Breastfeeding — Best For Baby. Best For Mom.

Whether you are a new or expecting Mom, if you are on this section of the web site, you're probably interested in giving your baby the best care you can. And one of the best things that only you can do is to breastfeed for as long as possible. While breastfeeding isn't the only option for feeding your baby, every mother has the potential to succeed and make it a wonderful experience. Or maybe you are the partner or a family member of a breastfeeding Mom and would like to learn more about breastfeeding. You've come to the right place! Here we provide practical, helpful breastfeeding information. Dive into our resources to find out how breastfeeding can be one of the most important things you do for both you and your baby!

Why Should You Breastfeed Your Baby?

Best for Baby

A mother's milk has just the right amount of fat, sugar, water, and protein that is needed for a baby's growth and development. Most babies find it easier to digest breast milk than they do formula. Breast milk has agents (called antibodies) in it to help protect infants from bacteria and viruses and to help them fight off infection and disease. Human milk straight from the breast is always sterile.

Best for Mom

Breastfeeding saves times and money. You do not have to purchase, measure, and mix formula, and there are no bottles to warm in the middle of the night. Breastfeeding also helps a mother bond with her baby. Physical contact is important to newborns and can help them feel more secure, warm and comforted. Nursing uses up extra calories, making it easier to lose the pounds gained from pregnancy. It also helps the uterus to get back to its original size more quickly and lessens any bleeding a woman may have after giving birth. Breastfeeding also may lower the risk of breast and ovarian cancers.

The U.S. Surgeon General Recommends Breastfeeding

The U.S. Surgeon General recommends that babies be fed with breast milk only — no formula — for the first 6 months of life. It is better to breastfeed for 6 months and best to breastfeed for 12 months, or for as long as you and your baby wish. Solid foods can be introduced when the baby is 6 months old, while you continue to breastfeed.

June 2004

ASK US YOUR BREASTFEEDING QUESTIONS

Have you heard? The National Women's Health Information Center now has a Breastfeeding Helpline!
Call us with your questions at 1-800-994-WOMAN (9662).

How we can help you

NWHIC has partnered with La Leche League International to train our Information Specialists so they can help you with common breastfeeding issues such as nursing positions, questions about pumping and storage, and provide you with the support moms and dads need to make breastfeeding a success. The Helpline (which operates in both English and Spanish) can also provide tips for working moms who would like to continue breastfeeding, and offer suggestions for financial support. The Helpline is open to nursing mothers as well as their partners, families, prospective parents, health professionals and institutions seeking to better educate new mothers about the benefits of breastfeeding.

* Please note that the Helpline is an information and referral service only and we cannot provide a medical diagnosis, or answer medical questions. All medical questions should be directed to a health care provider.

Ask about our free publications

If you need additional written information on the benefits of breastfeeding, coping with breastfeeding challenges, and other breastfeeding tips, the Breastfeeding Helpline Information Specialists can order a packet of free information for you. This information, provided by the National Women's Health Information Center and other reliable organizations is easy-to-read and will be valuable during your breastfeeding experience, so don't forget to ask for the breastfeeding packet when you call! General breastfeeding information is now available in English, Spanish and Chinese!

When you can contact the Breastfeeding Helpline

Call the Helpline Monday through Friday, from 9 a.m. to 6 p.m., EST. If you call after hours, you will be given the option to leave a message, and a Breastfeeding Information Specialist will return your call on the next business day.

June 2004

The National Breastfeeding Campaign — Babies were Born to be Breastfed

The US Department of Health and Human Services Office on Women's Health (OWH) has been funded to carry out the recommendations of the HHS Blueprint for Action on Breastfeeding (2000) into a National Breastfeeding Awareness Campaign to promote breastfeeding among first-time parents (mothers and fathers) who would not normally breastfeed their baby. The overall goal of the campaign is to increase the proportion of mothers who breastfeed their babies in the early postpartum period to 75% and those within 6 months postpartum to 50% by the year 2010.

The campaign aims to empower women to commit to breastfeeding and to clearly illustrate findings from recent studies that show that babies who are exclusively breastfed for 6 months are less likely to develop ear infections, diarrhea, respiratory illnesses, and may be less likely to develop childhood obesity. Besides trying to raise initiation rates, the campaign will also stress the importance of exclusive breastfeeding for 6 months.

The Campaign

The Babies were Born to be Breastfed PSAs are available in a variety of formats, including television, radio and print advertisements. Click here to see the elements of the campaign.

Helpline

NWHIC has trained our Information Specialists so they can help you with common breastfeeding issues such as nursing positions, questions about pumping and storage, and provide the support moms and dads need to make breastfeeding a success. The Helpline (which operates in both English and Spanish) can also provide tips for working moms who would like to continue breastfeeding, offer suggestions for financial support and provide free brochures that offer information and tips on breastfeeding.

Call the Helpline at 1-800-994-WOMAN. It's open Monday through Friday, from 9 a.m. to 6 p.m., EST. If you call after hours, you will be given the option to leave a message, and a Breastfeeding Information Specialist will return your call on the next business day.

Media Outreach Campaign

As a part of the National Breastfeeding Campaign, a comprehensive media campaign was launched in June 2004. The Advertising Council has selected the National Breastfeeding Awareness Campaign for official sponsorship. OWH will work in close coordination with the Ad Council to implement the campaign.

The media campaign is based on the goals, objectives, and recommendations of the HHS Blueprint for Action on Breastfeeding and is targeting first time parents who would not normally breastfeed.

The campaign is being marketed with Public Service Announcements that are being featured on television and radio, in newspapers and magazines, on billboards, mass transit vehicles and shelters and on the internet.

Community-Based Demonstration Projects

Eighteen community-based demonstration projects (CDPs) (22 sites) throughout the United States are working in coordination with the Office on Women's Health and the Advertising Council to implement the National Breastfeeding Awareness Campaign at the local level. The CDPs, which include breastfeeding coalitions, hospitals, universities, and other organizations have been funded to offer breastfeeding services, staff a live breastfeeding helpline, provide outreach to their communities, train healthcare providers on breastfeeding, implement the media aspects of the campaign, and track breastfeeding rates in their communities.

Challenges

When devising the strategy and concepts for the campaign, OWH found that the issue is very challenging for a number of reasons. Promoting breastfeeding is incredibly complex because there are numerous audiences and influencers, numerous interest groups, differing opinions about 'why and why don't' women breastfeed, and multiple possible campaign directions that could have been taken.

Focus Group Research

In preparation for the campaign, extensive research was conducted in Chicago, San Francisco and New Orleans in November and December 2002. Thirty-nine focus groups, including first time expectant and new mothers, expectant fathers, and grandmothers, were brought together to discuss infant feeding practices. Half of the groups were African American and half general market and included formula feeders, formula feeding intenders, breastfeeding feeders, and breastfeeding intenders.

The objectives of the focus group testing was to identify perceptions and understanding of breastfeeding versus formula feeding; key societal, emotional and rational benefits and barriers; and to define the target audience.

Though there were variations among the groups including ethnic and cultural differences, varying knowledge about breastfeeding, and age differences, the similarities of views about breastfeeding outweighed the differences. The findings are summarized below.

Strategic Implications of Research Findings

The research gathered through the focus group testing shed light on the fact that low breastfeeding rates are not necessarily due to a lack of awareness given that many of the participants appeared somewhat knowledgeable about the positive benefits of breastfeeding. A major contributing factor is that many in this country see formula as the standard or the norm in feeding a baby or young child. Breastfeeding is seen as having "added benefits" or "adding vitamins to a standard diet." Perhaps this is due to the way breastfeeding is discussed in the mainstream. "If you choose to breastfeed..." or "Benefits of breastfeeding include...". If language were reframed to "If you breastfeed, your baby will be less likely to get...," people will begin to see that there are consequences associated with not breastfeeding. It is not a

matter of making people aware of breastfeeding; it is a matter of changing behaviors. It is important to help women more clearly understand the importance of initiating and sticking with breastfeeding.

There is also a need to clarify an attainable goal for duration. When asked how long one should breastfeed, participants' answers spanned 2 months to 2 years. Going back to work was often used as a reason for weaning or not breastfeeding at all. Though the US Surgeon General and leading medical and pediatric organizations have published recommendations on the duration of breastfeeding, it has not been consistently or effectively conveyed to the American public.

Through focus group testing, OWH and the Ad Council determined that a 'benefits focused' campaign would not dramatically change behavior—awareness of benefits is not enough to change behavior and breastfeeding rates in this country.

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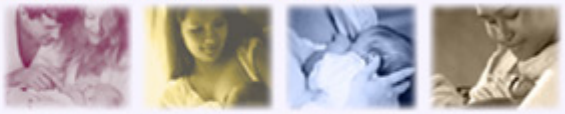


What if I'm Unable to Breastfeed?

HHS strongly recommends and encourages women to breastfeed exclusively for six months. But it understands that there are mothers who are unable to breastfeed or shouldn't breastfeed. Infant formula is safe and nutritious for those women who are not able to breastfeed. In fact, the federal government is a large distributor of infant formula through various programs, such as the Women, Infants, and Children program.

June 2004

QUESTIONS AND ANSWERS ABOUT BREASTFEEDING

Why should I breastfeed?

