposure to hazards that may cause serious injury, illness, and/or disease

Medical procedure mask (otherwise referred to as a surgical mask or a disposable face mask) - a single-use mask that is not made of cloth and is not designed to be washed or laundered

Respirator - a personal protective device that is worn on the face or head and covers at least the nose and mouth

N95 respirator - a particulate-filtering, face piece respirator that filters at least 95% of airborne particles

Surgical gown - a type of gown intended to be worn by various health care professionals during surgical procedures

Touch contamination - touching one's self and/or other surfaces such as tables, light switches, and doors while wearing gloves

Section 4 Personal Reflection Question

How can health care professionals ensure that the recommendations included in the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19 are met and followed while providing breastfeeding education?

Section 5: COVID-19-Related Occupational Safety and Health Standards

In addition to the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19, health care professionals should also follow the Occupational Safety and Health Administration's (OSHA) COVID-19-Related Occupational Safety and Health Standards to help prevent the transmission of COVID-19 (note: Occupational Safety and Health Administration [OSHA] may refer to the regulatory agency of the United States Department of Labor responsible for ensuring safe and healthful working conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance). Therefore, the fifth element of effective breastfeeding education is to follow the recommendations and requirements included in OSHA's COVID-19-Related Occupational Safety and Health Standards to help prevent the transmission of COVID-19. This section of the course highlights requirements outlined in OSHA's COVID-19-related Occupational Safety and Health Standards. The information

found within this section of the course was derived from materials provided by OSHA unless, otherwise, specified (Occupational Safety and Health Administration [OSHA], 2021).

OSHA's COVID-19-Related Occupational Safety and Health Standards

- OSHA's COVID-19-related Occupational Safety and Health Standards indicate that the term aerosol-generating procedure refers to a medical procedure that generates aerosols that can be infectious and are of respirable size.
- OSHA's COVID-19-related Occupational Safety and Health Standards indicate that the term airborne infection isolation room (AIIR) refers to a dedicated negative pressure patient-care room, with special air handling capability, which is used to isolate persons with a suspected or confirmed airborne-transmissible infectious disease (e.g., a booth, tent, or other enclosure designed to operate under negative pressure).
- OSHA's COVID-19-related Occupational Safety and Health Standards indicate that the term direct patient care refers to hands-on, face-to-face contact with patients for the purpose of diagnosis, treatment, and monitoring.
- OSHA's COVID-19-related Occupational Safety and Health Standards indicate that the term fully vaccinated means two weeks or more following the final dose of a COVID-19 vaccine.
- The employer must develop and implement a COVID-19 plan for each workplace. If the employer has multiple workplaces that are substantially similar, its COVID-19 plan may be developed by workplace type rather than by individual workplace so long as all required site specific information is included in the plan.
- If the employer has more than 10 employees, a COVID-19 plan must be written.
- The employer must designate one or more workplace COVID-19 safety coordinators to implement and monitor the COVID-19 plan. The COVID-19 safety coordinator(s) must be knowledgeable in infection control principles and practices as they apply to the workplace and employee job operations. The identity of the safety coordinator(s) must be documented in any written COVID-19 plan. The safety coordinator(s) must have the authority to ensure compliance with all aspects of the COVID-19 plan.

- The employer must conduct a workplace-specific hazard assessment to identify potential workplace hazards related to COVID-19.
- The employer must seek the input and involvement of non-managerial employees and their representatives, if any, in the hazard assessment and the development and implementation of the COVID-19 plan.
- The employer must monitor each workplace to ensure the ongoing effectiveness of the COVID-19 plan and update it as needed.
- The COVID-19 plan must address the hazards identified by an assessment, and include policies and procedures to minimize the risk of transmission of COVID-19 for each employee.
- When employees of different employers share the same physical location, each employer must effectively communicate its COVID-19 plan to all other employers, coordinate to ensure that each of its employees is protected, and adjust its COVID-19 plan to address any particular COVID-19 hazards presented by the other employees (note: the aforementioned requirement does not apply to delivery people, messengers, and other employees who only enter a workplace briefly to drop off or pick up items).
- Employers should limit and monitor points of entry to the setting.
- Employers should screen and triage all clients, patients, residents, delivery people, and other visitors and other non-employees entering the setting.
- Employers must develop and implement policies and procedures to adhere to Standard and Transmission-Based Precautions in accordance with the CDC's ''Guidelines for Isolation Precautions.''
- Employers must provide, and ensure that employees wear facemasks.
- The employer must ensure a facemask is worn by each employee over the nose and mouth when indoors and when occupying a vehicle with other people for work purposes; the employer must provide a sufficient number of facemasks to each employee and must ensure that each employee changes them at least once per day, whenever they are soiled or damaged, and more frequently as necessary (e.g., patient care reasons) (note: facemask exceptions include: when an employee is alone in a room; while an employee is eating and drinking at the

