

Puerperium and Lactation

Ina S. Irabon, MD, FPOGS, FPSRM, FPSGE
Obstetrics and Gynecology
Reproductive Endocrinology and Infertility

Reference

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Outline

- ♦ Definition of Puerperium
- ♦ Involution of the reproductive tract
- ♦ Placental site involution
- ♦ Urinary tract
- ♦ Hematological changes
- ♦ Breasts and Lactation
- ♦ Maternal care during pueperium
- ♦ Home care

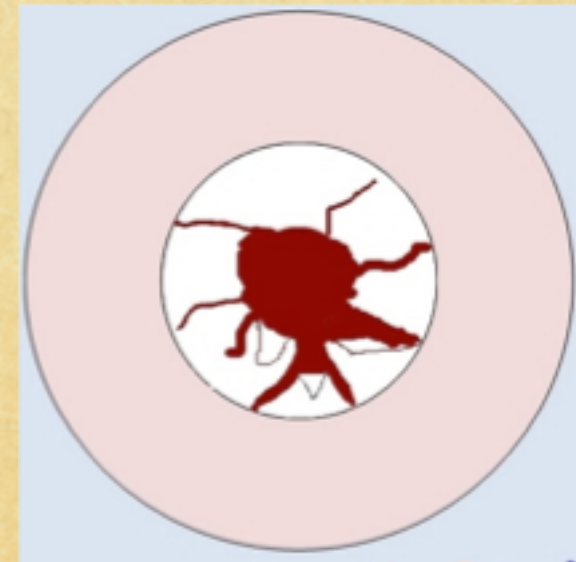
Puerperium

- ♦ time following delivery, during which pregnancy-induced maternal anatomical and physiological changes return to the nonpregnant state.
- ♦ Its duration is considered to be between 4 and 6 weeks after delivery

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Involution of the Reproductive tract: **Birth canal**

- ♦ Vagina rarely regain its nulliparous dimensions. Lacerations or stretching of the perineum during delivery may result in vaginal outlet relaxation
- ♦ Vaginal rugae begin to reappear by the third week but are less prominent than before.
- ♦ The hymen is represented by several small tags of tissue, which scar to form the **myrtiliform caruncles (“hymenal tags”)**
- ♦ Vaginal epithelium begins to proliferate by 4 to 6 weeks, coincidental with resumed ovarian estrogen production.
- ♦ Parturition predisposes to urinary incontinence and pelvic organ prolapse.



- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Involution of the Reproductive Tract: **Cervix**

- ♦ By the end of the first week, cervical opening narrows, the cervix thickens, and the endocervical canal reforms.
- ♦ Cervix remains somewhat wider, and typically, ectocervical depressions at the site of lacerations become permanent → characteristic of a parous cervix

