

CONTINUING MEDICAL EDUCATION

MultiCare Women & Children's
Grand Rounds



HELPING ALL MOTHERS MAKE MILK

Understanding the Provider's Role in
Breastfeeding Success



Objectives

- Expand the knowledge base for Obstetricians and Pediatricians as it pertains to milk production in order to better facilitate improved breastfeeding outcomes at the County, State and National level.
- Review normal breast changes during puberty, pregnancy and subsequent pregnancy.
- Recognize the role pre-existing conditions play in breastfeeding outcomes.
- Identify key indicators in a maternal history which may adversely impact early milk production and/or long term milk supply.

Breastfeeding Recommendations

- AAP: “...Exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant.”
- WHO: “Exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond.”

Healthy People 2020 Goals

- Increase the proportion of infants who are breastfed
 - Ever **Target:** 81.9 %
 - At 6 months **Target:** 60.6%
 - Exclusively through 3 months **Target:** 46.2 %
 - Exclusively through 6 months **Target:** 25.5%
- Reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life. **Target:** 14.2%

Current Breastfeeding Data

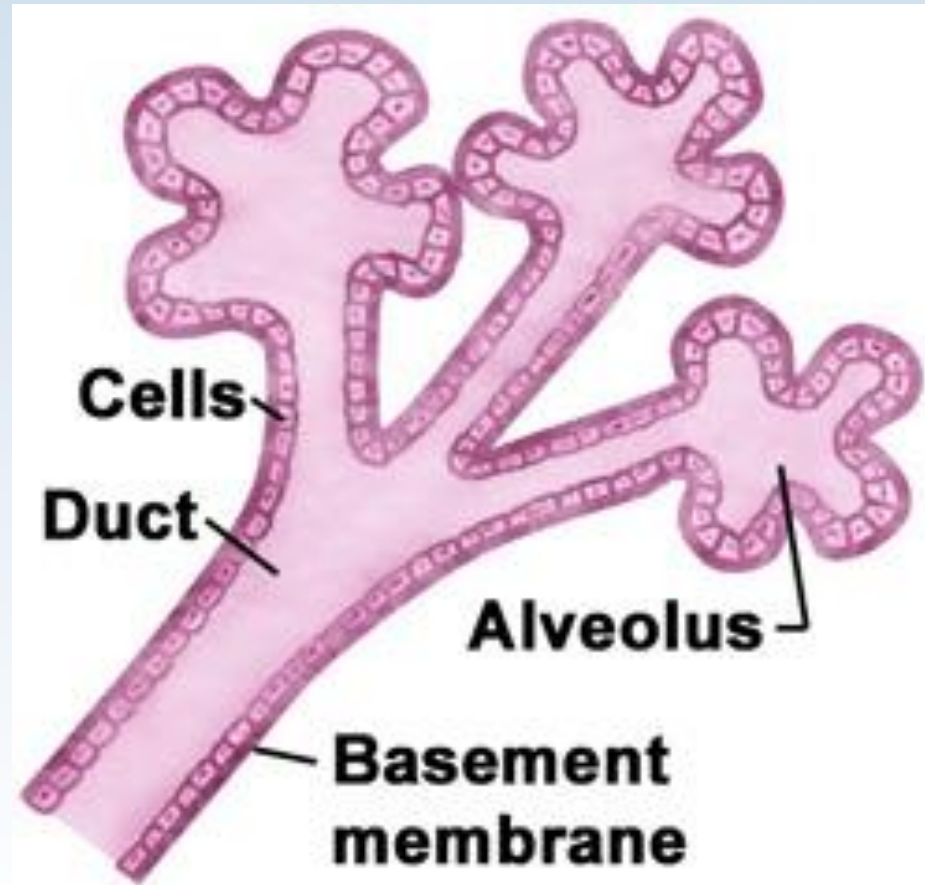
- **TG:** 93.7% Breastfed in the Hospital
- **GS:** 93% Breastfed in the Hospital
- **AMC:** 91.2% Breastfed in the Hospital

- **Washington:**
 - 91.8% Ever Breastfed
 - 46.8% Exclusive at 3 months
 - 20.3% Exclusive at 6 months
 - Any breastfeeding at 6 months 64.2%
- **National:**
 - 79.2% Ever Breastfed
 - 40.7% Exclusive at 3 months
 - 18.8% Exclusive at 6 months
 - Any breastfeeding at 6 months 49.4%

