

## Recognizing when things are headin' south



Recognizing When Things are

# HEADIN' SOUTH

*What's going on?*

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## Objectives

1. Differentiate the three main categories of milk production problems.
2. List at least 3 risk factors for lactation problems in the early postpartum
3. Relate the importance of current pregnancy history to lactation capability
4. Explain the impact of infant suck on maternal milk production

~No disclosures~



Are things heading south?

Well, it's all about the clues

## Gathering good clues

Start by listening to mom's story

⇒ Is there really a problem? **No** → Reassure, educate

Yes

Take a detailed history

- ⇒ Risk factors for delays
- ⇒ Breastfeeding Management

Yes

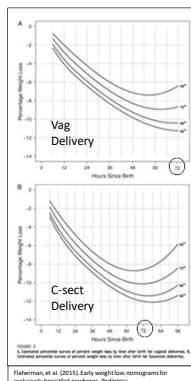
Further Observations

- ⇒ Infant assessment
- ⇒ Feeding assessment
- ⇒ Maternal Assessment

⇒ Differentiate delayed, primary and/or secondary causes



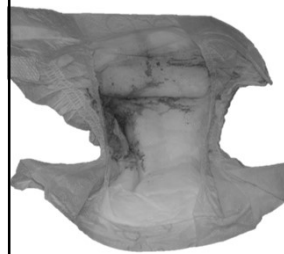
Early weight loss  
>7%?  
>10%?



Use day 2 weight as baseline for % loss - Noel-Weiss 2011

*Start Here* → Is baby getting enough?

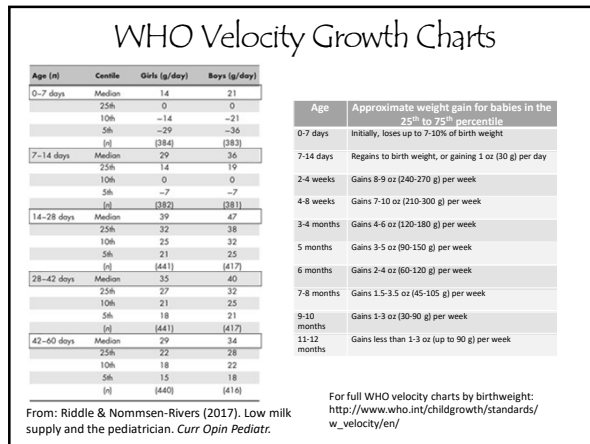
Lots of smaller stools OR  
Less often but blow-outs



Once milk comes in, baby  
should start to gain 30-  
45g/day in the first 1-2 mo

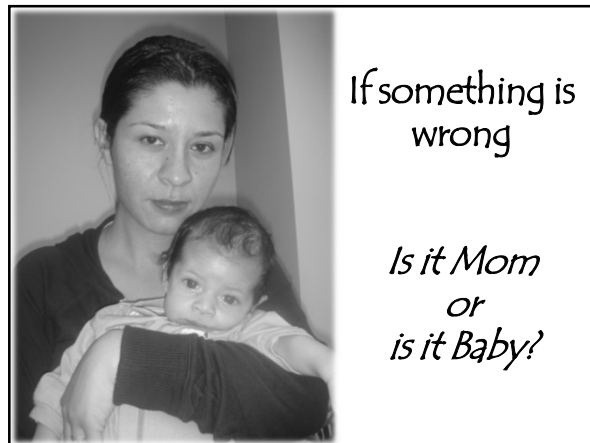
*How does baby look and act?*

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## Factor in supplementation

Weight gain/rate  
Fast, slow, on target?  
Milk at breast?  
Oz expressed milk?  
Oz formula?



Is baby not getting enough because mom isn't making enough?

Or is there enough milk but baby can't get enough out?

Or was there enough milk but now there isn't because baby killed off the supply?



## If things really are heading south...

#1: Feed the Baby

#2: Protect/Work on Supply

#3: Find the problem



Don't put the cart before the horse

You must **find** the problem **before**  
you can **fix** the problem

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### First fork in the road

Did milk production struggle to get going?