workplace, provided each employee is at least six feet away from any other person, or separated from other people by a physical barrier.)

- When it is important to see a person's mouth (e.g., communicating with an individual who is deaf or hard of hearing) and the conditions do not permit a facemask that is constructed of clear plastic (or includes a clear plastic window), the employer must ensure that each employee wears an alternative to protect the employee, such as a face shield, if the conditions permit it.

- When employees cannot wear facemasks due to a medical necessity, medical condition, or disability as defined in the Americans with Disabilities Act, or due to a religious belief; exceptions must be provided for a narrow subset of persons with a disability who cannot wear a facemask or cannot safely wear a facemask, because of the disability, as defined in the Americans with Disabilities Act, including a person who cannot independently remove the facemask.

- When employees have exposure to a person with suspected or confirmed COVID-19, the employer must provide: a respirator to each employee and ensure that it is provided and used; gloves; an isolation gown or protective clothing; and eye protection to each employee; and ensure that the PPE is used.

- For aerosol-generating procedures performed on an individual with suspected or confirmed COVID-19, the employer must provide: a respirator to each employee and ensure that it is provided and used; gloves; an isolation gown or protective clothing; and eye protection to each employee and ensure that the PPE is used.

- When an aerosol-generating procedure is performed on a person with suspected or confirmed COVID-19, the employer must limit the number of employees present during the procedure to only those essential for patient care and procedure support; the employer must ensure that the procedure is performed in an existing AIIR, if available; after the procedure is completed, the employer must clean and disinfect the surfaces and equipment in the room or area where the procedure was performed.

- The employer must ensure that each employee is separated from all other people by at least six feet when indoors unless the employer can demonstrate that such physical distancing is not feasible for a specific activity (e.g., hands-on medical care) (note: the aforementioned provision does not apply to momentary exposure while people are in movement [e.g., passing in hallways or aisles]).

- In patient care areas, resident rooms, and for medical devices and equipment, the employer must follow standard practices for cleaning and disinfection of surfaces and equipment in accordance with the CDC's "COVID-19 Infection Prevention and Control Recommendations" and the CDC's "Guidelines for Environmental Infection Control."

- The employer must provide alcohol-based hand rub that is at least 60% alcohol or provide readily accessible hand washing facilities.

- The employer must screen each employee before each work day and each shift. Screening may be conducted by asking employees to self-monitor before reporting to work or may be conducted in-person by the employer (note: if a COVID-19 test is required by the employer for screening purposes, the employer must provide the test to each employee at no cost to the employee).

- The employer must require each employee to promptly notify the employer when the employee: is COVID-19 positive (i.e., confirmed positive test for, or was diagnosed by a licensed health care professional with, COVID-19); or was told by a licensed health care professional that he or she is suspected to have COVID-19; or is experiencing recent loss of taste and/or smell with no other explanation; or is experiencing both fever (≥100.4 °F) and new unexplained cough associated with shortness of breath.