Here are just some of the many good reasons why you should breastfeed your baby:

Breast milk is the most complete form of nutrition for infants. Breast milk has just the right amount of fat, sugar, water, and protein that is needed for a baby's growth and development. Most babies find it easier to digest breast milk than they do formula.

Breast milk has agents (called *antibodies*) in it to help protect infants from bacteria and viruses. Breastfed babies are more able to fight off infection and disease, such as diarrhea, ear infections, and respiratory illnesses such as pneumonia. They are sick less often and have fewer visits to health care providers.

Nursing uses up extra calories, making it easier to lose the pounds of pregnancy. It also helps the uterus to get back to its original size and lessens any bleeding you might have after giving birth.

Breastfeeding lowers the risk of breast and ovarian cancers.

Breastfeeding can help you bond with your baby. Physical contact is important to newborns and can help them feel more secure, and warm and comforted.

More information on the Benefits of Breastfeeding:
www.4woman.gov/breastfeeding/bf.cfm?page=227

How long should I breastfeed?

One of the best things that *only you* can do is to breastfeed your baby for as long as possible. The longer a mom and baby breastfeeds, the greater the benefits are for both mom and baby. Babies should be fed with breast milk only — no formula — for the first six months of life. Ideally, though, babies should receive breast milk through the first year of life, or for as long as both you and your baby wish. Solid foods can be added to your baby's diet, while you continue to breastfeed, when your baby is six months old. For at least the first six months, breastfed babies don't need supplements of water, juice, or other fluids. These can interfere with your milk supply if they are introduced during this time.

Is there any time when I should not breastfeed?

Some women think that when they are sick, they should not breastfeed. But, most common illnesses, such as colds, flu, or diarrhea, can't be passed through breast milk. In fact, if you are sick, your breast milk will have antibodies in it. These antibodies will help protect your baby from getting the same sickness.

A few viruses can pass through breast milk. HIV, the virus that causes AIDS, is one of them. If you are HIV positive, you should not breastfeed.

Sometimes babies can be born with a condition called *galactosemia*, in which they can't tolerate breast milk. This is because their bodies can't break down the sugar galactose. Babies with classic galactosemia may have liver problems, malnutrition, or mental retardation. Since both human and animal milk contain the sugar lactose that splits into galactose and glucose, babies with classic galactosemia must be fed a special diet that is free of lactose and galactose.

If you are breastfeeding, you should not smoke or take illegal drugs. Some drugs, such as cocaine and PCP, can affect your baby and cause serious side effects. Other drugs, such as heroin and marijuana can cause irritability, poor sleeping patterns, tremors, and vomiting. Babies can become addicted to these drugs.

Sometimes a baby may have a reaction to something you eat, but this doesn't mean your baby is allergic to your milk. Usually, if you have eaten a food throughout pregnancy, your baby has already become used to the flavor of this food. If you stop eating whatever is bothering your baby, the problem usually goes away on its own.

Is it safe to take medications while breastfeeding?

Always talk with your health care provider before taking any medications. Most medications pass into your milk in small amounts. If you take medication for a chronic condition such as high blood pressure, diabetes or asthma, your medication may already have been studied in breastfeeding women, so you should be able to find information to help you make an informed decision with the help of your health care provider. Newer medications and medications for rare disorders may have less information available. The American Academy of Pediatrics has information about many prescription and over-the-counter medications posted on their web site at: www.aap.org.

More information on medications and breastfeeding:
www.4woman.gov/breastfeeding/bf.cfm?page=235

Can I breastfeed if my breasts are small?

Of course! Breast size is not related to the ability to produce milk for a baby. Breast size is determined by the amount of fatty tissue in the breast, not by the amount of milk. Most women, with all sizes of breasts, can make enough milk for their babies.

Will breastfeeding keep me from getting pregnant?

When you breastfeed, your ovaries can stop releasing eggs (or ovulating), making it harder for you to get pregnant. Your periods can also stop. But, there are no guarantees that you will not get pregnant while you are nursing. The only way to make sure pregnancy does not occur is to use a method of birth control. The safest birth control pill to use when you are breastfeeding is the "mini-pill." However, talk with your health care provider about what birth control method is best for you to use while breastfeeding.

Will breastfeeding tie me to my home?

Not at all! Breastfeeding can be convenient no matter where you are because you don't have to bring along feeding equipment like bottles, water, or formula. Your baby is all you need. Even if you want to breastfeed in private, you usually can find a woman's lounge or fitting room. If you want to go out without your baby, you can pump your milk beforehand, and leave it for someone else to give your baby while you are gone.

More information on pumping and storing breast milk:
www.4woman.gov/breastfeeding/bf.cfm?page=230

Can I still breastfeed when I go back to work?

Yes! You can do it! Breastfeeding keeps you connected to your baby, even when you are away. Employers and co-workers benefit because breastfeeding moms often need less time off for sick babies.

More and more women are breastfeeding when they return to work. There are many companies selling effective breast pumps and storage containers for your milk. Many employers are willing to set up special rooms for mothers who pump. After you have your baby, try to take as much time off as possible, since it will help you get breastfeeding well established and also reduce the number of months you may need to pump your milk while you are at work.

If you plan to have your baby take a bottle of expressed breast milk while you are at work, it is recommended to introduce your baby to a bottle when he or she is around four weeks old. Otherwise, the baby might not accept the bottle later on. Once your baby is comfortable taking a bottle, it is a good idea to have dad or another family member offer a bottle of pumped breast milk on a regular basis so the baby stays in practice.

Let your employer and/or human resources manager know that you plan to continue breastfeeding once you return to work. Before you return to work, or even before you have your baby, start talking with your employer about breastfeeding. Don't be afraid to request a clean and private area where you can pump your milk. If you don't have your own office space, you can ask to use a supervisor's office during certain times. Or you can ask to have a clean, clutter free corner of a storage room. All you need is a chair, a small table, and an outlet if you are using an electric pump. Many electric pumps also can run on batteries and don't require an outlet. You can lock the door and place a small sign on it that asks for some privacy. You can pump your breast milk during lunch or other breaks. You could suggest to your employer that you are willing to make up work time for time spent pumping milk.

After pumping, you can refrigerate your milk, place it in a cooler, or freeze it for the baby to be fed later. You can even leave it at room temperature for up to six hours if you don't have access to a refrigerator. Many breast pumps come with carrying cases that have a section to store your milk with ice packs.

Many employers are NOT aware of state laws that state they have to allow you to breastfeed at your job. Under these laws, your employer is required to set up a space for you to breastfeed and/or allow paid/unpaid time for breastfeeding employees. To see if your state has a breastfeeding law for employers, go to http://www.lalecheleague.org/LawBills.html or call us at 1-800-994-WOMAN (9662).

More information on pumping and storing breast milk:
www.4woman.gov/breastfeeding/bf.cfm?page=236
www.4woman.gov/breastfeeding/bf.cfm?page=237

How much do breastfeeding pumps cost and what kind will I need?

Breast pumps range in price from under $50 (manual pumps) to over $200 (electrical pumps that include a carrying case and an insulated section for storing milk containers). If you're only going to be away from your baby a few hours a week, then you can purchase a manual pump, or one of the less expensive ones. If you're going back to work, it is worth investing in a good quality electric pump. Some pumps can be purchased at baby supply stores or general department stores, but most high quality automatic pumps have to be purchased or rented from a lactation consultant, at a local hospital, or from a breastfeeding organization.

More information on breast pumps:
www.4woman.gov/breastfeeding/bf.cfm?page=236

How can I breastfeed discreetly in public?

You can breastfeed discreetly in public by wearing clothes that allow easy access to your breasts, such as button down shirts. By draping a receiving blanket over your baby and your breast, most people won't even realize that you are breastfeeding. It's helpful to nurse the baby before he/she becomes fussy so that you can get into a comfortable position to nurse. You also can purchase a nursing cover or baby sling for added discretion. Many stores have women's lounges or dressing rooms, if you want to slip into one of those to breastfeed.

If I decide to breastfeed, is there a right way to do so?

There are several tips for making breastfeeding a good experience for both you and your baby. However, you can prevent the most common challenges or problems by following the three most important tips about breastfeeding:

1. Nurse early and often. Try to breastfeed your baby within the first hour after birth. Newborns need to nurse frequently, at least every two hours, and not on a strict schedule. This stimulates your breasts to produce plenty of milk.

2. Nurse with the nipple and the areola (brown area surrounding the nipple) in the baby's mouth, not just the nipple.

3. Breastfeed on demand. Since breast milk is more easily digested than formula, breastfed babies eat more often than bottle-fed babies. Babies nurse less often as they get older and start solid foods. Watch your baby, not the clock, for signs of hunger, such as being more alert or active, mouthing (putting hands or fists to mouth and making sucking motion with mouth), or rooting (turning head in search of nipple). Crying is a late sign of hunger.

More information on tips for making breastfeeding a good experience:
www.4woman.gov/breastfeeding/bf.cfm?page=228

Does breastfeeding hurt?

Breastfeeding does not hurt. There may be some tenderness at first, but it should gradually go away as the days go by. Your breasts and nipples are designed to deliver milk to your baby. When your baby is breastfeeding effectively, it should be calming and comfortable for both of you. If breastfeeding becomes painful for you, seek help from someone who is knowledgeable about breastfeeding.