Or did milk production start off well, and then start to die later on?



DELAYED ONSET: Milk in >72hrs (noticeable fullness)  
Happens to over 1/3 of mothers in U.S. studies!  
→ 40% of those babies lose >10% BW by day 4

### The first week

Nommsen-Rivers 2010: "Delayed onset of lactation is epidemic; risk factors are multidimensional"

### Risk Factors for Delayed lactogenesis

- ♣ Stress in labor (Grajeda, 2002)
- ♣ Long labor or Prolonged stage 2 labor (Dewey 2003, 2001; Chen 1998)
- ♣ Caesarean delivery, especially unscheduled (Dewey 2003, 2001; Evans 2003)
- ♣ Ineffective or infrequent breast emptying (Chen 1998; Nommsen-Rivers 2010)
- ♣ Vacuum-assisted deliveries (Hall 2002)
- ♣ Severe bleeding (Livingstone, 1996; Willis 1995)

### DOL Risk factors: The first-time mother



Put baby to breast right away, or pump

Aim for 8-12 times per day from the start. Skin to skin helps

*Frequent feedings made a difference for this mother!*

Gallipeau, R., Goulet, C., & Chagnon, M. (2012). Infant and maternal factors influencing breastmilk sodium among primiparous mothers. *Breastfeed Med*, 7, 290-294. doi: 10.1089/bfm.2011.0022

### DOL Risk Factors

- ♣ Age ≥ 30 (Nommsen-Rivers, 2010)

Incidental finding in bfg during pregnancy study: milk intake on day 2 decreased 25g for each 5-year increment of maternal age

Marquis, G. S., Penny, M. E., Diaz, J. M., & Marin, R. M. (2002). Postpartum consequences of an overlap of breastfeeding and pregnancy: reduced breast milk intake and growth during early infancy. *Pediatrics*, 109(4), e56.



### DOL Risk Factors



- ♣ Hypertension (Hall 2002)
- ♣ HELLP

- ♣ Severe pp edema (Nommsen-Rivers, 2010; Chantry 2011)



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### Retained placental tissue



### *DOL Risk Factors*

Classical: hemorrhage

Subtle: persistent red bleeding, cramping, passing clots

Ask about her postpartum lochia (bleeding)



### *DOL Risk Factors*

Hormonal contraception first wk postpartum (Hurst 2007; Betzold 2010)

SSRIs? Serotonin transport and metabolism in the mammary gland modulates secretory activation and involution (Marshall 2010)



### *DOL Risk Factor?* Hyperemesis gravidarum



How was it treated?  
Timing/duration?  
Dosage?

Everett, M. (1982). Pyridoxine to Suppress Lactation. *JR Coll Gen Pract*, 32(242), 577-578.  
Gupta, T., & Sharma, R. (1990). An anti-lactogenic effect of pyridoxine. *J Indian Med Assoc*, 88(12), 336-337.



### Mom's early reactions...

Failure of early removal of colostrum may inhibit lactogenesis II despite normal hormonal changes.

Neville M, Morton J. Physiology and Endocrine changes underlying human lactogenesis II. *Journal of Nutrition*. 2007;133(11):3305S-3008S.

Breastfeeding frequency impacts the start of lactogenesis II, which in turn influences how long a woman exclusively breastfeeds

Galipeau R, Goulet C, Chagnon M. Infant and maternal factors influencing breastmilk sodium among primiparous mothers. *Breastfeed Med*. Aug 2012;7:250-254.



## The second fork in the road- A

Did milk production struggle to get going?

Or did milk production start off well, and then start to die later on?

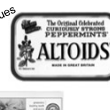
How well did mom manage breastfeeding?