- When an employer is notified that a person who was in the workplace(s) is COVID-19 positive, the employer must, within 24 hours: notify each employee who was not wearing a respirator and any other required PPE and was in close contact with that person in the workplace (note: the notification must state the fact that the employee was in close contact with someone with COVID-19 along with the date(s) that contact occurred); notify all other employees who were not wearing a respirator and any other required PPE and worked in a well-defined portion of a workplace (e.g., a particular floor) in which that person was present during the potential transmission period; notify other employers whose employees were not wearing respirators and any other required PPE and have been in close contact with that person, or worked in a well-defined portion of a workplace (e.g., a particular floor) in which that person was present, during the potential transmission period.

- If an employer knows an employee is COVID-19 positive or meets other related criteria, the employer must immediately remove that employee and keep the employee removed until he or she meets related return to work criteria.
- The employer must make decisions regarding an employee's return to work after a COVID-19-related workplace removal.
- The employer must support COVID-19 vaccination for each employee by providing reasonable time and paid leave (e.g., paid sick leave) to each employee for vaccination and any side effects experienced following vaccination.
- The employer must ensure that each employee receives training, in a language and at a literacy level the employee understands, and so that the employee comprehends at least the following: COVID-19, including how the disease is transmitted, the importance of hand hygiene to reduce the risk of spreading COVID-19 infections, ways to reduce the risk of spreading COVID-19 through the proper covering of the nose and mouth, the signs and symptoms of the disease, risk factors for severe illness, and when to seek medical attention; employer-specific policies and procedures on patient screening and management; tasks and situations in the workplace that could result in COVID-19 infection; workplace-specific policies and procedures to prevent the spread of COVID-19 that are applicable to the employee's duties (e.g., policies on Standard and Transmission-Based Precautions, physical distancing, physical barriers, ventilation, aerosol generating procedures); employer-specific multi-employer workplace agreements related to infection control policies and procedures, the use of common areas, and the use of shared equipment that affect employees at the workplace; employer-specific policies and procedures for PPE, including: when PPE is required for protection against COVID-19; limitations of PPE for protection against COVID-19; how to properly put on, wear, and take off PPE; how to properly care for, store, clean, maintain, and dispose of PPE; and any modifications to donning, doffing, cleaning, storage, maintenance, and disposal procedures needed to address COVID-19 when PPE is worn to address workplace hazards other than COVID-19; workplace-specific policies and procedures for cleaning and disinfection; employer-specific policies and procedures on health screening and medical management; available sick leave policies, any COVID-19-related benefits to which the employee may be entitled under applicable federal, state, or local laws, and other supportive policies and practices (e.g., telework, flexible hours); the identity of the safety coordinator(s) specified in the COVID-19 plan; and how

the employee can obtain copies of employer specific policies and procedures, including the employer's written COVID-19 plan, if required.

- The employer must ensure that each employee receives additional training whenever: changes occur that affect the employee's risk of contracting COVID-19 at work (e.g., new job tasks); policies or procedures are changed; or there is an indication that the employee has not retained the necessary understanding or skill.
- The employer must ensure that COVID-19 training is overseen or conducted by a person knowledgeable in the covered subject matter as it relates to the employee's job duties.
- The employer must ensure that COVID-19 training provides an opportunity for interactive questions and answers with a person knowledgeable in the covered subject matter as it relates to the employee's job duties.
- The employer must inform each employee that: employees have a right to required protections; and employers are prohibited from discharging or in any manner discriminating against any employee for exercising his or her right to required protections, or for engaging in actions that are required.
- Employers with more than 10 employees must retain all versions of the implemented COVID-19 plan.
- Employers should establish and maintain a COVID-19 log to record each instance identified by the employer in which an employee is COVID-19 positive, regardless of whether the instance is connected to exposure to COVID-19 at work.
- The COVID-19 log must contain, for each instance, the employee's name, one form of contact information, occupation, location where the employee worked, the date of the employee's last day at the workplace, the date of the positive test for, or diagnosis of, COVID-19, and the date the employee first had one or more COVID-19 symptoms, if any were experienced.
- The information in the COVID-19 log must be recorded within 24 hours of the employer learning that the employee is COVID-19 positive and must be maintained as though it is a confidential medical record and must not be disclosed except as required by federal law.