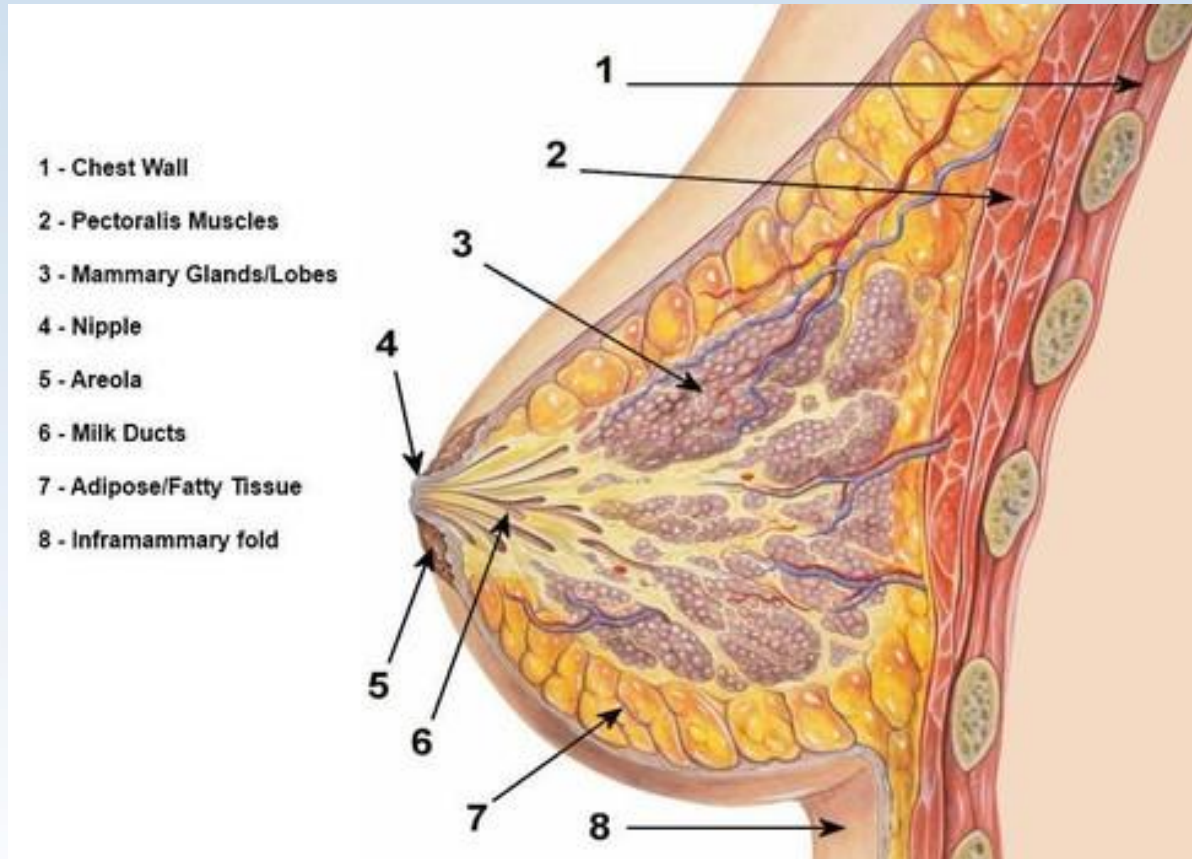
Breast Development

- **Prepuberty**
 - End buds, lateral buds, and lobules exist from fetus through prepuberty.
- **Puberty**
 - Organogenesis; ductal, lobular and fat pad growth. Alveolar growth around the onset of menses.
- **Menstrual Cycle**
 - Mini practice cycles of lactation

Breast Development



Breast Development



Breast Development

- **Pregnancy**

- Within the first 8 weeks ductal branching, lobular formation, veining, heaviness, increased pigmentation of the areola and nipple.
- During the third trimester, differentiation of mammary epithelial cells and alveolar cells into milk-releasing alveolar cells.

Breast Development

- **Postpartum**

- Rapid drop in progesterone during the first 4 days after delivery
- Drop in human placental lactogen after delivery of the placenta
- Oxytocin release during labor and with every breastfeeding/pumping session
- Rapid increase in prolactin

Breast Development

- **Galactopoiesis**

- From about day 9 lactation is controlled by supply and demand.
- Breast size starts to decrease between 6-9 months if still breastfeeding.

- **Involution**

- Milk-producing epithelial cells are gradually removed during weaning and replaced with adipocytes.
- The alveoli do not completely involute. The breast does not completely return to the prepregnancy state.

Breast Development

- **Subsequent Pregnancy**
 - Additional building of breast structures on preexisting structures, in response to the hormones of pregnancy.

Troublesome Preexisting Conditions

- **Infertility**

- Hormones which women can battle their entire pre-pregnancy and pregnancy may continue to plague them postpartum impacting their milk supply.