### *Rule out Maternal Management Problems*



Anti-galactagogues



Parenting books & programs



Prolactin inhibiting meds



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### *Gratuitous Supplementation: It all started with just one bottle...*



#### The night sleep myth:

*Babies who wake and eat more at night do so because mom isn't making enough milk at that time*



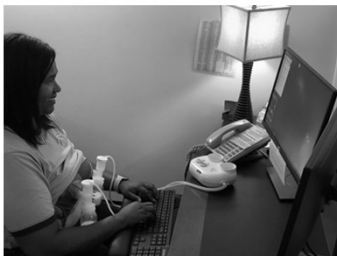
**Pumping in lieu:**  
*Do not take responses at face-value: Check and re-check answers*

How often do you pump?

Day AND night?

How many times in 24hrs?

### **Pumping for work**



The Magic Number  
Pumping Equipment ➡

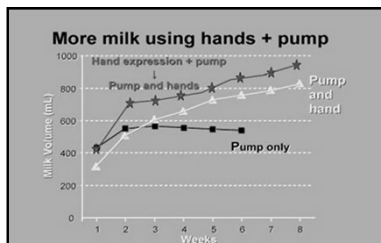
Pumps are not



all created equal



*Pumps aren't perfect. Using hands makes a difference*



Morton <http://newborns.stanford.edu/Breastfeeding/MaxProduction.html>

### Second fork in the road- B

Or did milk production struggle to get going and never got there?

Did milk production start off well, and then start to die later on?

*How well did baby do her job?*



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### Rule Out the Baby



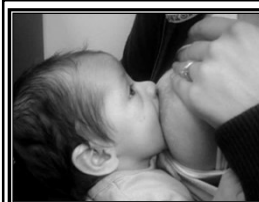
- Behavioral/Sensory • Mechanical • Neurological
- Physical • Airway

Baby's early feeding experiences at the breast factor into long-term production

Has baby been latching well and often from the start?

### Infant & Feeding Assessment

- ☐ Infant birth and health history
- ☐ Physical assessment
- ☐ Suck assessment ⇨
- ☐ How does mother *describe* baby's feeding behavior in relation to available milk supply?
- ☐ Observe a feed and/or test-weighing
- ☐ Consider that a problem may be *multi-factorial*



Look  
and  
Listen



What do you see and hear when baby tries to latch & suck?

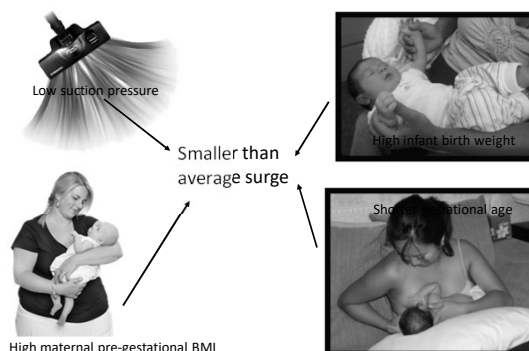
### What do we know about baby?



*Because it's all about suck*

### Infant suck affects prolactin surges

Zhang et al. (2016). *Are Prolactin Levels Linked to Suction Pressure?*



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### Infant suck affects milk removal

Poor milk removal →  
Residual milk →  
Lower persistency →  
Decreased milk  
production

*"Cows with a higher percentage of  
residual milk usually have a lower  
persistency of lactation"*

- Hurley 2010

### Red Flags

#### Difficult birth



### Torticollis



### Palate clefts



⚠ Problems can make  
it difficult to achieve  
adequate negative  
pressure

⚠ Clicking heard if  
suction is broken  
intermittently

### Less Common Infant Issues



Cleft of Lip & hard palate



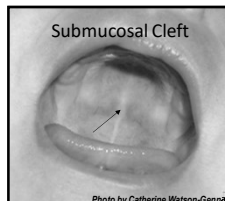
Soft palate cleft



Bifid uvula



Bifid uvula



Submucosal Cleft

Photo by Catherine Watson-Genna

### Fatiguing



#### The Sleepy / Lethargic / Worn Out Baby

Typically symptomatic of poor milk flow  
May also indicate infant stress from

- ✓ poor muscle tone
- ✓ Heart problems
- ✓ inhibition of tongue mobility
- ✓ infection

} All can  
affect suck!