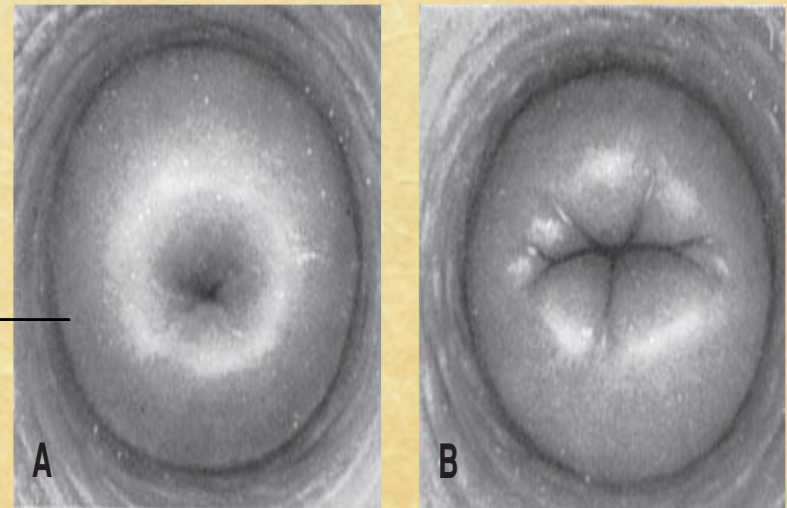
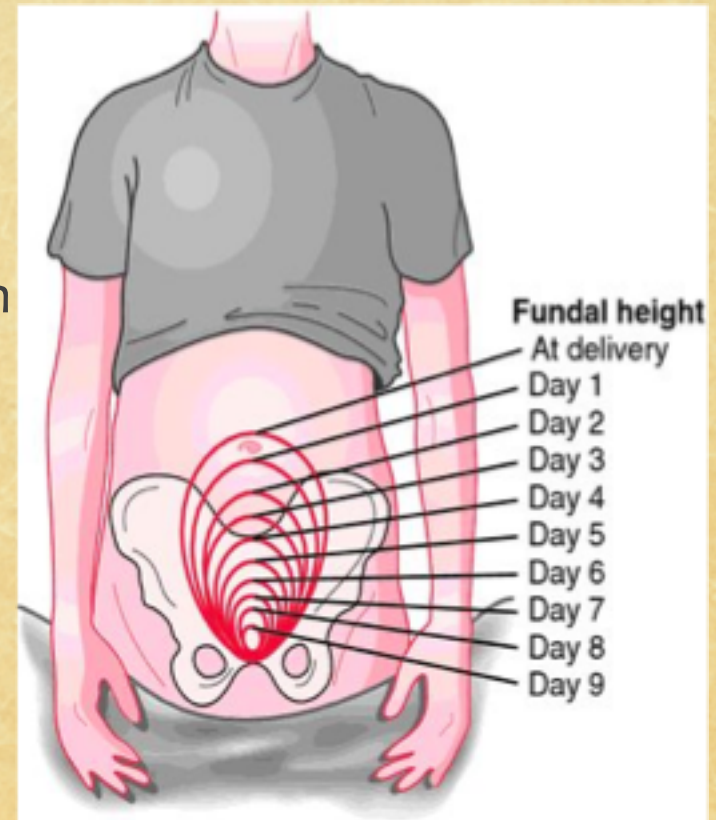


FIGURE 36-1 Common appearance of nulliparous (A) and parous (B) cervixes.

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Involution of the Reproductive Tract: **Uterus**

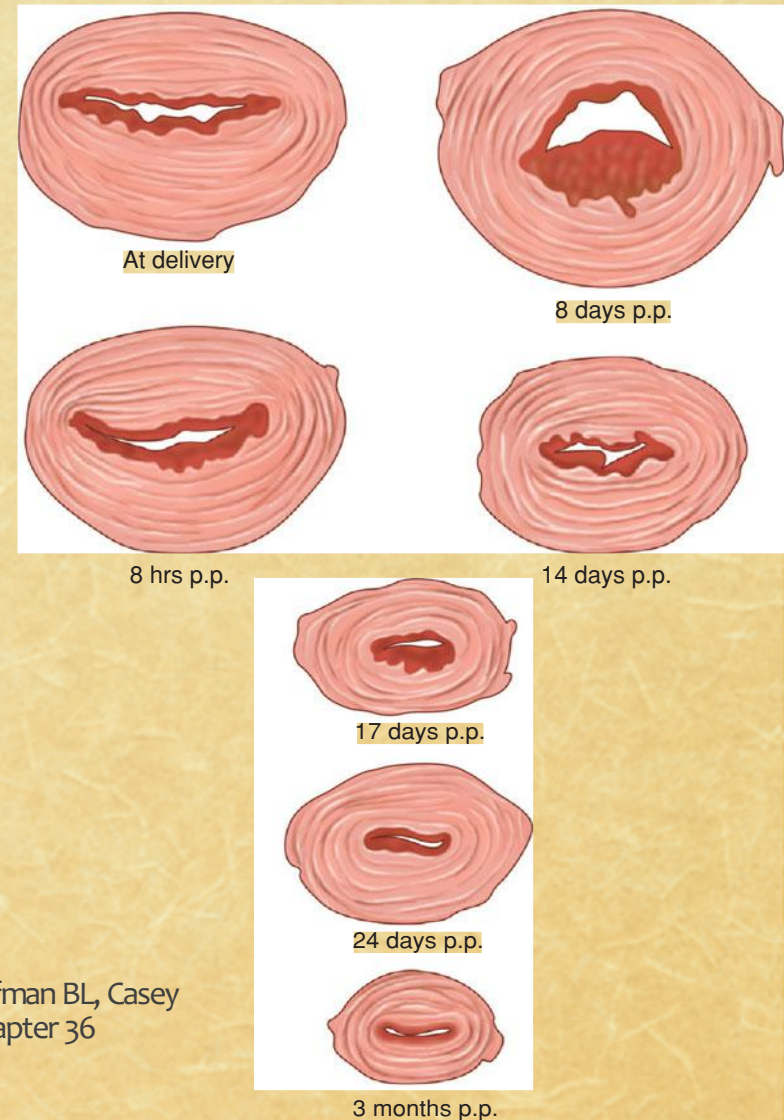
- ♦ Postpartum, the fundus of the contracted uterus lies slightly below the umbilicus.
- ♦ The anterior and posterior walls, which lie in close apposition, are each 4 to 5 cm thick
- ♦ At this time, the uterus weighs approximately 1000 g.
- ♦ And the uterus and endometrium return to pregravid size by **8 weeks after delivery**



- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Involution of the Reproductive Tract: **Uterus**

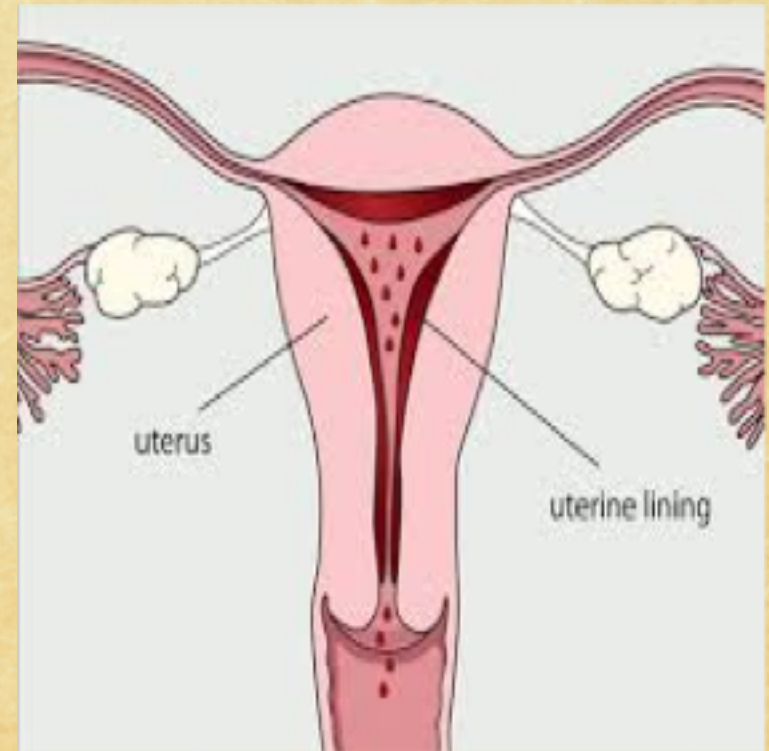
- ♦ Myometrial involution begins as soon as 2 days after delivery.
- ♦ By 1 week, the uterus weighs approximately 500 g;
- ♦ By 2 weeks, about 300 g;
- ♦ At 4 weeks, involution is complete and the uterus weighs approximately 100 g.
- ♦ After each successive delivery, the uterus is usually slightly larger than before the most recent pregnancy.



- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Involution of the Reproductive Tract: **Uterus**

- ♦ Within 2 or 3 days after delivery, the remaining decidua becomes differentiated into two layers:
- ♦ The **superficial layer** becomes necrotic and is sloughed in the **lochia**.
- ♦ The **basal layer** adjacent to the myometrium remains intact and is the source of new endometrium



- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

“Lochia”

- ♦ Early in the puerperium, sloughing off of decidual tissue results in a reddish vaginal discharge of variable quantity.
- ♦ contains erythrocytes, shredded decidua, epithelial cells, and bacteria.
- ♦ **Lochia Rubra:** first few days after delivery, reddish in color
- ♦ **Lochia serosa:** 3 or 4 days after delivery, lochia becomes progressively pale in color
- ♦ **Lochia alba:** After approximately the 10th day, because of an admixture of leukocytes and reduced fluid content, lochia assumes a white or yellow-white color.
- ♦ The average duration of lochial discharge ranges from 24 to 36 days
- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