Section 5 Summary

In addition to the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19 , health care professionals should also follow OSHA's COVID-19-Related Occupational Safety and Health Standards to help prevent the transmission of COVID-19. Therefore, the fifth element of effective breastfeeding education is to follow the recommendations included in OSHA's COVID-19-Related Occupational Safety and Health Standards to help prevent the transmission of COVID-19. Health care professionals should note the following: in addition to OSHA's COVID-19-Related Occupational Safety and Health Standards, health care professionals should follow their health care organizations' COVID-19-related policies and procedures to help prevent the transmission of COVID-19 to breastfeeding individuals.

Section 5 Key Concepts

- The fifth element of effective breastfeeding education is to follow the recommendations and requirements included in OSHA's COVID-19-Related Occupational Safety and Health Standards to help prevent the transmission of COVID-19.

Section 5 Key Terms

Occupational Safety and Health Administration (OSHA) - the regulatory agency of the United States Department of Labor responsible for ensuring safe and healthful working conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance

Aerosol-generating procedure - a medical procedure that generates aerosols that can be infectious and are of respirable size

Airborne infection isolation room (AIIR) - a dedicated negative pressure patient-care room, with special air handling capability, which is used to isolate persons with a suspected or confirmed airborne-transmissible infectious disease

Direct patient care - hands-on, face-to-face contact with patients for the purpose of diagnosis, treatment, and monitoring

Fully vaccinated - two weeks or more following the final dose of a COVID-19 vaccine

Section 5 Personal Reflection Question

How can health care professionals ensure that the requirements outlined by OSHA's COVID-19-Related Occupational Safety and Health Standards are met and followed within their health care organization?

Conclusion

According to the CDC, breastfeeding is the best source of nutrition for most infants. Therefore, patients should receive breastfeeding education to ensure they effectively breastfeed infants. Health care professionals can provide effective breastfeeding education to individuals by incorporating the five essential elements of breastfeeding education into patient care. The five essential elements of breastfeeding education include the following: understand why breastfeeding is important, and how to provide breastfeeding education; provide individuals with information on the key aspects of effective breastfeeding; provide individuals with education regarding the potential obstacles associated with breastfeeding and recommendation on how to overcome such obstacles; follow the recommendations included in the CDC's Interim Guidance on Breastfeeding and Breast Milk Feeds in the Context of COVID-19 to help prevent the transmission of COVID-19; follow the recommendations included in OSHA's COVID-19-Related Occupational Safety and Health Standards to help prevent the transmission of COVID-19.

References

Centers for Disease Control and Prevention. (2021, November 19). *Breastfeeding*. https://www.cdc.gov/breastfeeding/index.htm

Centers for Disease Control and Prevention. (2021, December 29). *Care for breastfeeding people*. https://www.cdc.gov/coronavirus/2019-ncov/hcp/care-for-breastfeeding-women.html

Centers for Disease Control and Prevention. (2020, October 26). *How to clean, sanitize, and store infant feeding items*. https://www.cdc.gov/healthywater/hygiene/healthychildcare/infantfeeding/cleansanitize.html

Centers for Disease Control and Prevention. (2021, August 10). *Maternal or infant illnesses or conditions*. https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/maternal-or-infant-illnesses/index.html

Centers for Disease Control and Prevention. (2018, June 18). *Standard precautions*. https://www.cdc.gov/oralhealth/infectioncontrol/summary-infection-prevention-practices/standard-precautions.html

Centers for Disease Control and Prevention. (2021, August 10). *Vaccinations, medications, and drugs*. https://www.cdc.gov/breastfeeding/breastfeeding-special-circumstances/vaccinations-medications-drugs/index.html

Occupational Safety and Health Administration. (2021). *1910. 502 - Healthcare*. https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.502

U.S. Department of Health and Human Services. (2020). *Dietary guidelines for Americans, 2020-2025*. 9th Edition. https://www.dietaryguidelines.gov/sites/default/files/2020-12/Dietary_Guidelines_for_Americans_2020-2025.pdf

World Health Organization. (2022). *Breastfeeding*. https://www.who.int/health-topics/breastfeeding#tab=tab_1