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### Borderline early & premature



### Central Nervous System problems



Low muscle tone

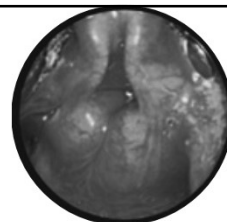


### Airway problems



Frequent choking, sputtering & pulling away

### Airway: Laryngomalacia



Inspiratory stridor due to prolapse of walls in larynx during inhalation

May worsen over the first few months, but usually resolves by 2 yrs

- Stress triggers: crying, feeding
- Worse when lying on back (supine)
- Usually does best with head hyper-extended

### Strategy for airway issues

Remember that *air wins over food every time*

- Cradle hold can make it worse- try latching upright, with *head extension*
- Paced feeding (breast/bottle)
- Time for physiological maturation
- Supportive pumping as needed



### Facial asymmetry & aberrations



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### Suck Problems: Jaw



#### **Small Lower Jaw** (micrognathia)

-May be associated with Pierre-Robin

#### **Recessed Lower Jaw** (retrognathia)

*Livingstone, 2000*



### Red Flags: The kuk-kuk baby



### Frenotomy for Posterior restrictions

*Photos courtesy Dr. James Murphy*

### The third fork in the road

Or did milk production struggle despite good management and baby??

How well did mom manage breastfeeding?  
How well did baby do her job?



*If you've ruled out baby...*

Take the  
Maternal  
Assessment  
Deeper



### Detailed Maternal Assessment

- ⇒ Previous breastfeeding history
- ⇒ Mother's Reproductive history ➡
- ⇒ Mother's Health & Event history ➡
- ⇒ This pregnancy history ➡
- ⇒ Breast assessment ➡
- ⇒ Hormonal Issues ➡



### Previous Breastfeeding history



### Reproductive History

- ☐ Age of breast development
- ☐ Age of menses
- ☐ Menstrual regularity



### Reproductive History

- ☐ Fertility
- ☐ Hormonal issues
- ☐ Breastfeeding experience of her mother, aunts, sisters, cousins

### Mat'l health & event history

- ☐ Illnesses
- ☐ Car or other accidents
- ☐ Breast surgery/biopsies
- ☐ Chest surgeries/wounds
- ☐ Nipple piercings (Garbin 2009)
- ☐ Blunt trauma or burn wounds
- ☐ Radiation therapy
- ☐ Abscess/mastitis damage?
- ☐ Spinal cord injuries
- ☐ Gastric by-pass

### Current Pregnancy history



- ☐ Breast sensitivity, changes?
- ☐ Labs normal/abnormal?
- ☐ Gestational diabetes?
- ☐ Total/rapid weight gain
- ☐ Threatened premature labor?
- ☐ Milk in prior to delivery?
- ☐ Lowered voice, virilization?

### Normal Pregnancy Development

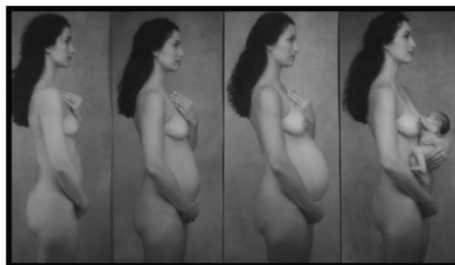


Image courtesy of Triumph International and bubhub.com.au  
General signs of successful mammogenesis:  
Increased breast sensitivity, nipple changes, enlargement,  
expressible colostrum at end of pregnancy



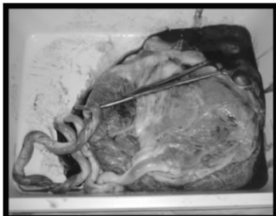
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### Pregnancy: *Critical role of the Placenta*