“Afterpains”

- ♦ In multiparas, uterus often contracts vigorously at intervals and gives rise to “afterpain” (*postpartum contractions*)
- ♦ These are more pronounced as parity increases and worsen when the infant suckles, likely because of **oxytocin release**
- ♦ Usually, afterpains decrease in intensity and become mild by the third day

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Placental site involution

- ♦ Complete extrusion of the placental site takes up to 6 weeks.
- ♦ Immediately after delivery, the placental site is approximately palm-sized.
- ♦ Within hours of delivery, it normally consists of many thrombosed vessels that ultimately undergo organization
- ♦ By the end of the second week, it is 3 to 4 cm in diameter.
- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

“Subinvolution”

- ♦ Uterine involution may be hindered because of infection, retained placental fragments, or other causes.
- ♦ Accompanied by varied intervals of prolonged lochia as well as irregular or excessive uterine bleeding.
- ♦ On bimanual examination, the uterus is larger and softer than would be expected.
- ♦ Ergonovine (Ergotrate) or methylergonovine (Methergine), 0.2 mg orally every 3 to 4 hours for 24 to 48 hours, is recommended by many,
- ♦ If there is infection, antimicrobial therapy usually leads to a good response. Empirical therapy with azithromycin or doxycycline (POSTPARTUM ENDOMETRITIS) usually prompts resolution regardless of bacterial etiology.

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Late postpartum hemorrhage

- ♦ Excessive bleeding that happens anytime between 24 hours to 12 weeks after delivery.
- ♦ Such bleeding most often is the result of abnormal involution of the placental site.
- ♦ It occasionally is caused by retention of a placental fragment or by a uterine artery pseudoaneurysm.
- ♦ Usually, retained products undergo necrosis with fibrin deposition and may eventually form a so-called placental polyp

Involution of the Urinary Tract

- ♦ Normal pregnancy-induced glomerular **hyperfiltration persists** on the first postpartum day but returns to prepregnancy baseline by 2 weeks
- ♦ dilated ureters and renal pelves return to their prepregnant state during the course of 2 to 8 weeks postpartum. Because of this dilated collecting system, coupled with residual urine and bacteriuria in a traumatized bladder, urinary tract infection is a concern in the puerperium.
- ♦ Bladder trauma is associated most closely with labor length and thus to some degree is a normal accompaniment of vaginal delivery.
- ♦ Thus, overdistention, incomplete emptying, and excessive residual urine are common.

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Hematological and Coagulation Changes

- ♦ Marked *leukocytosis and thrombocytosis* may occur during and after labor.
- ♦ white blood cell count sometimes reaches 30,000/ μ L, with the increase predominantly due to granulocytes.
- ♦ There is a relative *lymphopenia* and an absolute *eosinopenia*.
- ♦ Normally, during the first few postpartum days, hemoglobin concentration and hematocrit fluctuate moderately.

Pregnancy-Induced Hypervolemia

- ♦ Cardiac output usually remains elevated for 24 to 48 hours postpartum and declines to non-pregnant values by 10 days .
- ♦ Systemic vascular resistance and blood pressure rise .
- ♦ Normal pregnancy is associated with an appreciable *increase in extracellular sodium and water*, and postpartum diuresis is a physiological reversal of this process.
- ♦ Postpartum diuresis results in relatively rapid weight loss of 2 to 3 kg, which is added to the 5 to 6 kg incurred by delivery and normal blood loss.
- ♦ Weight loss from pregnancy itself is likely to be maximal by the end of the second week postpartum



Breasts and lactation

Colostrum

- ♦ After delivery, the breasts begin to secrete colostrum, which is a deep lemon-yellow liquid.
- ♦ It usually can be expressed from the nipples by the **second postpartum day**.
- ♦ Compared with mature milk, colostrum is rich in **immunological components** and contains **more minerals and amino acids**.
- ♦ It also has more protein, much of which is **globulin**, but **less sugar and fat**.
- ♦ Secretion persists for 5 days to 2 weeks, with gradual conversion to mature milk by 4 to 6 weeks.
- ♦ **Immunoglobulin A (IgA)** in colostrum offers the newborn protection against enteric pathogens.