- **PCOS**

- Multiple factors contribute to lactation difficulties related to PCOS; elevated estrogen, down regulated prolactin receptors, insulin resistance, insufficient mammary tissue, obesity.

- **Diabetes**

- Lower rates of success perhaps related to insulin resistance. (Urine sugar tests are not reliable during late pregnancy and lactation due to lactose being excreted in the urine.)

Troublesome Preexisting Conditions

- **Obesity**

- Similar to both PCOS and Diabetes. Increased estrogen related to adipose tissue interferes with milk production. Insulin resistance may play a role. Psychosocial issues, positioning difficulties, and modesty also come into play.

- **Thyroid Disorders**

- Hypothyroid can lead to low milk supply
- Hyperthyroid can impair milk ejection reflex or “let-down”

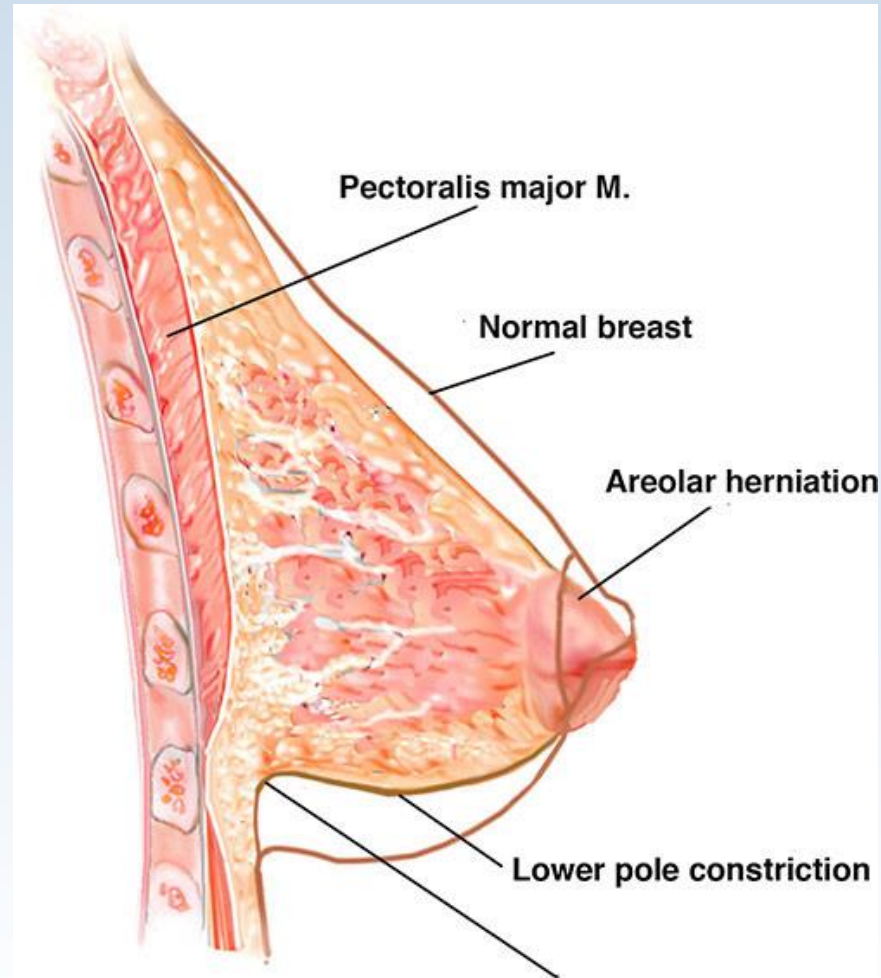
Troublesome Preexisting Conditions

- **Breast Surgery or Breast Trauma**
 - **Reduction**
 - What type of procedure was done?
 - **Augmentation**
 - What was the underlying cause for augmentation?
 - **Trauma**
 - Motor Vehicle Crash
 - Chest Tubes
 - Burns