To minimize soreness, your baby's mouth should be wide open, with as much of the areola (the darker area around the nipple) as far back into his/her mouth as possible. The baby should never nurse on the nipple only. If it hurts, take the baby off of your breast and try again. The baby may not be latched on right. Break your baby's suction to your breast by gently placing your finger in the corner of his/her mouth, and re-position your baby.

More information on Breastfeeding Know How:
www.4woman.gov/breastfeeding/bf.cfm?page=228

More information on Coping with Breastfeeding Challenges:
www.4woman.gov/breastfeeding/bf.cfm?page=229

Can I give my baby a pacifier if I breastfeed?

Most breastfeeding counselors recommend avoiding bottle nipples or pacifiers for about the first month because they may interfere with your baby's ability to learn to breastfeed. After you and your baby have learned to breastfeed well, you can make your own decision about whether or not to offer a pacifier.

How do I know that my baby is getting enough milk from breastfeeding?

In the first few days, when you're in the hospital your baby should stay with you in your room if there are no complications with the delivery or with your baby's health. The baby will be sleepy. Don't expect the baby to wake you up when he or she is hungry. You will have to wake the baby every one to two hours to feed him or her. At first you will be feeding your baby colostrum, your first milk that is precious thick yellowish milk. Even though it looks like only a small amount, this is the only food your baby needs. In the beginning, you can expect your baby to lose some weight. This is very normal and is not from breastfeeding. As long as the baby doesn't lose more than 7 to 10% of his or her birth weight during the first three to five days, he is getting enough to eat.

You can tell your baby is getting enough milk by keeping track of the number of wet and dirty diapers. In the first few days, when your milk is low in volume and high in nutrients, your baby will have only 1 or 2 wet diapers a day. After your milk supply has increased, your baby should have 5 to 6 wet diapers and 3 to 4 dirty diapers every day. Consult your pediatrician if you are concerned about your baby's weight gain.

This chart shows the *minimum* amount of diapers for most babies.
It is fine if your baby has more.

Baby's Age	*Wet Diapers*	*Dirty Diapers Color and Texture*
Day 1 (birth)	1	Thick, tarry and black
Day 2	2	Thick, tarry and black
Day 3	3	Greenish yellow
Day 4	5 – 6	Greenish yellow
Day 5	5 – 6	Seedy, watery mustard color
Day 6	5 – 6	Seedy, watery mustard color
Day 7	5 - 6	Seedy, watery mustard color

After you and your baby go home from the hospital, your baby still needs to eat about every one to two hours and should need several diaper changes. You still may need to wake your baby to feed him or her because babies are usually sleepy for the first month. If you are having a hard time waking your baby, you can try undressing or wiping his or her face with a cool washcloth. As your milk comes in after the baby is born, there will be more and more diaper changes. The baby's stools will become runny, yellowish, and may have little white bumpy "seeds."

Overall, you can feel confident that your baby is getting enough to eat because your breasts will regulate the amount of milk your baby needs. If your baby needs to eat more or more often, your breasts will increase the amount of milk they produce. To keep up your milk supply when you give bottles of expressed breast milk for feedings, pump your milk when your baby gets a bottle of breast milk.

Will my partner be jealous if I breastfeed?

If you prepare him in advance, your partner should not be jealous. Explain that you need his support. You can tell him the important benefits of breastfeeding. Tell him he won't make bottles, so he'll get more rest. Be sure to emphasize how much money he'll save too. Tell him it will cost over $300 a month to pay for formula — money that could go to bills, savings, or a vacation. You can tell him that breastfeeding will give his child the best start at life, with benefits that can last well into childhood. He can help with changing and burping the baby, sharing chores and by simply sitting with you and the baby to enjoy the special mood that breastfeeding creates.

More information on Family Support:
www.4woman.gov/breastfeeding/bf.cfm?page=239

June 2004

BENEFITS OF BREASTFEEDING

There are many benefits to breastfeeding. Even if you are able to do it for only a short time, your baby's immune system can benefit from breast milk. Here are many other benefits of breast milk for a mother, her baby, and others:

HEALTH BENEFITS FOR MOM AND BABY INCLUDE:

Enhanced Immune System and Resistance to Infection

- Breast milk has agents (called antibodies) in it to help protect infants from bacteria and viruses. Recent studies show that babies who are exclusively breastfed for 6 months are less likely to develop ear infections, diarrhea, respiratory illnesses, and may be less likely to develop childhood obesity.
- Because breastfed babies are sick less often they have fewer visits to health care providers.
- Breastfed infants' immune systems (the system that helps fight infection) have a better response to immunizations like polio, tetanus, diphtheria, and Haemophilus influenzae, and to respiratory syncytial virus infection, a common infant respiratory infection.
- When you breastfeed, there are no bottles and nipples to sterilize. Human milk straight from the breast is always sterile (or clean).

Nutrition and Growth Benefits

- Breast milk is the most complete form of nutrition for infants. A mother's milk has just the right amount of fat, sugar, water, and protein that is needed for a baby's growth and development. Most babies find it easier to digest breast milk than they do formula.
- As a result, breastfed infants grow exactly the way they should. They tend to gain less unnecessary weight and to be leaner. This may result in being less overweight later in life.
- Premature babies do better when breastfed compared to premature babies who are fed formula.
- Although researchers are not certain, results from some studies show that breastfed children have greater brain development than non-breastfed children.

Improved Health of Mother

- Nursing uses up extra calories, making it easier to lose the pounds of pregnancy. It also helps the uterus to get back to its original size and lessens any bleeding a woman may have after giving birth.

- Breastfeeding, especially exclusive breastfeeding (no supplementing with formula) delays the return of normal ovulation and menstrual cycles. (However, you should still talk with your health care provider about contraceptive choices.)
- Breastfeeding lowers the risk of breast and ovarian cancers.

EMOTIONAL BENEFITS INCLUDE:

Convenience and Making Your Life Easier

- Breastfeeding saves time and money. You do not have to purchase, measure, and mix formula. There are no bottles to warm in the middle of the night!
- A mother can give her baby immediate satisfaction by providing her breast milk when the baby is hungry.
- Breastfeeding requires a mother to take some quiet relaxed time for herself and her baby.

Positive Feelings

- Breastfeeding can help a mother to bond with her baby. Physical contact is important to a newborn and can help them feel more secure, and warm and comforted.
- Breastfeeding mothers may have increased self-confidence and feelings of closeness and bonding with their infants.

SOCIETAL BENEFITS INCLUDE:

- Breastfeeding saves on health care costs. Total medical care costs for the nation are lower for fully breastfed infants than never-breastfed infants since breastfed infants typically need fewer sick care visits, prescriptions, and hospitalizations.
- Breastfeeding contributes to a more productive workforce. Breastfeeding mothers miss less work, as their infants are sick less often. Employer medical costs also are lower and employee productivity is higher.
- Breastfeeding is better for our environment because there is less trash and plastic waste compared to that produced by formula cans and bottle supplies.

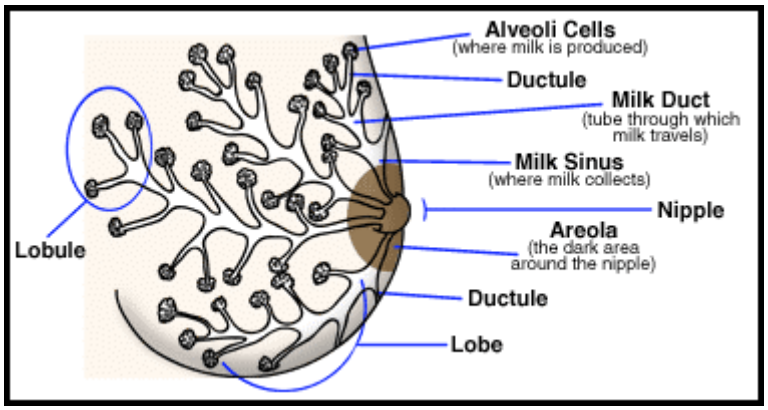
Text last updated November 2004

BREASTFEEDING KNOW HOW

How Breast Milk is Made

Anatomy of the Breast

Knowing how the breast is made and how it works to produce milk is helpful in understanding the breastfeeding process. The breast actually begins developing in the first few weeks of gestation, before birth. But the mammary gland, the gland that produces milk, does not become fully functional until lactation begins. When a woman's breasts become swollen during pregnancy, this is a sign that the mammary gland is getting ready to work. The breast itself is a gland that is composed of several parts, including glandular tissue, connective tissue, blood, lymph, nerves, and fatty tissue. Fatty tissue is what mostly affects the size of a woman's breast. Breast size does not have an effect on the amount of milk or the quality of milk a woman produces.



Anatomy of the Breast

Milk is secreted from the **alveoli cells**. When the alveoli cells are stimulated by a hormone, they contract and push the milk into the **ductules** and down into larger **mammary ducts.** These mammary ducts are underneath the **nipple** and **areola** and widen to collect the milk. These widened ducts are called **milk** or **lactiferous sinuses**. When the baby's gums press on the areola and nipple, it is the lactiferous sinuses that are being compressed, squeezing the milk into the baby's mouth. The nipple tissue protrudes and becomes firmer with stimulation, which makes it more flexible and easier for the baby to grasp in the mouth. In the diagram, you can see that each mammary gland forms a lobe in the breast. Each lobe consists of a single branch of alveoli, milk ducts, and a lactiferous sinus that narrows into an opening in the nipple. Each breast has about 15 to 25 lobes.

