جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

Al-Mustaqbal University
Nursing College

Postpartum changes in the mother

After Birth

Prof. Saadya Hadi Humade

KEY TERMS

afterpains
attachment
bonding
colostrum (kŏ-LŎS-trŭm,
diastasis recti (dī-ĂS-tă-sĭs RĔK-tī,
episiotomy
foremilk
fundus
galactogogues (gă-LĂK-tō-gŏgz,
hindmilk
interconceptual care
involution (ĭn-vō-LŪ-shŭn,
let-down reflex
lochia (LŌ-kē-ă,
postpartum blues
puerperium (pū-ŭr-PĔ-rē-ŭm,
rugae
suckling

Postpartum changes in the mother

After childbirth, the body undergoes several changes to return to its prepregnant state, driven largely by hormonal shifts and uterine involution.

1.Hormonal Changes: After childbirth, levels of hormones like human placental lactogen, human chorionic gonadotropin, estrogen, and progesterone drop, helping the body return to its pre-pregnant state.

2.Uterine Involution: This is the process by which the uterus shrinks and returns to its prepregnancy size. It starts immediately after birth and is typically complete within 5 to 6 weeks as the uterus sheds its lining and contracts.

3.Subinvolution: If the uterus does not return to its normal size within 6 weeks, it's called subinvolution. This can occur due to issues like retained placenta or infection and requires medical attention.

Uterine Lining and Fundus After Birth

Uterine Lining:

•**Endometrium and Decidua**: The uterine lining is known as the **endometrium** when not pregnant and **decidua** during pregnancy.

•**Basal Layer**: After childbirth, the basal layer of the decidua remains intact and helps regenerate a new endometrium for future pregnancies.

•**Healing**: The site where the placenta was attached fully heals within **6 to 7 weeks** postpartum.

Descent of the Uterine Fundus:

•**Fundus Descent**: The uterine fundus (the top portion of the uterus) descends predictably after delivery. This process is aided by uterine muscle contractions, which help control bleeding at the placental site and reduce the size of muscle cells.

- **Immediately after delivery**: The fundus can be felt midline at or below the level of the umbilicus, and it feels firm, about the size of a grapefruit.
- **24 hours postpartum**: The fundus begins to descend at a rate of about **1 cm (1 finger's width) per day**.
- **By 10 days**: The fundus should no longer be palpable.

Impact of a Full Bladder:

•A **full bladder** can interfere with uterine contractions, as it may push the fundus upward and cause it to deviate, usually to the **right side**. This can hinder proper involution and may cause discomfort or complications.

Summary:

•The uterine lining (endometrium) regenerates from the basal layer after birth, and the placental site heals within 6-7 weeks.

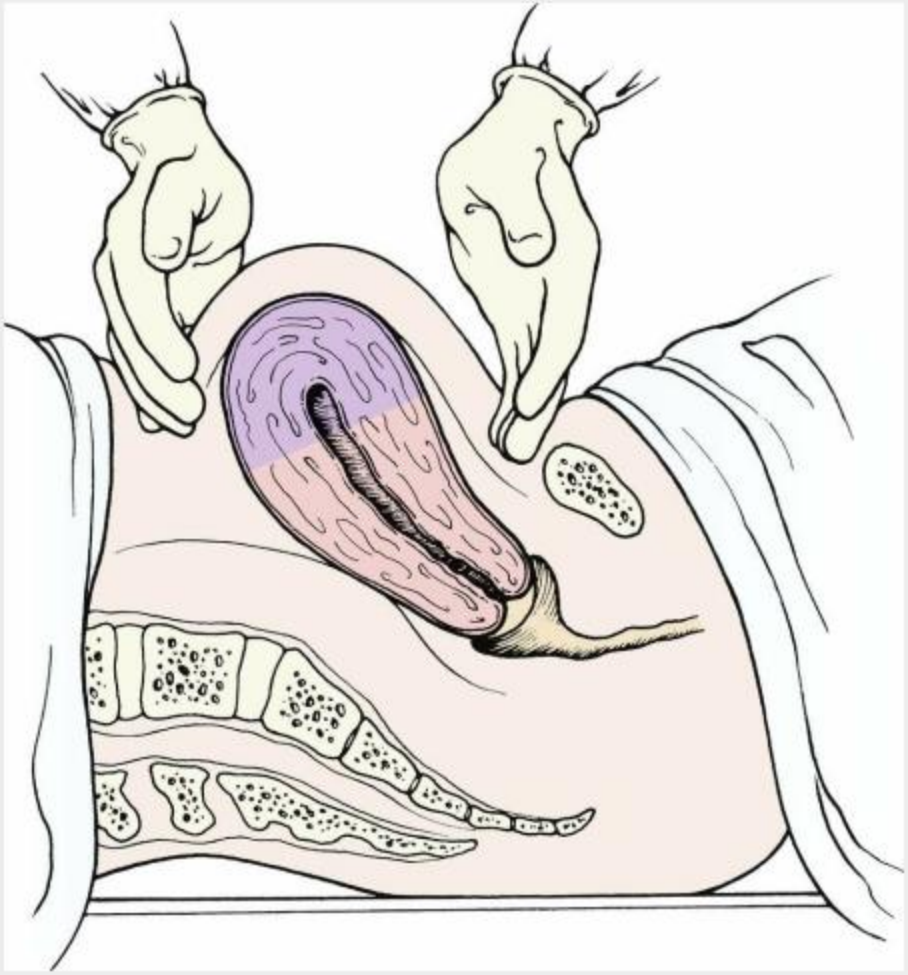
•The uterine fundus descends at a rate of 1 cm per day and should no longer be palpable by 10 days postpartum.