Troublesome Preexisting Conditions

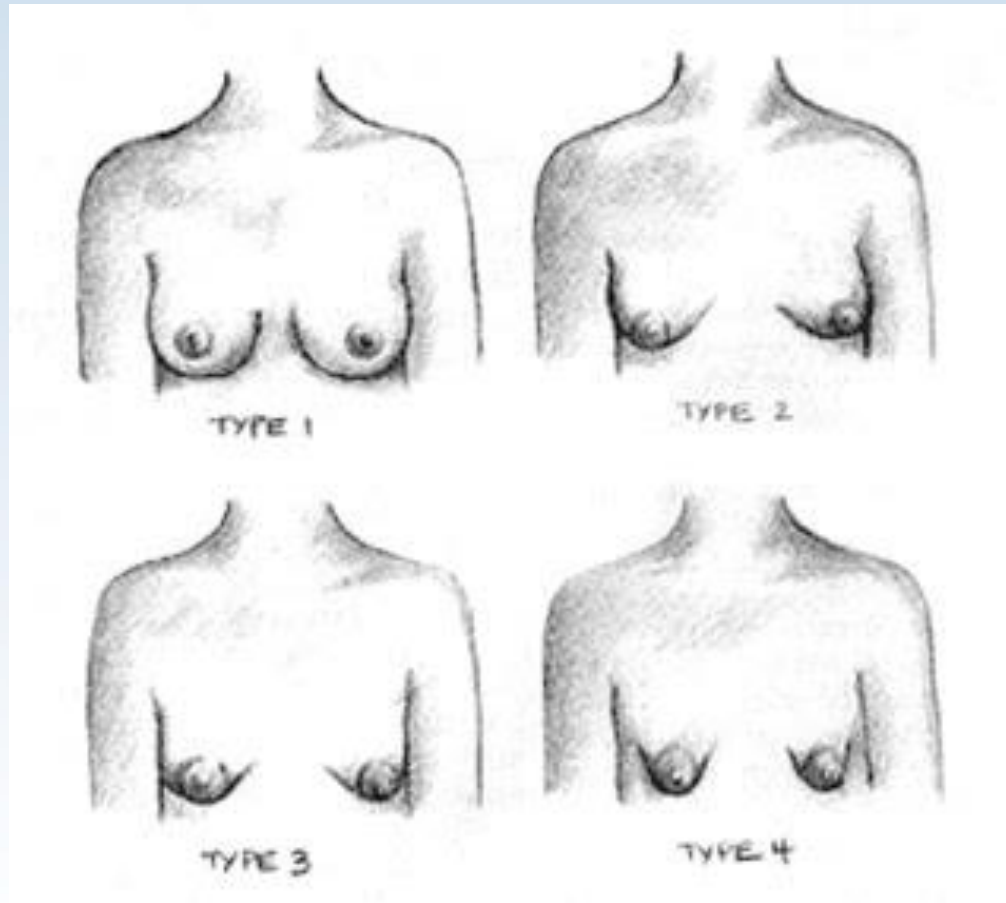
- Hypoplasia/Insufficient Glandular Tissue
 - Varying degrees of severity.
 - Frequently missed on breast assessments.
 - Usually report little to no change in breast during pregnancy.
 - Insufficient Glandular Tissue sometimes masked by obesity.

Hypoplasia/Insufficient Glandular Tissue



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Hypoplasia/Insufficient Glandular Tissue



Troublesome Postpartum Conditions

- **Retained Placental Fragments**
 - Human Placental Lactogen continues to compete with Prolactin for receptors in the breast, inhibiting milk production.
- **Thyroiditis**
 - Can occur in up to 5% of new mothers.
 - Can be either hyper or hypothyroidism.
- **Sheehan's Syndrome (Hypopituitarism)**
 - Related to postpartum hemorrhage and hypotension impacting the anterior pituitary and causing prolactin to not be secreted.
- **Theca Lutein Cysts**
 - Impact milk supply due to higher levels of circulating androgens.

Troublesome Postpartum Conditions

- **Pain**
 - Pain related to either delivery or nipple damage can impair milk production, let down and long term feeding success.
- **Stress**
 - Stress at and after delivery interfere with the hormonal response to make milk.

References

- American Academy of Pediatrics: Breastfeeding and the Use of Human Milk
 - <http://pediatrics.aappublications.org/content/pediatrics/early/2012/02/22/peds.2011-3552.full.pdf>
- Amir L. & Donath S. (2007) A Systematic review of maternal obesity and breastfeeding intention, initiation, and duration. BMC 2007:7-9
- Brownell E, Howard CR, Lawrence RA, et al. Delayed onset of lactogenesis II predicts the cessation of any or exclusive breastfeeding. J Pediatrics 2012.03.035

References

- Centers for Disease Control and Prevention: Breastfeeding Report card
 - <http://www.cdc.gov/breastfeeding/pdf/2014breastfeedingreportcard.pdf>
- Lawrence, R & Lawrence, R (2011). Breastfeeding a Guide for the Medical Profession.
- Riordan, J & Wambach, K (2010). Breastfeeding and Human Lactation.

Webviewer Instructions

Successful completion of post test is required to obtain a certificate of participation.

Cut and paste this link into your browser to access the post test.

<http://www.surveygizmo.com/s3/2587333/WCGR0216>