The Role of Hormones

Hormones play a key role in breastfeeding. The increase of **estrogen** during pregnancy stimulates the ductules to grow. After delivery, estrogen levels drop and remain low in the first several months of breastfeeding. The increase of **progesterone** during pregnancy also causes the alveoli and lobes to grow. **Prolactin**, also called the "mothering hormone," is another hormone that is increased during pregnancy and adds to the growth of breast tissue. Prolactin levels also rise during feedings as the nipple is stimulated. As prolactin is released from the brain into the mother's bloodstream during breastfeeding, alveolar cells respond by making milk. **Oxytocin** is the other hormone that plays a vital role because it is necessary for the **let-down,** or **milk-ejection reflex** to occur. It stimulates the alveoli cells to contract so the milk can be pushed down into the ducts. Oxytocin also contracts the muscle of the uterus during and after birth, which helps the uterus to get back to its original size and lessens any bleeding a woman may have after giving birth. The release of both prolactin and oxytocin may be responsible in part for a mother's intense feeling of needing to be with her baby.

Tips for Making It Work

Breastfeeding can be a wonderful experience for you and your baby. It's important not to get frustrated if you are having problems. What works for one mother and baby may not work for another, so just focus on finding a comfortable routine and positions for you and your baby. Here are some tips for making it work:

Get an early start. You should start nursing as early as you can after delivery (within an hour or two if it is possible), when your baby is awake and the sucking instinct is strong. At first your breasts contain a kind of milk called colostrum, which is thick and usually yellow or golden in color. Colostrum is gentle to your baby's stomach and helps protect your baby from disease. Your milk supply will increase and the color will change to a bluish-white color during the next few days after your baby's birth.

Use proper positioning for baby's mouth and when holding baby.

- Support your breast with your thumb on top and four fingers underneath. Keep your fingers behind the areola (the darker skin around the nipple). You may need to support your breast during the whole feeding, especially in the early days or if your breasts are large.
- Brush or tickle your baby's lips with your nipple to encourage the baby's mouth to open wide.
- Hug the baby in close with his or her whole body facing yours. Your baby will take a mouthful of all of the nipple and most of the areola. The baby should never be latched onto the nipple only.
- Look for both of your baby's lips to be turned out (not tucked in or under) and relaxed. If you can't tell if the lower lip is out, press gently on the lower chin to pull the lower lip out. The tongue should be cupped under your breast.

- You may see your baby's jaw move back and forth and hear low-pitched swallowing noises. Your baby's nose and chin may touch your breast.
- Breastfeeding should not hurt. If it hurts, take the baby off of your breast and try again. The baby may not be latched on right. Break your baby's suction to your breast by gently placing your finger in the corner of his/her mouth.

HOW TO BRING BABY TO BREAST:

Tickle baby's lips to encourage him to open wide.

When open wide, pull him onto the breast chin first.

When baby is latched on well, his/her nose and chin touch your breast.

PROPER POSITION OF BABY'S MOUTH AROUND NIPPLE

Note that baby's lips are around the nipple AND the areola, and the nose and chin are touching the breast. Baby's lips are turned out or "flanged," not tucked in.

BREASTFEEDING POSITIONS

Here are some positions in which you can hold your baby while breastfeeding. You can choose the one(s) that you and your baby feel most comfortable in. No matter which one you choose, make sure your baby's mouth is near your nipple and he/she doesn't have to turn his/her head to breastfeed. For most positions, your baby should be on his/her side with his/her whole body facing yours. This helps him/her to properly "latch on" to the nipple. Try using pillows under your arms, elbows, neck or back, or under the baby for support.

1. **Cradle Hold**
(This is a commonly used position that is comfortable for most mothers. Hold your baby with his head on your forearm and his/her whole body facing yours.)

2. **Cross Cradle or Transitional Hold** This is good for premature babies or babies who are having problems latching on. Hold your baby along the opposite arm from the breast you are using. Support baby's head with the palm of your hand at the base of his/her neck.	
3. **Clutch or "Football" Hold** This is good for mothers with large breasts or inverted nipples. Hold your baby at your side, lying on his/her back, with his/her head at the level of your nipple. Support baby's head with the palm of your hand at the base of his/her head.	
4. **Side-Lying Position** This allows mother to rest or sleep while baby nurses. Good for mothers who had a Cesarean birth. Lie on your side with your baby facing you. Pull baby close and guide his/her mouth to your nipple.	

Nurse on demand. Newborns need to nurse often. Breastfeed at least every 2 hours and when they show signs of hunger, such as being more alert or active, mouthing (putting hands or fists to mouth and making sucking motion with mouth), or rooting (turning head in search of nipple). Crying is a late sign of hunger. Most newborn babies want to breastfeed about 8 to 12 times in 24 hours.

Feed your baby only breast milk. Nursing babies don't need water, sugar water or formula. Breastfeed exclusively for about the first six months. Giving other liquids reduces the baby's intake of vitamins from breast milk.

Delay artificial nipples (bottle nipples and pacifiers). A newborn needs time to learn how to breastfeed. It is best to wait until the newborn develops a good sucking pattern before giving her or him a pacifier. Artificial nipples require a different sucking action than real ones. Sucking at a bottle can also confuse some babies when they are first learning how to breastfeed. If, after birth, your baby needs to be taken away from you for a length of time and has to be given formula, ask the nurse to use a syringe or cup when feeding him/her to avoid nipple confusion.

Breastfeed your sick baby during and after illness. Oftentimes sick babies will refuse to eat but will continue to breastfeed. Breast milk will give your baby needed nutrients and prevent dehydration.

Air dry your nipples. Right after birth, until your nipples toughen, air-dry them after each nursing to keep them from cracking. Cracking can lead to infection. If your nipples do crack, coat them with breast milk or a natural moisturizer, such as lanolin, to help them heal. It isn't necessary to use soap on your nipples, and it may remove helpful natural oils that are secreted by the montgomery glands, which are in the areola. Soap can cause drying and cracking and make the nipple more prone to soreness.

Watch for infection. Signs of breast infection include fever, irritation, and painful lumps and redness in the breast. You need to see a health care provider right away if you have any of these symptoms.

Promptly treat engorgement. It is normal for your breasts to become larger, heavier, and a little tender when they begin making greater quantities of milk on the 2nd to 6th day after birth. This normal breast fullness may turn into engorgement. When this happens, you should feed the baby often. Your body will, over time, adjust and produce only the amount of milk your baby needs. To relieve engorgement, you can put warm, wet washcloths on your breasts and take warm baths before breastfeeding. If the engorgement is severe, placing ice packs on the breasts between nursings may help. Talk with a health care provider if you have problems with breast engorgement.

Eat right and get enough rest. You may be thirstier and have a bigger appetite while you are breastfeeding. Drink enough non-caffeinated beverages to keep from being thirsty. Making milk will use about 500 extra calories a day. Women often try to improve their diets while they are pregnant. Continuing with an improved diet after your baby is born will help you stay healthy. But, even if you don't always eat well, the quality of your milk won't change much. Your body adjusts to make sure your baby's milk supply is protected. Get as much rest as you can. This will help prevent breast infections, which are worsened by fatigue.

If you are on a strict vegetarian diet, you may need to increase your vitamin B12 intake and should talk with your health care provider. Infants breastfed by women on this type of diet can show signs of not getting enough vitamin B12.

Getting Enough Milk

Most new mothers are concerned about their babies getting enough milk. In the first few days, when you're in the hospital your baby should stay with you in your room if there are no complications with the delivery or with your baby's health. The baby will be sleepy. Don't expect the baby to wake you up when he or she is hungry. You will have to wake the baby every one to two hours to feed him or her. At first you will be feeding your baby colostrum, your first milk that is precious thick yellowish milk. Even though it looks like only a small amount, this is the only food your baby needs. In the beginning, you can expect your baby to lose some weight. This is very normal and is not from breastfeeding. As long as the baby doesn't lose more than 7 to 10% of his or her birth weight during the first three to five days, he is getting enough to eat.

You can tell your baby is getting enough milk by keeping track of the number of wet and dirty diapers. In the first few days, when your milk is low in volume and high in nutrients, your baby will have only 1 or 2 wet diapers a day. After your milk supply has increased, your baby should have 5 to 6 wet diapers and 3 to 4 dirty diapers every day. Consult your pediatrician if you are concerned about your baby's weight gain.

This chart shows the *minimum* amount of diapers for most babies.
It is fine if your baby has more.

Baby's Age	*Wet Diapers*	*Dirty Diapers Color and Texture*
Day 1 (birth)	1	Thick, tarry and black
Day 2	2	Thick, tarry and black
Day 3	3	Greenish yellow
Day 4	5 – 6	Greenish yellow
Day 5	5 – 6	Seedy, watery mustard color
Day 6	5 – 6	Seedy, watery mustard color
Day 7	5 - 6	Seedy, watery mustard color

After you and your baby go home from the hospital, your baby still needs to eat about every one to two hours and should need several diaper changes. You still may need to wake your baby to feed him or her because babies are usually sleepy for the first month. If you are having a hard time waking your baby, you can try undressing or wiping his or her face with a cool washcloth. As your milk comes in after the baby is born, there will be more and more diaper changes. The baby's stools will become runny, yellowish, and may have little white bumpy "seeds."

