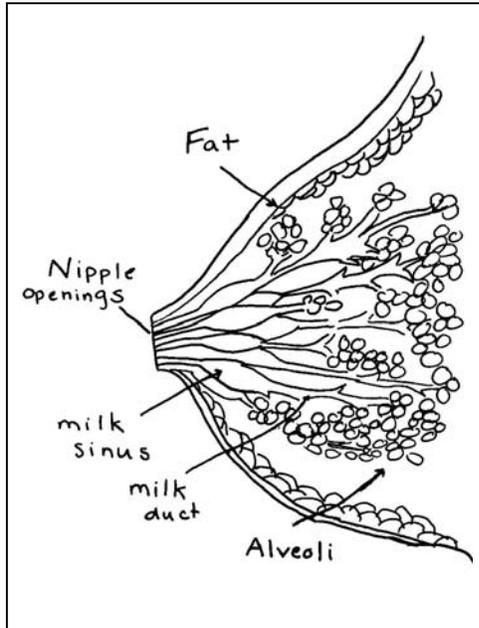


ANATOMY AND PHYSIOLOGY OF BREASTFEEDING

In order to understand breastfeeding, and to maximize your milk supply, it is helpful to understand the structures of the breast, and the process of how milk is made.

The Anatomy of the Breast



This diagram shows the internal structure of the breast. *Alveoli* are the glandular tissue where milk is produced and stored till it is released by baby's suckling. Milk travels from the alveoli, through *milk ducts*, into the *milk sinuses* (reservoirs that lie under the areola.) There are 15 – 20 milk ducts in each breast, and milk flows from these through the openings in the nipple. On the outside of the breast, not shown in the diagram: The *areola* is the darkened area around the nipple. It's very important that babies latch on to the areola, not just the nipple, because that will mean that their mouth is compressing the milk sinuses. *Montgomery glands*, are visible as small bumps on the areola when a woman is cold or aroused. These glands produce a lubricating substance that keeps nipples moist and supple, and helps to prevent infection. When breastfeeding, wash your nipples with warm water only, as soap will wash away this protective fluid.

Breast Changes in Pregnancy

You may have noticed your breasts changing throughout the months of pregnancy. As the milk-producing structures develop, most women's breasts get larger, gaining as much as a pound of weight each, as they develop more fatty tissue to protect the alveoli and ducts. Some women develop stretch marks from this growth. Veins become darker and more visible, as the blood supply to the breasts increases. Montgomery glands become more prominent. The areola gets darker: this high contrast coloring helps baby to find the nipple more effectively.

You began producing *colostrum*, the first form of breastmilk, during the second trimester of pregnancy. It is a thick, syrupy yellow liquid. Some women may notice colostrum leaking from breasts or as a dried crust on the nipples. Colostrum is packed with proteins and nutrients, enzymes to help baby's digestive tract develop, and antibodies to protect baby from infection.

Breast Milk Production

After birth, and the release of the placenta, a hormone called *prolactin* signals the body to begin producing mature breast milk. Prolactin tells your alveoli cells to draw water and nutrients from the bloodstream to make milk. For the first few days of nursing, baby receives colostrum. During the first week, often day 3 – 5, mom's milk supply increases. Baby receives a transitional milk till day 14, then mature milk.

When baby begins nursing, he suckles in quick short bursts. The first milk your baby receives at each feeding is the milk that has gathered in the breast between feedings. This low-fat *foremilk* is high in protein and carbohydrates and satisfies the baby's thirst. As the baby continues to suckle, the nipple stimulation causes mom's pituitary gland, located in the brain, to produce a hormone called *oxytocin*. Oxytocin causes a milk ejection reflex (often called *let-down*): the milk ducts widen and shorten, and the tissue around the alveoli contracts, pushing hindmilk through the ducts, into the sinuses, then into baby's mouth. *Hindmilk* is a creamy milk that is high in fat and calories, and will satisfy baby's hunger. (See PCN 430-31 for more information on the components of breastmilk.)

Some women feel a tingling, itching, or warmth in their breasts when they have "let-down" and the milk flow increases. Others only notice that baby's suckling slows down, and baby begins to swallow rhythmically. They may also see milk in baby's mouth.

In the early weeks, let-down may take several minutes. Later on, it will take only a few seconds. Milk let-down happens best when you are relaxed, and feeling comfortable and confident. Many sources recommend that at each feeding, you nurse for at least ten minutes on each breast to ensure that you have one or more let-downs and baby gets a solid supply of hindmilk with each feeding.

Supply and Demand

The amount of milk you make depends on how often your baby nurses and how effectively milk is removed from your breasts. The more often baby suckles at your breast, the more he stimulates the production of prolactin and oxytocin, and the more milk you will make.

To establish a good milk supply, it is important to feed frequently: watch your baby for hunger cues and feed on demand. Also, let baby feed until full each time. There is no need to limit feedings, or restrict the amount of time spent feeding. You can not overfeed a breastfed baby.

On the other hand, delaying or limiting feedings, using a pacifier, offering supplements of formula or water, or attempting to put your newborn on a schedule of feeding only every 3 hours will delay your milk coming in and will decrease your milk production.

You will notice that if you go three hours between feedings, your breasts may feel full and hard. At the end of a feeding, your breasts may feel "emptied" and soft.

Always remember that you always have milk available to feed your baby. You don't have to wait till breasts are hard to feed baby... even if it's only been a short while since your last feeding and your breasts feel soft, you will produce plenty of milk to feed baby as soon as you put him to your breast and he begins suckling.

The "24 hour cure"

Anytime you're worried about your milk supply, just nurse the baby more often!!

If you really want to increase your milk production, take a "24 hour cure". Spend a day snuggled up skin to skin with baby in bed, doing nothing all day but snuggling baby, and feeding him anytime he is awake and interested. This much hormonal stimulation is guaranteed to increase your milk supply!