

PHYSIOLOGY OF BREASTFEEDING

**Optimum Infant Feeding:
A Breastfeeding Medicine Elective for
Physicians & Advance Practice Nurses**

Module 4

OBJECTIVES

- Physiology of the breast
- Dynamics of infant suck
- Milk production
- Supply and demand

THE BREAST

BREAST ANATOMY & PHYSIOLOGY



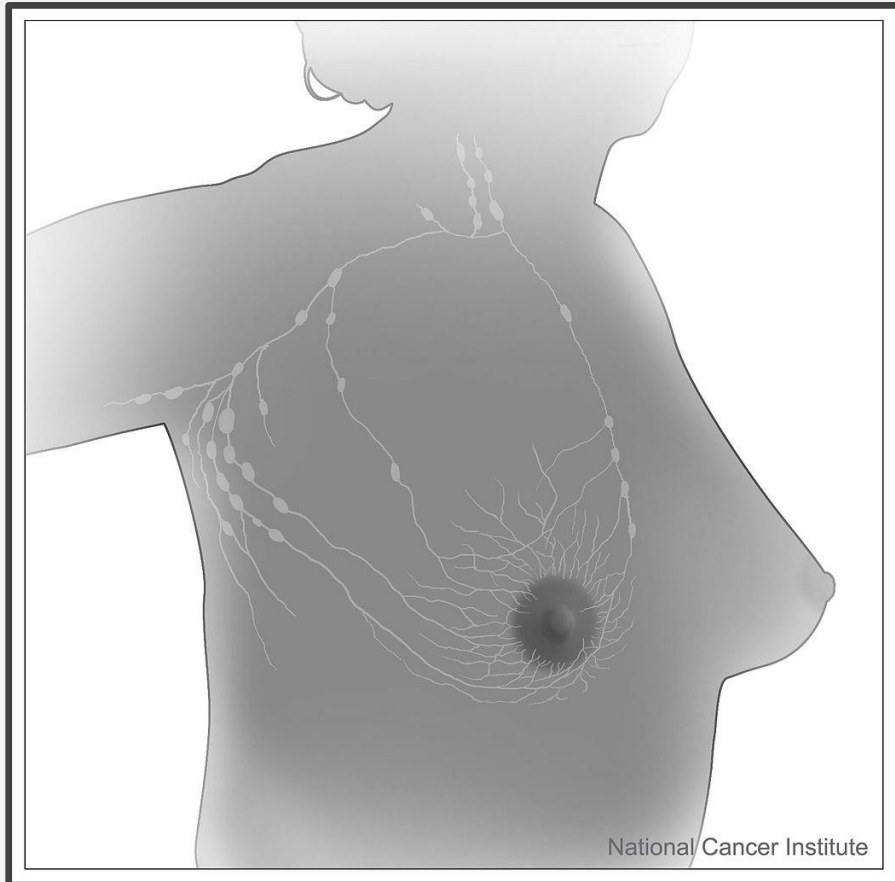
Patrick J. Lynch; illustrator; C. Carl Jaffe; MD; cardiologist

Glandular tissue of the lactating breast

- Lobule
- Alveoli
- Epithelial milk secretion cells
- Myoepithelial cells

- Milk duct
- Terminal duct

THE LYMPHATIC SYSTEM OF THE BREAST



The flow of the breast

- Milk moves from the alveoli to the front of the breast
- The breast is also covered by a network of lymphatic vessels just under the skin
- Lymph moves toward the chest wall, where it moves into larger lymphatic vessels and away from the breast

THE BABY



DIFFERENCE BETWEEN LATCH AND SUCK

LATCH

- Visible from the outside
- Lips
- Deep vs. shallow

SUCK

- Not visible from the outside
- Mechanics inside the mouth
- Strong vs. weak

INFANT SUCK

Mechanics of Infant Suck

- Suck, swallow, breathe
- Negative pressure
- Central grooving



MILK PRODUCTION



MOVEMENT IN THE LANGUAGE OF LACTATION

Supply

Production

Empty/Full

Recharge

Foremilk

Fast flow

Hindmilk

Slow flow

MILK PRODUCTION

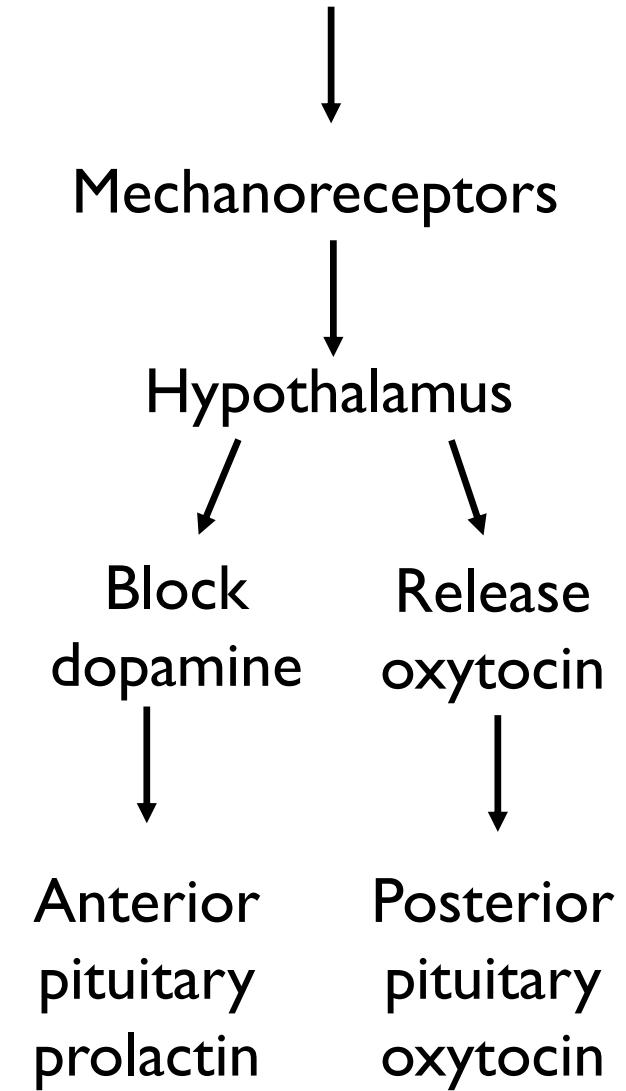
The hormones/neurotransmitters of milk production during lactation

- Prolactin: Secreted from the lactotrophic cells in the anterior pituitary. Attaches to prolactin receptors on the epithelial cells in the breast, signaling them to make milk.
- Oxytocin: Secreted from the posterior pituitary. In lactation, it attaches to receptors on the myoepithelial cells and makes them to contract, causing letdown
- Dopamine: Secreted from prolactin inhibiting neurons in the hypothalamus blocking the lactotrophic cells in the pituitary from releasing prolactin

NURSING



When the baby latches



DYNAMICS OF SUPPLY AND DEMAND



- Feedback inhibitor of lactation (FIL)
- Inadequate numbers of prolactin receptor sites
- Sodium levels in the milk
- Efficacy of infant suck

IN SUMMARY

In order to protect, promote, and support the breastfeeding relationship, a solid understanding of the physiologic dynamics of lactation is needed.

- Milk flows to the nipple while interstitial fluid flows to the chest wall
- Infant suck includes negative pressure and propulsive action
- Milk production is dynamic and adaptive

DIFFICULTIES WITH NURSING