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Mature milk


- ♦ Mature milk is a complex and dynamic biological fluid that includes fat, proteins, carbohydrates, bioactive factors, minerals, vitamins, hormones, and many cellular products.
- ♦ A nursing mother easily produces **600 mL of milk daily**.
- ♦ Essential amino acids are derived from blood, and nonessential amino acids are derived in part from blood or synthesized in the mammary gland.
- ♦ Most milk proteins are unique and include **α -lactalbumin, β -lactoglobulin, and casein**. Fatty acids are synthesized in the alveoli from glucose and are secreted by an apocrine-like process.
- ♦ **Vitamin K is virtually absent**, and thus, an intramuscular dose is given to the newborn
- ♦ **Vitamin D content is low**—22 IU/mL.

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Whey, prolactin, EGF

- ♦ **Whey** is milk serum and has been shown to contain large amounts of **interleukin-6**.
- ♦ Human milk has a **whey-to-casein ratio** of **60:40**, considered ideal for absorption.
- ♦ **Prolactin** appears to be actively secreted into breast milk, and essential for lactation.
- ♦ **Epidermal growth factor (EGF)** has been identified in human milk. And because it is not destroyed by gastric proteolytic enzymes, it may be absorbed to promote **growth and maturation of newborn intestinal mucosa**

Endocrinology of lactation

- ♦ Progesterone, estrogen, and placental lactogen, as well as prolactin, cortisol, and insulin, appear to act in concert to stimulate the growth and development of the milk-secreting apparatus
- ♦ With delivery, there is an **abrupt and profound decrease in the levels of progesterone**

- ♦ **removes the inhibitory influence of progesterone** on α -lactalbumin production and stimulates lactose synthase to increase milk lactose.
- ♦ Progesterone withdrawal also allows prolactin to act unopposed in its stimulation of α -lactalbumin production.
- ♦ **Serotonin** is produced in mammary epithelial cells and has a role in maintaining milk production → may explain the decreased milk production in women taking selective serotonin-reuptake inhibitors—SSRIs

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Endocrinology of lactation

- ♦ The intensity and duration of subsequent lactation are controlled, in large part, by the *repetitive stimulus of nursing and emptying of milk* from the breast.
- ♦ Prolactin is essential for lactation, and women with extensive pituitary necrosis—*Sheehan syndrome*—do not lactate
- ♦ Although plasma prolactin levels fall after delivery to levels lower than during pregnancy, each *act of suckling triggers a rise in levels of prolactin*

Endocrinology of lactation

- ♦ A stimulus from the breast *curtails the release of dopamine*, also known as *prolactin-inhibiting factor*, from the hypothalamus → this in turn transiently *induces increased prolactin secretion*.
- ♦ The *posterior pituitary* secretes *oxytocin* in pulsatile fashion → stimulates milk expression from a lactating breast by causing contraction of myoepithelial cells in the alveoli and small milk ducts.
- ♦ *Milk ejection*, or *letting down reflex*, is a reflex initiated especially by suckling, which stimulates the posterior pituitary to liberate oxytocin → this reflex may even be provoked by an infant cry and can be inhibited by maternal fright or stress.

Immunological Consequences of Breast Feeding

- ♦ Human milk contains several protective immunological substances, including **secretory IgA and growth factors**.
- ♦ The antibodies in human milk are specifically directed against maternal environmental antigens such as against ***Escherichia coli*** → As a result, breastfed infants are less prone to enteric infections than bottle-fed ones
- ♦ Human milk also provides protection against **rotavirus** infections, a major cause of infant gastroenteritis.
- ♦ The risks of atopic dermatitis and respiratory infections are reduced

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Nursing

- ♦ Human milk is ideal food for neonates.
- ♦ World Health Organization (2011) recommends **exclusive breast feeding for up to 6 months**, with avoidance of exposure to cow milk proteins.
- ♦ It provides age- specific nutrients as well as immunological factors and anti- bacterial substances, and factors that promote cellular growth and differentiation.
- ♦ For both mother and infant, the benefits of breast feeding are long-term:
 - ♦ women who breast feed have a **lower risk of breast and reproductive cancer**, and their children have **increased adult intelligence**
 - ♦ Breast feeding is associated with **decreased postpartum weight retention**.
 - ♦ Rates of **sudden-infant-death syndrome are significantly lower** among breast-fed infants
- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

TABLE 36-2. Advantages of Breast Feeding

Nutritional

Immunological

Developmental

Psychological

Social

Economical

Environmental

Optimal growth and development

Decrease risks for acute and chronic diseases

Summarized from the American Academy of Pediatrics and the American College of Obstetricians and Gynecologists, 2012.