Overall, you can feel confident that your baby is getting enough to eat because your breasts will regulate the amount of milk your baby needs. If your baby needs to eat more or more often, your breasts will increase the amount of milk they produce. To keep up your milk supply when you give bottles of expressed breast milk for feedings, pump your milk when your baby gets a bottle of breast milk.

Other signs that your baby is getting enough milk are:

- Steady weight gain, after the first week of age. From birth to three months, typical weight gain is four to eight ounces per week.
- Pale yellow urine, not deep yellow or orange.
- Sleeping well, yet baby is alert and looks healthy when awake.

Remember that the more often and effectively a baby nurses, the more milk there will be. Breasts produce and supply milk directly in response to the baby's need or demand.

Problems

If you are still having problems breastfeeding after following these tips, it is important to talk with your health care provider or a breastfeeding support person such as a peer counselor or lactation consultant.

June 2004

HOW LIFESTYLE AFFECTS BREAST MILK

Your lifestyle can have an affect on your breast milk, and therefore on your baby. It's important to take care of yourself so you can provide the best care to your baby. This includes getting enough rest and proper nutrition so you have enough energy to take care of your baby and avoid illness. Some women think that when they are sick, they should not breastfeed. But, most common illnesses, such as colds, flu, or diarrhea, can't be passed through breast milk. In fact, if you are sick, your breast milk will have antibodies in it. These antibodies will help protect your baby from getting the same sickness. Here are some other lifestyle issues that affect breast milk:

Viruses

A few viruses can pass through breast milk. HIV, the virus that causes AIDS, is one of them. If you are HIV positive you should not breastfeed. Also, Hepatitis C may be transmitted through breast milk, but it is not certain. However, bleeding or cracked nipples on the breast of a woman with Hepatitis C puts a breastfeeding infant at higher risk for getting the virus.

Diet

Nutrition

If you generally have a good diet, you will produce healthy breast milk for your baby, even if you don't eat well at times. But, chronically undernourished women who have had diets very low in vitamins and minerals, and low stores in their bodies may produce milk that is lower than normal in some vitamins, especially vitamins A, D, B6, or B12. These breastfeeding mothers can help the vitamin levels in their milk return to normal by improving their diets or by taking vitamin supplements. It is recommended that nursing mothers take in about 2700 calories every day (about 500 calories more than a non-pregnant, non-nursing woman). For more information on having a healthy diet, see the Dietary Guidelines for Americans (www.health.gov/dietaryguidelines).

Fluids

Many women think they have to drink a lot of fluids to have a good milk supply. This is actually untrue. You do, however, need to drink enough fluids to stay well hydrated for your own health and strength to give your baby the best care you can. Always drink when you are thirsty, which is your body's signal that you need fluid. You can make it easy to remember to get enough fluid if you drink a glass of water or a nutritious beverage (milk or juice) every time you feed your baby.

Caffeine

Many breastfeeding women wonder about how caffeine will affect their baby. Results from studies show that, while excessive caffeine intake (more than five 5 ounce cups of coffee per day) can cause the baby to be fussy and not able to sleep well, moderate caffeine intake (fewer than five 5 ounce cups) usually doesn't cause a problem for most breastfeeding babies.

Allergies

Sometimes a baby may have a reaction to something you eat (like spicy foods, foods that can cause gas, or dairy products). Symptoms of an allergy to something in your diet include diarrhea, rash, fussiness, gas, dry skin, green stools with mucus, or the baby pulling up his/her knees and screaming. This doesn't mean the baby is allergic to your milk. If you stop eating whatever is bothering your baby, the problem usually goes away on its own.

Here's how to tell if something you are eating is upsetting your baby:
Remember: It takes about two to six hours for your body to digest and absorb the food you eat and pass it into your breast milk.

> So, if you eat dinner at 5:00 P.M., and your baby shows the symptoms listed above around 9:00 P.M., think about what you ate for dinner. To be sure if those foods are causing the problem, you will have to eat them again and see if he/she has the same reaction.
>
> If your baby seems very fussy, try keeping a record of what you eat and drink.
>
> Bring the record to your health care provider to talk about a possible link between certain foods and your baby's symptoms.
>
> If you think a particular food is causing a problem, stop eating it for a while and see if your baby reacts better. You can always try later to introduce that food again into your diet in small amounts. If your baby doesn't seem to react to it anymore, you could add more the next time.

Sometimes a baby can be born with a condition called primary lactase deficiency or with galactosemia, in which he or she can't tolerate breast milk. This happens when the body can't break down lactose, a sugar found in the milk of humans and animals. Symptoms include diarrhea and vomiting. Babies with severe galactosemia may have liver problems, malnutrition, or mental retardation. Babies with these conditions must be fed formula that comes from plants, such as soy milk or a special galactose-free formula.

Smoking, Drugs and Alcohol

Smoking

Nursing mothers should not smoke or take drugs. Tobacco from cigarettes contains a drug called nicotine, which transfers to breast milk and may even affect the amount of milk you produce. The risk for **sudden infant death syndrome (SIDS)** becomes greater when a mother smokes or when the baby is around second-hand (or passive) smoke. Smoking and passive smoke may also increase respiratory and ear infections in babies. If you smoke and are breastfeeding, talk to your health care provider about what you can do to quit smoking. If you can't quit, breastfeeding still is best because the benefits of breast milk still outweigh the risks from nicotine.

Illegal Drugs

Some drugs, such as cocaine and PCP, can make the baby high. Other drugs, such as heroin and marijuana can cause irritability, poor sleeping patterns, tremors, and vomiting. Babies can become addicted to these drugs.

Alcohol

Alcohol does get to your baby through breast milk, and has been found to peak in its concentration about 30 to 60 minutes after drinking, or 60 to 90 minutes if it is taken with food. The effects of alcohol on the breastfeeding baby are directly related to the amount of alcohol a mother consumes. Moderate to heavy drinking (2 or more alcoholic drinks per day) can interfere with the let-down reflex and the milk-ejection reflex. It also can harm the baby's motor development and cause slow weight gain. For this reason, and for the general health of the mother, if alcohol is used, intake should be limited. Light drinking by a breastfeeding mother has not been found to be harmful to a breastfeeding baby. If you know that you are going to have alcohol, such as some wine with dinner, you can pump your milk beforehand to give to your baby after you have had the alcohol. Then pump and discard the milk that is most affected by the drink(s).

Medications

Always talk with your health care provider before taking any medications. Most medications pass into your milk in small amounts. If you take medication for a chronic condition such as high blood pressure, diabetes or asthma, your medication may already have been studied in breastfeeding women, so you should be able to find information to help you make an informed decision with the help of your health care provider. Newer medications and medications for rare disorders may have less information available. The American Academy of Pediatrics has information about many prescription and over-the-counter medications posted on their web site at: www.aap.org.

In general, when breastfeeding it is safe to take:

acetaminophen (like Tylenol)

antibiotics

epilepsy medications (although one, *Primidone*, should be taken with caution — talk with your health care provider about this drug)

most antihistamines

moderate amounts of caffeine (remember there is caffeine in soda and candy bars)

decongestants

ibuprofen (like Advil)

insulin

quinine

thyroid medicines

progestin-only birth control pills (the "mini-pill")

Medications that are not safe to take when breastfeeding:
Some drugs can be taken by a nursing mother if she stops breastfeeding for a few days or weeks. She can pump her milk and discard it during this time to keep up her supply. During this time, the baby can drink her previously frozen breast milk or formula. These drugs include ***radioactive drugs*** used for some diagnostic tests like Gallium-67, Copper 64, Indium 111, Iodine 123, Iodine125, Iodine-131, radioactive sodium, or Technetium-99m, ***antimetabolites***, and a few ***cancer chemotherapy agents***.

There are drugs that if new mothers have to take them, they need to choose between taking them or breastfeeding. **Some of these drugs that should never be taken while breastfeeding include:**

Bromocriptine (Parlodel) — a drug for Parkinson's disease, it also decreases a woman's milk supply.

Cyclophosphamide, Doxorubicin, and most chemotherapy drugs for cancer — these drugs kill cells in the mother's body and may harm the baby.

Ergotamine (for migraine headaches); Methotrexate (for arthritis); and Cyclosporine (for severe arthritis and psoriasis, aplastic anemia, Crohn's disease, kidney disease, and for after organ transplant surgery).

Drugs whose effects on nursing infants is not known but may be cause for concern include:

Antianxiety drugs — Alprazolam, Diazepam, Lorazepam, Midazolam, Perphenazine, Prazepam, Quazepam, Temazepam.

Antidepressant drugs — Amitriptyline, Amoxapine, Bupropion, Clomipramine, Desipramine, Dothiepin, Doxepin, Fluoxetine, Fluvoxamine, Imipramine, Nortriptyline, Paroxetine, Sertraline,Trazodone.

Antipsychotic drugs — Chlorpromazine Galactorrhea, Chlorprothixene, Clozapine, Haloperidol, Mesoridazine, Trifluoperazine.

Other drugs — Amiodarone, Chloramphenicol, Clofazimine, Lamotrigine, Metoclopramide, Metronidazole, Tinidazole.

June 2004

COPING WITH BREASTFEEDING CHALLENGES

Some women breastfeed without problems. But for many women, it is natural for minor problems to arise at first, especially if it is their first time breastfeeding. The good news is that most problems can be overcome with a little help and support. Some more serious problems may require you to see your health care provider, and it is important to know the warning signs for these situations. The following section discusses some of the most common problems that can arise posing a challenge to breastfeeding, and some solutions to overcome them.