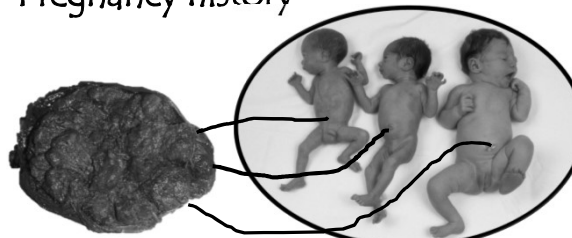
Progesterone after 3mo all from placenta

Human Placental Lactogen (HPL) only produced in placenta

Level of HPL correlates most closely with breast volume change



### Pregnancy history



- ☐ Hypertension?
- ☐ Placental problems?
- ☐ Baby small for gestational age or growth restricted?

Placental *problems* can interfere with normal mammary development



### Pregnancy history: preterm labor



*Effect of preterm birth and antenatal corticosteroid treatment on lactogenesis II in women (Henderson 2008)*

### Pregnancy & Birth complications

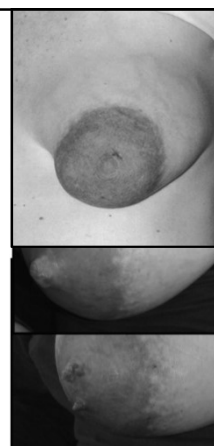
Postpartum hemorrhage

- ⚡ Vaso-constricting meds such as methergine
- ⚡ Possible damage to pituitary: mild ⇨ Sheehans
- ⚡ Anemia

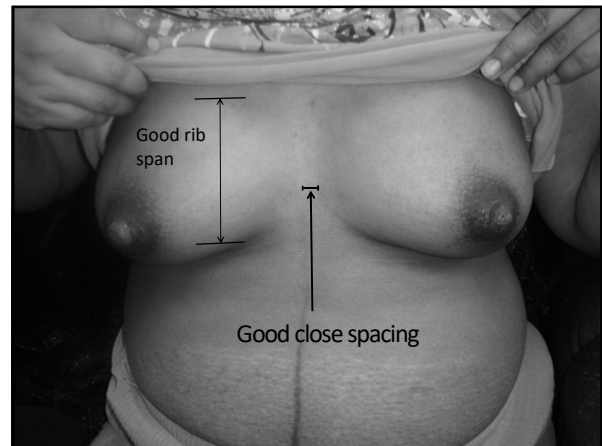
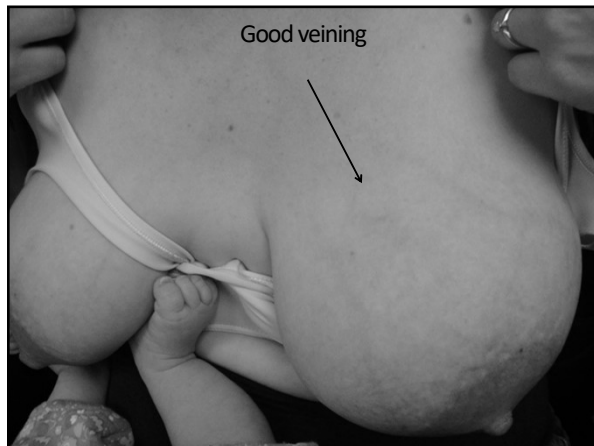
### Breast Assessment

Note:

- ☐ Overall symmetry
- ☐ Overall shape
- ☐ Spacing between breasts
- ☐ Significant veining
- ☐ Fullness of each quadrant
- ☐ Proportion of glandular to fatty/connective tissue
- ☐ Nipple-areolar complex:
  - Pregnancy changes? Bulbous?
  - Overall density? Unusual nipple configuration? Pore patency?