TABLE 36-3. Ten Steps to Successful Breast Feeding

1. Have a written breast-feeding policy that is regularly communicated to all health-care staff
2. Train all staff in skills necessary to implement this policy
3. Inform all pregnant women about the benefits and management of breast feeding
4. Help mothers initiate breast feeding within an hour of birth
5. Show mothers how to breast feed and how to sustain lactation, even if they should be separated from their infants
6. Feed newborn infants nothing but breast milk, unless medically indicated, and under no circumstances provide breast milk substitutes, feeding bottles, or pacifiers free of charge or at low cost
7. Practice rooming-in, which allows mothers and infants to remain together 24 hours a day
8. Encourage breast feeding on demand
9. Give no artificial pacifiers to breast-feeding infants
10. Help start breast-feeding support groups and refer mothers to them

Adapted from the World Health Organization, 1989.

Care of Breasts

- ♦ The nipples require little attention other than cleanliness and attention to skin fissures.
- ♦ Fissured nipples render nursing painful, and also provide a *portal of entry for pyogenic bacteria*.
- ♦ Because dried milk is likely to accumulate and irritate the nipples, washing the areola with *water and mild soap* is helpful before and after nursing.
- ♦ When the nipples are irritated or fissured, it may be necessary to use *topical lanolin and a nipple shield for 24 hours or longer*.
- ♦ If fissuring is severe, the infant should not be permitted to nurse on the affected side. Instead, the *breast should be emptied regularly with a pump until the lesions are healed*.

- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Contraindications to breastfeeding

- ♦ Nursing is contraindicated in women:
 - ♦ who take **street drugs** or do not control their **alcohol** use;
 - ♦ have an infant with **galactosemia**;
 - ♦ have human immunodeficiency virus (**HIV**) infection;
 - ♦ have **active, untreated tuberculosis**;
 - ♦ take certain medications;
 - ♦ who are undergoing **breast cancer** treatment

Drugs Secreted in Milk

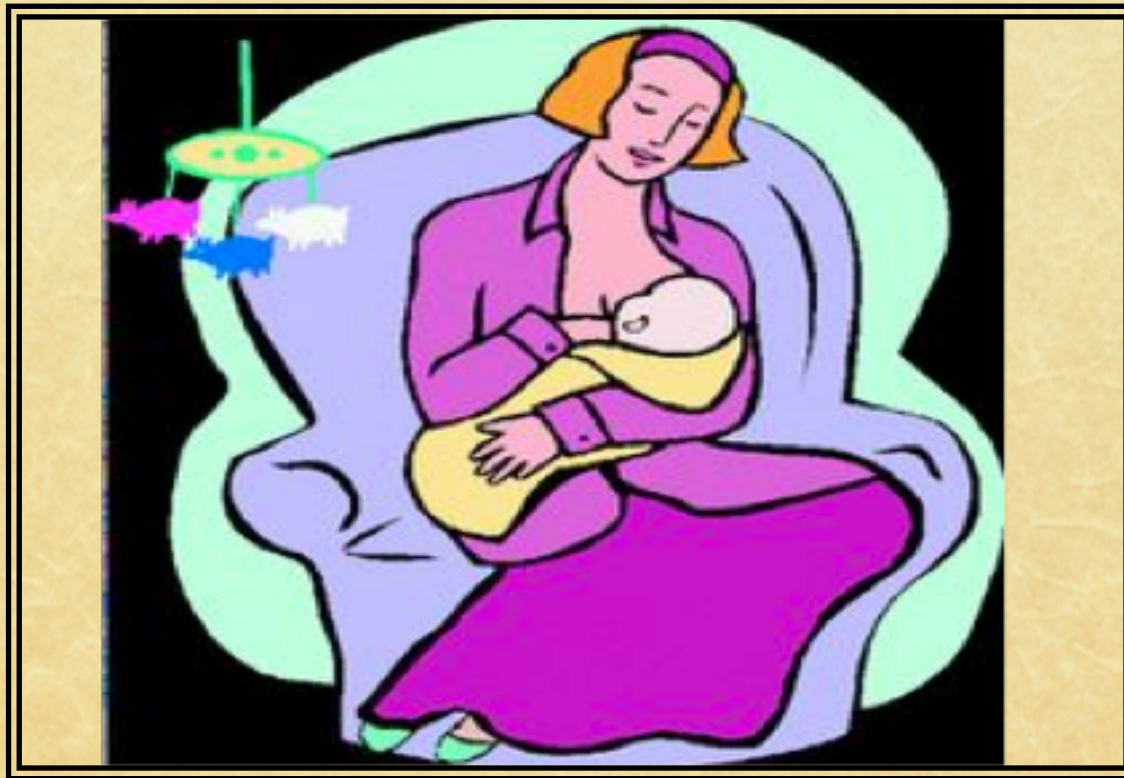
- ♦ Ideally, to minimize infant exposure, medication selection should favor drugs with a *shorter half-life, poorer oral absorption, and lower lipid solubility*.
- ♦ If multiple daily drug doses are required, then each is taken by the mother *after the closest feed*. Single daily-dosed drugs may be taken just *before the longest infant sleep interval*—usually at bedtime