1. Challenge: Sore Nipples

Poor latch-on and positioning are the major causes of sore nipples because the baby is probably not getting enough of the areola into his or her mouth, and is sucking mostly on the nipple. If you have sore nipples you are more likely to postpone feedings because of the pain, but this can lead to your breasts becoming overly full or engorged, which can then lead to plugged **milk ducts** in the breast. If your baby is latched on correctly and sucking effectively, he/she should be able to nurse as long as he/she likes without causing any pain. **REMEMBER: IF IT HURTS, TAKE THE BABY OFF OF YOUR BREAST AND TRY AGAIN.**

In order to prevent challenges from arising, remember the three most important things about breastfeeding:

1. Nurse early and often
2. Nurse with the nipple and areola in the baby's mouth, not just the nipple.
3. Breastfeed on demand.

Solution:

Check the positioning of your baby's body and the way she latches on and sucks. You should find that it feels better right away once the baby is positioned correctly.

Don't delay feedings, and try to relax so your let-down reflex comes easily. You also can hand-express a little milk before beginning the feeding so your baby doesn't clamp down harder, waiting for the milk to come.

If your nipples are very sore, it can help to change positions each time you nurse. This puts the pressure on a different part of the nipple.

After nursing, you can also express a few drops of milk and gently rub it on your nipples. Human milk has natural healing properties and emollients to soothe them. Also try letting your nipples air-dry after feeding, or wear a soft-cotton shirt.

Wearing a **nipple shield** during nursing will not relieve sore nipples. They actually can prolong soreness by making it hard for the baby to learn to nurse without the shield.

Avoid wearing bras or clothes that are too tight and put pressure on your nipples.

Change nursing pads often to avoid trapping in moisture.

Avoid using soap or ointments that contain astringents or other chemicals on your nipples. Make sure to avoid products that must be removed before nursing. Washing with clean water is all that is necessary to keep your nipples and breasts clean.

Making sure you get enough rest, eating healthy foods, and getting enough fluids also can help the healing process. If you have very sore nipples, you can ask your health care provider about using non-aspirin pain relievers.

If your sore nipples last or you suddenly get sore nipples after several weeks of unpainful nursing, you could have a condition called *thrush*, a fungal infection that can form on your nipples from the milk. Other signs of thrush include itching, flaking and drying skin, tender or pink skin. The infection can form in the baby's mouth from having contact with your nipples, and it appears as little white spots on the inside of the cheeks, gums, or tongue. It also can appear as a diaper rash on your baby that won't go away by using regular diaper rash ointments. If you have any of these symptoms or think you have thrush, contact your health care provider. You can get medication for your nipples and for your baby.

IMPORTANT: If you still have sore nipples after following the above tips, you may need to see someone who is trained in teaching breastfeeding, like a lactation consultant or peer counselor.

2. Challenge: Normal Fullness versus Engorgement (Sore Breasts)

Anything that reduces the amount of time your baby is at your breast or postpones regular nursing can cause overly full or engorged breasts. A breastfeeding mother usually feels a normal fullness (slight heaviness that is not painful) in her breasts, especially in the first couple of days when her milk comes in. But overly full or engorged breasts can be very painful and feel very hard. You also may have breast swelling, tenderness, warmth, redness, throbbing and flattening of the nipple. Engorgement sometimes also causes a low-grade fever and can be confused with a breast infection. Engorgement is the result of the milk building up, and usually happens during the third to fifth day after birth. This slows circulation and when blood and lymph move through the breasts, fluid from the blood vessels can seep into the breast tissues. All of the following can contribute to engorgement:

poor latch-on or positioning

trying to limit feeding times or infrequent feedings

giving supplementary bottles of water, juice, formula, or breast milk

overusing a pacifier

changing the breastfeeding schedule to return to work or school

the baby changes the nursing pattern by beginning to sleep through the night or breastfeed more often during one part of the day and less often at other times

having a baby that has a weak suck who is not able to nurse effectively

fatigue, stress, or anemia in the mother

an overabundant milk supply

nipple damage

breast abnormalities

Engorgement can lead to plugged ducts or a breast infection, so it is important to try to prevent it before this happens. If treated properly, engorgement should only usually last for one to two days.

Solution:

Minimize engorgement by making sure the baby is latched on and positioned correctly at the breast, and nurse frequently after birth. Allow the baby to nurse as long as he/she likes, as long as he/she is latched on well and sucking effectively. In the early days when your milk is coming in, you should awaken a sleepy baby every 2 to 3 hours to breastfeed. Breastfeeding often on the affected side helps to remove the milk, keep it moving freely, and prevent the breast from becoming overly full.

Avoid supplementary bottles and overusing pacifiers.

Try hand expressing or pumping a little milk to first soften the breast, areola, and nipple before breastfeeding, or massage the breast and apply heat.

Cold compresses in between feedings can help ease pain. Some women use cabbage leaves to soothe engorgement. Although their effectiveness has not been proven, many women find them soothing. You can use either refrigerated or room temperature leaves. Make sure to cut a hole for your nipple, apply the leaves directly to your breasts, and wear them inside your bra. Remove them when they wilt and replace with fresh leaves.

If you are returning to work, try to pump your milk on the same schedule that the baby breastfed at home.

Get enough rest and proper nutrition and fluids.

Also try to wear a well-fitting, supportive bra that is not too tight.

IMPORTANT: If your engorgement lasts for more than 2 days even after treating it, contact your health care provider.

3. Challenge: Plugged Ducts versus Breast Infection (Mastitis)

It is common for many women to have a plugged duct in the breast during the period she breastfeeds. A plugged milk duct feels tender, sore, or like a lump in the breast. It is not accompanied by a fever or other symptoms. It happens when a milk duct does not properly drain, becomes inflamed, pressure builds up behind the plug, and surrounding tissue becomes inflamed. A plugged duct usually only occurs in one breast.

A breast infection (mastitis), on the other hand, is soreness or a lump in the breast that is accompanied by a fever and/or flu-like symptoms, such as feeling run down or very achy. Some women with a breast infection also have nausea and vomiting. You also may have yellowish discharge from the nipple that looks like colostrum, or the breasts feel warm or hot to the touch. A breast infection can occur when other family members have a cold or the flu, and like a plugged duct, it usually only occurs in one breast.

Solution:

Treatment for plugged ducts and breast infections is similar.

Soreness can be relieved by applying heat to increase circulation to the sore area and to speed its healing. You can use a heating pad or a small hot-water bottle. It also helps to massage the area, starting behind the sore spot. Use your fingers in a circular motion and massage toward the nipple.

Breastfeed often on the affected side. This helps loosen the plug, keeps the milk moving freely, and the breast from becoming overly full. Nursing every two hours, both day and night on the affected side first can be helpful.

Rest. Getting extra sleep or relaxing with your feet up can help speed healing. Often a plugged duct or breast infection is the first sign that a mother is doing too much and becoming overly tired.

Wear a well-fitting supportive bra that is not too tight, since this can constrict milk ducts.

IMPORTANT: If you do not feel better within 24 hours of trying these steps, and you still have a fever or your symptoms worsen, call your health care provider. You may need an antibiotic. Also, if you have a breast infection in which both breasts look affected, or there is pus or blood in the milk, red streaks near the area, or your symptoms came on severe and suddenly, see your health care provider right away.

Even if you need an antibiotic, continuing to breastfeed during treatment is best for both you and your baby. Most antibiotics will not affect your baby through your breast milk.

4. Challenge: Thrush

Thrush (yeast) is a fungal infection that can form on your nipples or in your breast because it thrives on milk. The infection forms from an overgrowth of the *candida* organism. Candida usually exists in our bodies and is kept at healthy levels by the natural bacteria in our bodies. However, when the natural balance of bacteria is upset, candida can overgrow, causing an infection. Things that can cause thrush include: having an overly moist environment on your skin or nipples that are sore or cracked, taking antibiotics or birth control pills, having a diet that contains large amounts of sugar or foods with yeast, or having a chronic illness like HIV infection, diabetes, or anemia.

If you have sore nipples that last more than a few days even after you make sure your baby's latch and positioning is correct, or you suddenly get sore nipples after several weeks of unpainful nursing, you could have thrush. Some other signs of thrush include itching or burning nipples which may look normal or may appear pink or red, shiny, flaky, or have a rash with tiny blisters. You also could have shooting pains in the breast during or after feedings. The infection also can form in the baby's mouth from having contact with your nipples, and appear as little white spots on the inside of the cheeks, gums, or tongue. It also can appear as a diaper rash (small red dots around a rash) on your baby that won't go away by using regular diaper rash ointments.

Solution:

If you or your baby have any of these symptoms, contact your health care provider so you and your baby can be diagnosed.

You can get medication for your nipples and for your baby. Medication for the mother is usually an ointment for the nipples, and the baby can be given a liquid medication for his/her mouth, and/or an ointment for the diaper rash.

Thrush may take several weeks to cure, so it is important to try not to spread it. Don't freeze milk that you pump while you have thrush. Change disposable nursing pads often and wash any towels or clothing that come in contact with the yeast in very hot water (above 122° F). Also wash the baby's toys in hot soapy water if he puts them in his/her mouth while he has thrush.

Wear a clean bra every day.