## Recognizing when things are headin' south



**PLASTIC SURGERY BREAST**  
**TYPES: VON HEIMBURG CLASS**

Class 1: hypoplasia lower medial quadrant

Class 2: hypoplasia of both lower quadrants with adequate areolar skin

Class 3: hypoplasia both lower quads with limited areolar skin

Class 4: hypoplasia of all quads

Type I: hypoplasia of the lower medial quadrant

Type II: hypoplasia of the lower medial and lateral quadrant, sufficient skin in the subareolar region

Type III: hypoplasia of the lower medial and lateral quadrant

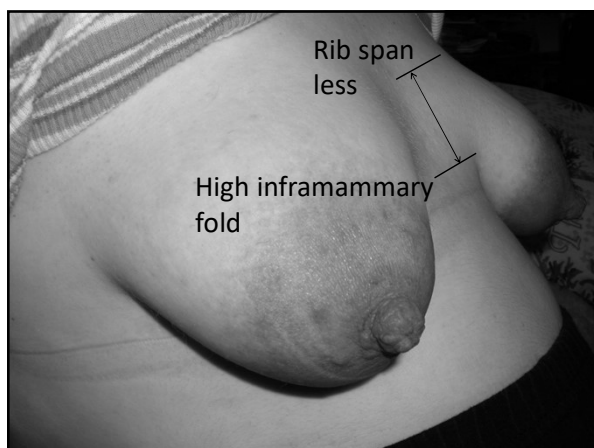
Type IV: severe breast constriction

Fig. 3. From: Hypoplastic Breast Anomalies in the Female Adolescent Breast. Classification of tuberous breast deformity (von Heimburg et al) (Reprinted with permission from von Heimburg D, Exner K, Kruft S, Lemperle G. The tuberous breast deformity: classification and treatment. *Br J Plast Surg* 1996;49(6):339-345). Sebastian Winocour, et al. *Semin Plast Surg*. 2013 Feb;27(1):42-48.

Deficiency in overall breast "footprint"

Type I

Fig. 5. From: Hypoplastic Breast Anomalies in the Female Adolescent Breast. Tuberous breast deformity classification (Grolleau et al) (Reprinted with permission from Grolleau JL, Landrey E, Lavigne B, Charvois JP, Costagliola M. Breast base anomalies: treatment strategy for tuberous breasts, minor deformities, and asymmetry. *Plast Reconstr Surg* 1999;104(7):2040-2048). Sebastian Winocour, et al. *Semin Plast Surg*. 2013 Feb;27(1):42-48.