Drugs Secreted in Milk

- ♦ There are only a few drugs that are absolutely contraindicated while breast feeding
 - ♦ Cytotoxic drugs may interfere with cellular metabolism and potentially cause immune suppression or neutropenia, and affect growth (Examples include cyclophosphamide, cyclosporine, doxorubicin, methotrexate, and mycophenolate)
 - ♦ Radioactive isotopes of copper, gallium, indium, iodine, sodium, and technetium rapidly appear in breast milk. The *goal is to use a radionuclide with the shortest excretion time in breast milk.*
 - ♦ The mother should pump her breasts before the treatment and store enough milk in a freezer for feeding the infant.
 - ♦ After the treatment, she should pump her breasts to maintain milk production but discard all milk produced during the time that radioactivity is present.

Breast engorgement

- ♦ Common in women who do not breast feed and is typified by *milk leakage and breast pain*.
- ♦ Breasts can be supported with a well- fitting brassiere, breast binder, or “sports bra.” *Cool packs and oral analgesics* for 12 to 24 hours aid discomfort. Pharmacological or hormonal agents are not recommended to suppress lactation.
- ♦ Fever seldom persists for longer than 4 to 16 hours.



**Maternal Care during the
Puerperium**

Hospital care

- ♦ For 2 hours after delivery, *blood pressure and pulse* should be taken *every 15 minutes*
- ♦ Temperature is assessed every 4 hours for the first 8 hours and then at least every 8 hours subsequently
- ♦ The amount of *vaginal bleeding is monitored*, and the fundus palpated to ensure that it is well contracted.
 - ♦ If relaxation is detected, the uterus should be massaged through the abdominal wall until it remains contracted. Uterotonics are also sometimes required.
 - ♦ Because the likelihood of significant hemorrhage is greatest immediately postpartum, even in normal births, the uterus is closely monitored for at least 1 hour after delivery.

Hospital care

- ♦ Women are encouraged **early ambulation** → advantages of early ambulation include fewer bladder complications, less frequent constipation, and reduced rates of puerperal venous thromboembolism.
- ♦ Two hours after normal vaginal delivery, if there are no complications, a woman should be allowed to eat.
- ♦ With breast feeding, the level of calories and protein consumed during pregnancy should be increased slightly. If the mother does not breast feed, dietary requirements are the same as for a nonpregnant woman.
- ♦ It is standard practice in our hospital to continue **oral iron supplementation for at least 3 months after delivery** and to check the hematocrit at the first postpartum visit.