Wash your hands often, and wash your baby's hands often, especially if he or she sucks on his/her fingers.

If used, boil pacifiers, bottle nipples, or teethers once a day for 20 minutes to kill the thrush. After one week of treatment, discard them and buy new ones.

Boil daily for 20 minutes all breast pump parts that touch the milk.

Make sure other family members are free of thrush or other fungal infections. If they have symptoms, get them treatment.

5. Challenge: Nursing Strike

A nursing strike is when your baby has been nursing well for months, then suddenly loses interest in breastfeeding and begins to refuse the breast. A nursing strike can mean several things are happening with your baby and that she or he is trying to communicate with you to let you know that something is wrong. Not all babies will react the same to different situations that can cause a nursing strike. Some will continue to breastfeed without a problem, others may just become fussy at the breast, and others will refuse the breast entirely. Some of the major causes of a nursing strike include:

mouth pain from teething, a fungal infection like thrush, or a cold sore

an ear infection, which causes pain while sucking

pain from a certain nursing position, either from an injury on the baby's body or from soreness from an immunization

being upset about a long separation from the mother or a major change in routine

being distracted while nursing — becoming interested in other things around him or her

a cold or stuffy nose that makes breathing while nursing difficult

reduced milk supply from supplementing with bottles or overuse of a pacifier

responding to the mother's strong reaction if the baby has bitten her

being upset about hearing arguing or people talking in a harsh voice with other family members while nursing

reacting to stress, overstimulation, or having been repeatedly put off when wanting to nurse.

If your baby is on a nursing strike, it is normal to feel frustrated and upset, especially if your baby is unhappy. It is important not to feel guilty or that you have done something wrong. Your breasts also may become uncomfortable as the milk builds up.

Solution:

Try to express your milk on the same schedule as the baby used to breastfeed to avoid engorgement and plugged ducts.

Try another feeding method temporarily to give your baby your milk, such as a cup, dropper, or spoon. Keep track of your baby's wet diapers to make sure he/she is getting enough milk (five to six per day).

Keep offering your breast to the baby. If the baby is frustrated, stop and try again later. Try when the baby is sleeping or very sleepy.

Try various breastfeeding positions.

Focus on the baby with all of your attention and comfort him or her with extra touching and cuddling.

Try nursing while rocking and in a quiet room free of distractions.

Special Situations and Breastfeeding

Some babies are born with conditions that may interfere with or make breastfeeding more difficult. However, in all of the following cases, breastfeeding is still best for the baby to thrive.

Jaundice

Jaundice is a condition that is common in many newborns. It appears as a yellowing of the skin and eyes and is caused by an excess of *bilirubin*, a yellow pigment that is a product in the blood. All babies are born with extra red blood cells that undergo a process of being broken down and eliminated from the body. Bilirubin levels in the blood can be high because of higher production of it in a newborn, an increased ability of the newborn intestine to absorb it, and a limited ability of the newborn liver to handle large amounts of it. Many cases of jaundice do not need to be treated—a health care provider will careful monitor the baby's bilirubin levels. Sometimes infants have to be temporarily separated from the mother to receive special treatment with **phototherapy**. In these cases, breastfeeding may be discouraged and supplements or other fluids may be given to the baby. However, the American Academy of Pediatrics discourages against stopping breastfeeding in jaundiced babies and suggests continuing frequent breastfeeding, even during treatment. If your baby is jaundiced or develops jaundice, it is important to discuss with your health care provider all possible treatment options and share that you do not want to interrupt nursing (if this is at all possible).

Babies with Reflux

It is not unusual for babies spit up after nursing. Usually, babies can spit up and show no other signs of illness, and the spitting up disappears as the baby's digestive system matures. As long as the baby has six to eight wet diapers and at least two bowel movements in a 24 hour period (under six weeks of age), and your baby is gaining weight (at least 4 ounces a week) you can be assured your baby is getting enough milk.

However, some babies have a condition called *gastroesophageal reflux (GER)*, which occurs when the muscle at the opening of the stomach opens at the wrong times, allowing milk and food to come back up into the esophagus (the tube in the throat). Symptoms of GER can include:

severe spitting up, or spitting up after every feeding, or hours after eating

projectile vomiting, where the milk shoots out of the mouth

inconsolable crying as if in discomfort

arching of the back as if in severe pain

refusal to eat or pulling away from the breast during feeding

waking up frequently at night

slow weight gain

difficulty swallowing

gagging or choking

frequent red or sore throat

frequent hiccuping or burping

signs of **asthma**, **bronchitis**, **wheezing**, problems breathing, **pneumonia**, or **apnea**.

NOTE: Many healthy babies might have some of these symptoms and not have GER. But there are babies who might only have a few of these symptoms and have a severe case of GER. **Not all babies with GER spit up or vomit.**

Some babies with GER do not have a serious medical problem, but caring for them can be hard since they tend to be very fussy and wake up frequently at night. More severe cases of GER may need to be treated with medication if the baby, in addition to spitting up, also refuses to nurse, gains weight poorly or is losing weight, or has periods of gagging or choking.

If your baby spits up after every feeding and any of the other symptoms mentioned above, it is best to see your health care provider so your baby can be correctly diagnosed. Other than GER, your baby could have another condition that needs treatment. If there are no other signs of illness, he/she could just be sensitive to a food in your diet or a medication he/she's receiving. If your baby has GER, it is important to try to continue to breastfeed since breast milk still is more easily digested than formula. Try smaller, more frequent feedings, thorough burping, and putting the baby in an upright position during and after feedings.

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BREASTFEEDING MADE EASIER AT HOME AND AT WORK

Breastfeeding is a unique experience for each woman and her baby, and each woman has to find her own routine, setting, and positions that work best. Today, many mothers return to jobs outside of their homes after their babies are born, and the breastfeeding routine that they've set up while on maternity leave has to change. Many women continue to breastfeed successfully though, with the help of a breast pump. Whether you choose to stay at home to care for your baby, or choose to return to a job outside your home, here are some tips about breastfeeding and pumping to make breastfeeding easier and safe for you and your baby.

Before Your Baby is Born

Nipple Type

Before your baby is born, it is helpful to know what type of nipples you have. A *flat nipple* lies flat against the areola (darker circular area around the nipple) instead of protruding outward like a normal nipple. *Inverted nipples* seem pushed inward to the areola. Both flat nipples and inverted nipples can make correct latch-on more challenging for your baby since they are not easy for the baby to grab in his or her mouth. One solution is to wear a *breast shell* (a round plastic shell that fits around your breast) in your bra to create a moist environment around the nipple to help it protrude for easier latch-on.

Regular, flat, and inverted nipples

Medications

Before the birth of your baby, know what medications you are taking or may have to take after the birth, and how they will affect your baby through your breast milk. Talk with your health care provider about their safety, and about possible alternative treatments that won't affect the baby. While breastfeeding, if you become ill and have to take medication, tell your health care provider that you are breastfeeding. It may be possible to temporarily pump and discard your breast milk while taking the medication. During this time, you can use previously stored breast milk or formula to feed your baby, but you will be keeping your breast milk supply at a level that will meet the baby's needs when your treatment is over.

Family Support

Fathers and other special support persons can be involved in the breastfeeding experience. Breastfeeding is more than a way to feed a baby, it becomes a lifestyle. While no one but the baby's mother can provide breast milk, it is helpful for the mother and the baby if the father or support person encourages this healthy relationship. Fathers or support persons play a major role in the breastfeeding experience by being sensitive and supportive. They can encourage breastfeeding when the mother is feeling tired or discouraged. They can affirm their love, approval, and appreciation for the mother's work and time that she puts into breastfeeding. They also can be good listeners and provide understanding to the mother's and baby's needs to accommodate breastfeeding in the home or when traveling. All of this support helps the mother feel better about herself and proud that she is giving her baby the best. Many people also feel warmth, love, and relaxation just from sitting next to mother and baby during breastfeeding. Fathers and support persons also can help when the mother begins to wean the baby from breastfeeding by giving emotional nourishment to the child through playing, cuddling, and giving a bottle/cup.

Pumping

No matter what type of job you have, if you go back to work after having your baby, it should be possible for you to take time to pump your breast milk. You can talk with your employer about why breastfeeding is important, why pumping is necessary, and how you plan to fit pumping into your work schedule. Pumping while away from your baby on the same schedule that he or she breastfeeds ensures that you keep up your milk supply to meet your baby's needs. If you are staying home to care for your baby, having an effective pump at home is also helpful. You can use it to help relieve engorgement, especially when your milk supply first comes in, or for when you need to be away from your baby for any amount of time, such as an evening out with your partner. If you have to temporarily take medication that may harm your baby, you can pump and discard your milk during this time.

Prepare for pumping *before* you go back to work. Let your employer know that you are breastfeeding and explain that, when you're away from your baby, you will need to take breaks throughout the day to pump your milk to give to your baby at a later time. Ask where you can pump at work, and make sure it is a private, clean, quiet area. Also make sure you have somewhere to store the milk. Discuss how you plan to fit pumping into your workday. You can offer to work out a different schedule, such as coming in earlier or leaving a little later each day to make up for any lost work time, if this comes up as an issue. If your day care is close by to your job, you may be able to arrange to breastfeed your baby during work time. Make sure to discuss the benefits of breastfeeding with your employer, especially that breastfeeding mothers miss fewer days from work. If your direct supervisor cannot help you with your needs, you should be able to go to your Human Resources department to make sure you are accommodated.