**Markers of Lactation Insufficiency**

Type 1

Type 2

Type 3

Type 4

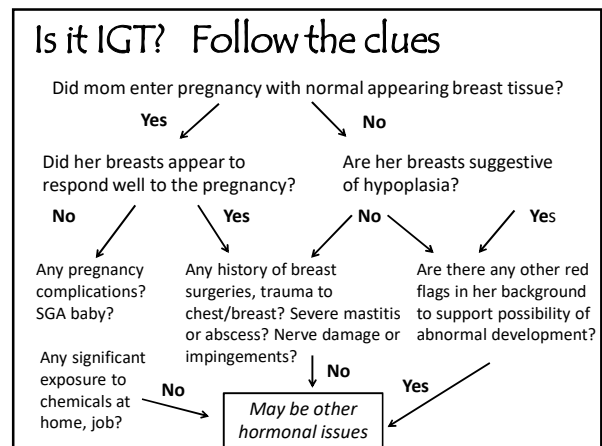
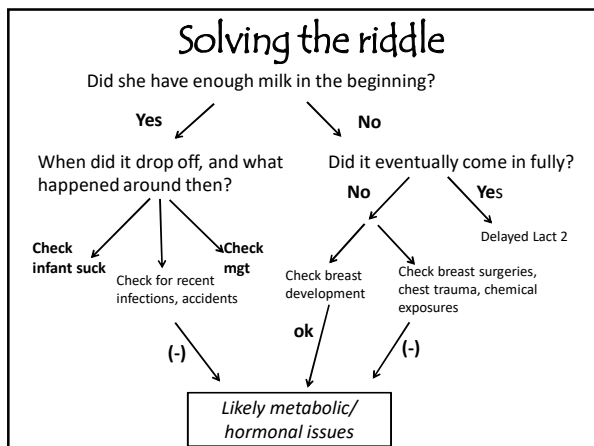
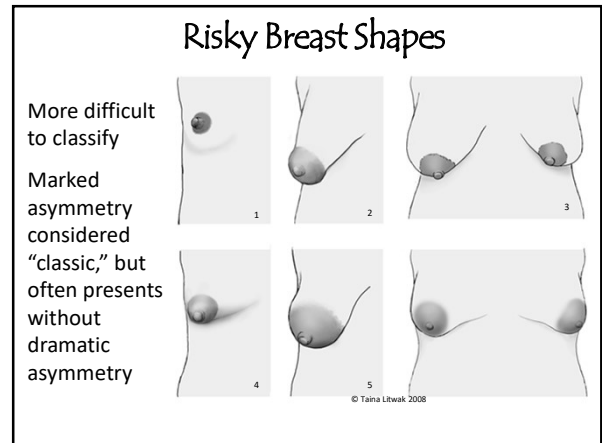
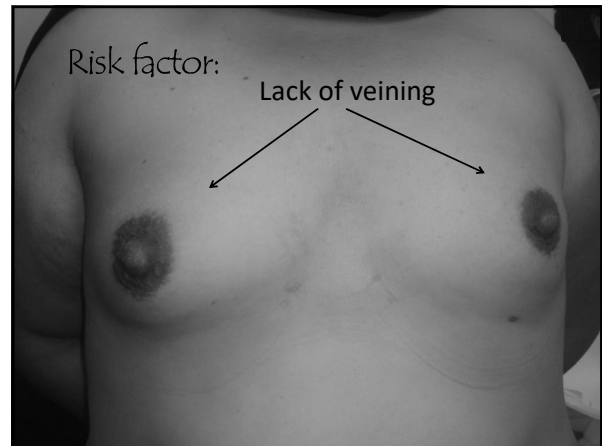
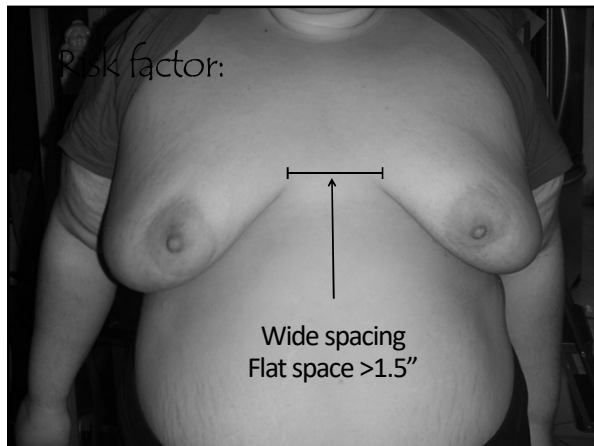
© Jones & Bartlett 2000. Used with permission.

Risk factor:

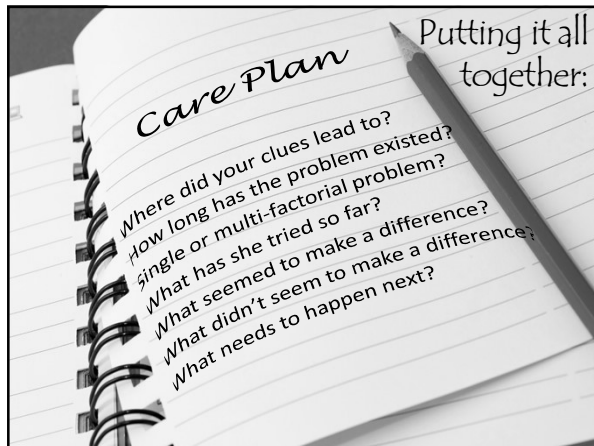
Higher breast type #

Huggins, K., Petok, E., & Mireles, O. (2000). Markers of Lactation Insufficiency: A Study of 34 Mothers. *Current*

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## Screening for Hormonal Problems: The Next Step?