Perineal Care

- ♦ The woman is instructed to cleanse the vulva from anterior to posterior—the vulva toward the anus.
- ♦ A cool pack applied to the perineum may help reduce edema and discomfort during the first 24 hours if there is a laceration or an episiotomy.
- ♦ Severe discomfort usually indicates a problem, such as a hematoma within the first day or so and infection after the third or fourth day

Bladder function

- ♦ Urinary retention and bladder overdistention is common in the early puerperium.
 - ♦ **Oxytocin** (typically infused postpartum) has an *antidiuretic* effect
 - ♦ both bladder sensation and capability to empty spontaneously may be diminished by local or conduction (*epidural analgesia, prolonged labor duration (>10h), catheterization during labor, operative vaginal delivery, or UTI*)
- ♦ Prevention of bladder overdistention demands observation after delivery to ensure that the bladder does not overfill and that it empties adequately with each voiding.
- ♦ An enlarged bladder can be palpated suprapubically, or it is evident abdominally indirectly as it elevates the fundus above the umbilicus.
- ♦ If a woman has not voided within 4 hours after delivery, it is likely that she cannot void spontaneously.
- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Bladder function

- ♦ With an overdistended bladder, an **indwelling catheter** should be left in place until the factors causing retention have abated.
- ♦ Even without a demonstrable cause, it usually is **best to leave the catheter in place for at least 24 hours** → prevents recurrence and allows recovery of normal bladder tone and sensation.
- ♦ **When the catheter is removed, it is necessary subsequently to demonstrate ability to void appropriately.** If a woman cannot void after 4 hours, she should be catheterized and the urine volume measured.
 - ♦ **If more than 200 mL:** the bladder is not functioning appropriately, and the catheter is left for another 24 hours.
 - ♦ **If less than 200 mL** of urine is obtained: the catheter can be removed and the bladder rechecked subsequently as just described.

“Postpartum blues”

- ♦ It is fairly common for a mother to exhibit some degree of *depressed mood a few days after delivery*.
 - ♦ consequence of several factors that include emotional letdown that follows the excitement and fears experienced during pregnancy and delivery, discomforts of the early puerperium, fatigue from sleep deprivation, anxiety over the ability to provide appropriate infant care, and body image concerns.
 - ♦ treatment includes anticipation, recognition, and reassurance.
 - ♦ This disorder is usually *mild and self-limited to 2 to 3 days*, although it sometimes lasts for up to 10 days. Should these moods persist or worsen, an evaluation for symptoms of major depression is done
- ♦ Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, Casey BM, Sheffield JS (eds). William's Obstetrics 24th edition; 2014; chapter 36

Postpartum contraception

- ♦ Women not breast feeding have return of menses usually within 6 to 8 weeks. **Ovulation** occurs at a **mean of 7 weeks**, but ranges from 5 to 11 weeks
- ♦ Resumption of ovulation was frequently marked by return of normal menstrual bleeding.
- ♦ Breast-feeding episodes lasting 15 minutes seven times daily delayed menstrual/ovulation resumption (**LACTATION AMENORRHEA**)

Postpartum contraception

- ♦ Women who become sexually active during the puerperium, and who do not desire to conceive, should initiate contraception.
- ♦ For the breast-feeding woman, **progestin-only contraceptives**—mini-pills, depot medroxyprogesterone, or progestin implants—are recommended (these do not affect the quality or quantity of milk)

TABLE 36-4. Some Hormonal Contraceptive Regimen
for Breast-Feeding Women^a

Progestin-only “mini pill”

Intramuscular depot medroxyprogesterone acetate

Progesterone-releasing implants

Progesterone-releasing intrauterine systems

Combination oral contraceptives—low-dose estrogen

^aSee also Chapter 38 (p. 695).

Follow-Up Care

- ♦ By discharge, women who had an uncomplicated course can resume most activities, including bathing, driving, and household functions.
- ♦ Ideally, the care and nurturing of the infant should be provided by the mother with ample help from the father.
- ♦ Postpartum visit to the health care provider is recommended between 4 and 6 weeks → to identify abnormalities beyond the immediate puerperium and to initiate contraceptive practices.

Summary

- ♦ Definition of Puerperium
- ♦ Involution of the reproductive tract
- ♦ Placental site involution
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- ♦ Home care

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