Some mothers start pumping and storing their milk ahead of the time they will be returning to work in order to have a supply available for the first week when they are separated from the baby. The number of times you will need to pump your milk depends on the length of time you are away from your baby. But, it is usually not best to go for more than three hours without removing some milk from your breasts. If you are leaving a very young baby who eats very often, you may have to pump your milk more often at first so that your breasts do not become uncomfortable or leak.

Expressing milk through pumping is a learned skill that's both physical and psychological. It takes about the same time as breastfeeding, unless you are using a "double" automatic breast pump. The let-down reflex is important during pumping in order to express a good amount of milk. If you are having problems getting your milk to "let-down" at the start of pumping, you may find it helpful to have a picture of your baby close-by. You also can try other things to stimulate the let-down reflex, like applying a warm, moist compress to the breast, gently massaging the breasts, or just sitting quietly and thinking of a relaxing setting. Try to clear your head of stressful thoughts. Use a comfortable chair or pillows. Once you begin expressing your milk, think about your baby.

It is best to wash your hands before pumping your breast milk and to make sure the table or area where you are pumping is also clean. Each time you are done pumping, it is best to thoroughly wash your pumping equipment with soap and water and let it air dry. This helps prevent germs from getting into the breast milk.

Storing Breast Milk

It is important to know the guidelines for storing breast milk properly so that you always give your baby fresh milk. Any container used to store milk should be clean and sterile. Always try to leave an inch or so from the milk to the top of the container since frozen milk expands. After pumping your milk, it is helpful to label the storage container. Always use the oldest dated milk first. Colostrum, or the first milk expressed in the first few days after delivery, can be stored at room temperature for up to 12 hours. Mature milk, or breast milk that comes in six days after the birth of your baby can be stored in the following ways:

At Room Temperature:

At 60 degrees for 24 hours

At 66-72 degrees for 10 hours

At 79 degrees to 4-6 hours

In the Refrigerator:

At 32-39 degrees for up to 8 days

In the Freezer:

In a freezer compartment contained within the refrigerator for up to 2 weeks

In a self-contained freezer, either on top of or on the side of the refrigerator for 3 - 4 months

In a deep freezer for 6 months to 1 year

*It is helpful to freeze the milk in small amounts, such as 2 to 4 ounce servings, so there is less waste and you can choose the amount of milk depending on the baby's hunger.

Bottles and Containers

You can store breast milk in bottles that fit directly onto your breast pump. After pumping, simply remove the pumping tubing, cover with the bottle lid, label the milk, and put it in the refrigerator. Many breast pump carrying cases also come with built-in, cooler-type compartments for storing ice pack and/or the freshly pumped bottles of milk. If used correctly, these do stay cold enough to leave your pumped milk in until you can get home to store the milk in the refrigerator or freezer.

Research is conflicting about the advantages and disadvantages of storing milk in glass versus plastic. However, glass bottles or containers are best for freezing breast milk because it offers the most protection from contamination. The second choice is clear, hard plastic, and the last choice is the cloudy hard plastic containers. Wait to tighten the caps or lids until the milk is completely frozen.

Storage Bags

If you want to freeze your breast milk in bags, you can purchase storage bags that fit directly onto your breast pump and that are made for freezing milk. They are pre-sterilized, thick, have an area for labeling, and seal easily. After pumping, simply remove the pumping tubing, fold the bag over, making sure all air is out of the bag, and seal it. Make sure to label the bag with the date before freezing. When you want to use the milk, you can cut the storage bag with sterile scissors. If the storage bag has a built-in pouring spout, it is easy to pour the milk into a bottle. Other storage bags can be used in the kind of bottle that uses disposable liners, so there is no need to transfer the milk.

Thawing and Handling Stored Breast Milk

It is normal for stored breast milk to separate in its container into two parts, what looks like cream and then a lighter colored milk. Some human milk also varies in color and can be blueish, yellowish, or brownish. Just gently shake the milk before feeding to mix it back together.

Breast milk doesn't take long to thaw or warm up. Never place a bottle or bag of breast milk in the microwave. Milk doesn't heat uniformly in the microwave, so you won't have control over the temperature and could burn your baby. All you have to do is hold the bottle or frozen bag of milk in under cool and then warm water for a few minutes. If warm running water is not available, you can heat up a pan of water on the stove. Remove the pan from the heat and place the container into the warm water. Never warm the container directly on the stove. Shake the milk, then test it on your wrist to see if it's warm enough for your baby.

Once frozen milk is thawed, it can be refrigerated, but not re-frozen.

Breastfeeding and Pumping Accessories

Clothing

You don't have to buy a new wardrobe to breastfeed. While no extravagant "breastfeeding clothing" is necessary, you should try to wear clothing that will make breastfeeding and/or pumping easier. Wearing jumpers or one-piece dresses are not as convenient as a blouse or two - piece outfits. Nursing bras and nursing clothes, like blouses that have hidden openings near your chest are available but are not necessary.

You can buy disposable or cloth breastfeeding pads to line your bra. These help prevent any leaking from soaking through your blouse. The disposable pads can be thrown away, and the cloth pads can be tossed in the washing machine and used again.

If you want to breastfeed your baby in public, you can use a receiving blanket or a breastfeeding blanket that discreetly covers your chest and your baby's upper body.

Pumps

There are several types of breast pumps available. Some are manual, or require you to use your hand and wrist to squeeze a bulb-type device to pump the milk. There also are automatic pumps that run either on battery or hook up to an electrical outlet and automatically simulate your baby's natural sucking action. These pumps are easier to use, and do not require a lot of practice or skill. They can collect more milk in less time, however they cost a lot more than manual pumps (around $150 to $200).

Think about your pumping needs before you buy a breast pump. If you plan on going back to work, either full-time or part-time, it may be worth investing in a automatic pump. If you plan to never be away from your baby except for an occasional outing, you may want to use a hand pump or hand express the milk without a pump. Both hand expressing and using a hand pump require practice, skill, strength and coordination.

Pumps also come in "single" or "double" meaning you can either pump the milk from one breast or from both breasts at the same time. Most electric pumps are double pumps, but you can choose whether to pump one or both breasts at the same time.

Although many breast pumps look different, they all operate in basically the same way. Each comes with a plastic "shell" that covers your nipple and breast, that is also connected to tubing that carries the milk from your breast to a bottle or bag that collects the milk. Experts caution against using the "bicycle horn" type of pump because it cannot be sterilized, can be ineffective, and can cause damage to breast tissue.

Most automatic pumps come in convenient, discreet carrying cases that match your other accessories you may carry to work, such as your purse or briefcase.

If you purchase a pump, **make sure to follow the manufacturer's instructions for cleaning and caring for the equipment.**

Some pumps can be purchased at baby supply stores or general department stores, but **most high-grade, professional quality automatic pumps have to be purchased or rented from a lactation consultant at a local hospital, or from a breastfeeding organization.**

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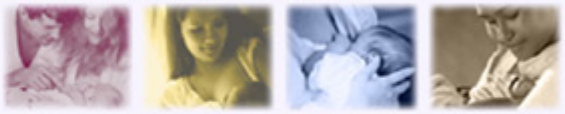

Human Milk Banks

Ideally, breast milk comes from a baby's own mother. But when this is not possible, you can give your baby breast milk from donors (other women's breast milk), which provides the same precious nutrition and disease fighting properties as your own breast milk. If your baby has special needs, such as intolerance to formula, severe allergies, is failing to thrive on formula, is premature or has other health problems, he or she may need donated human milk not only for health, but also for survival.

There are several reasons why a mother may not be able to breastfeed her own baby:

- In a premature delivery, a mother's milk supply may not become established enough to provide milk for her baby. Sometimes the stress of caring for a very ill infant prevents the milk supply from developing.
- A mother who delivers twins or triplets might not have enough milk supply to nourish all of the babies.
- Some medicines taken by the mother for a health problem, such as chemotherapy for cancer, can harm a baby.
- A mother might have an infection that could be spread to her baby through breastfeeding, such as HIV or hepatitis.
- A mother might have a health problem that prevents her from breastfeeding or makes it impossible for her to produce milk.

Breast milk from donors is stored in human milk banks. At this time, there are only six human milk banks in the United States. While the number of infants and children who depend upon donor milk for health or survival is small, their numbers are greater than is the supply available from these milk banks.

Human milk banks screen the donors, and collect, screen, process, and dispense donor human milk. Because babies who use donor milk are not related to the donors, every possible step is taken to ensure the milk is safe. And the milk is only dispensed by a prescription from your health care provider. The prescription must show how many ounces of processed milk are needed per day, and for how many weeks or months. The milk bank also needs your name, the baby's name, and your address and phone number. Then, you or your health care provider can contact a milk bank to order the milk. If the milk bank is close to you, you can pick up the milk there. If you live out of the area, the milk bank can ship the frozen milk in coolers every few days.

The cost of donor milk is about $3 per ounce. Sometimes there is another fee for shipping. Most health insurance companies cover the cost of donor milk if it is medically necessary. To find out if your insurance will cover the cost of the milk, call your insurance company or ask your health care provider. If your insurance company does not cover the cost of the milk, talk with the milk bank to find out how payment can be made later on, or how to get help with the payments. A milk bank will never deny donor milk to a baby in need.

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