•A full bladder can affect the descent of the fundus, causing it to deviate, usually to the right side.

To prevent excessive postpartum bleeding:

1. **Identify need for fundal massage**: If the uterus is soft and above the umbilicus, massage is required; a firm fundus doesn't need it.
2. **Position the woman**: Have her lie on her back with knees flexed, lower the perineal pad to check lochia.
3. **Anchor the uterus**: Place the non-dominant hand just above the symphysis pubis to stabilize the lower uterus.
4. **Massage the fundus**: Use the dominant hand in a firm, circular motion on the uterine fundus.
5. **Expel blood/clots**: Gently push downward to expel any accumulated blood or clots while preventing inversion of the uterus.
6. **Check for a full bladder**: Encourage voiding or catheterize if needed to prevent uterine relaxation.
7. **Document**: Record the consistency and location of the fundus before and after massage.
8. **Administer medications**: Give prescribed drugs like oxytocin to maintain contractions.
9. **Encourage breastfeeding**: Nursing stimulates natural oxytocin release to help uterine contraction.
10. **Report issues**: Notify healthcare providers if the fundus doesn't stay firm.

These steps help manage uterine tone and prevent excessive bleeding postpartum.



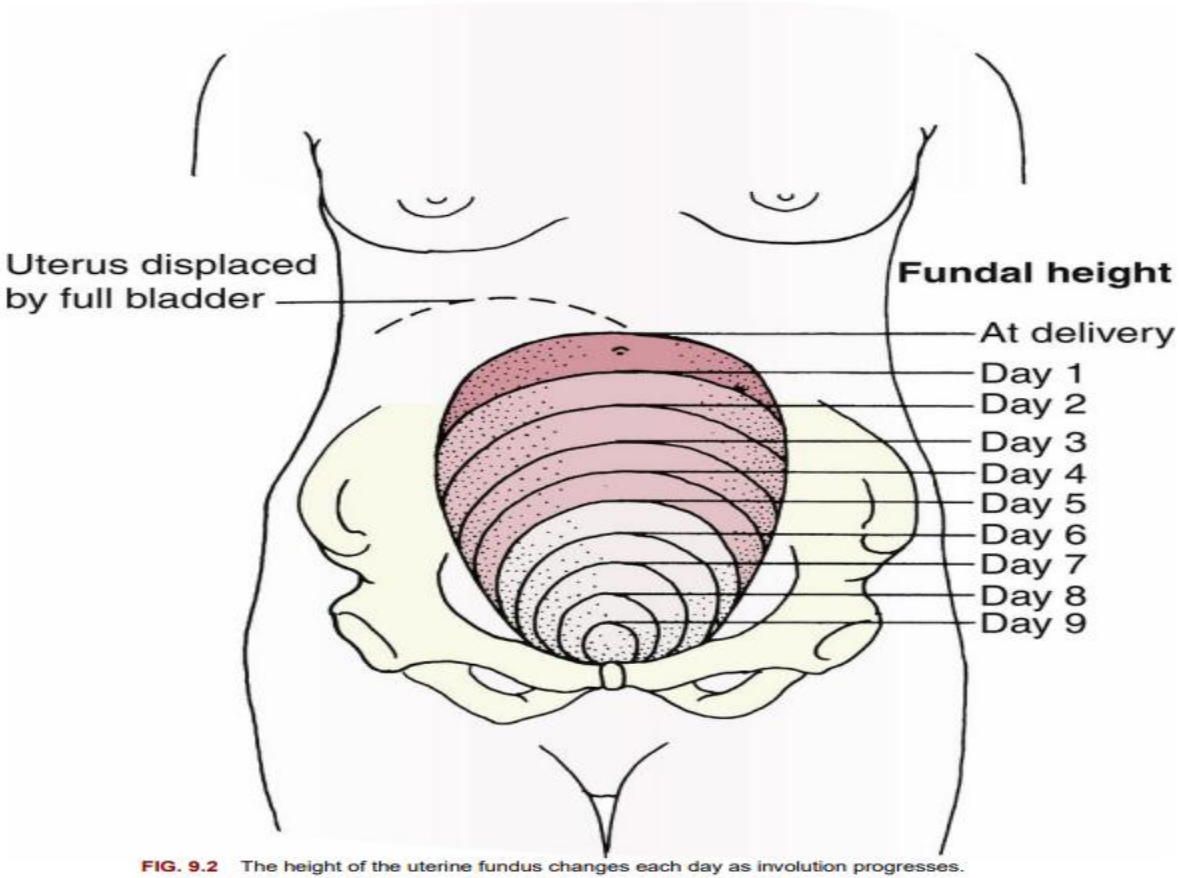


FIG. 9.2 The height of the uterine fundus changes each day as involution progresses.

Nursing Tip

If the mother's uterus is soft, massage it (supporting the lower segment), then expel clots so it will remain contracted. If her bladder is also full, massage the uterus until firm, and then address emptying the bladder. Control bleeding first, and then keep it controlled by emptying the bladder.

Afterpains

- **Description**: Afterpains are **intermittent uterine contractions** that occur after childbirth, similar to **menstrual cramps**.
- **Duration**: The discomfort is **self-limiting** and typically decreases within **48 hours postpartum**.
- **Occurrence**: Afterpains are more common in **multiparous women** (those who have had multiple pregnancies) and women whose **uterus was overly distended** (e.g., with a large baby or multiple pregnancies).
- **Breastfeeding Impact**: **Breastfeeding mothers** may experience more afterpains because **newborn suckling** stimulates the release of **oxytocin** from the posterior pituitary, which causes uterine contractions.
- **Pain Management**: **Mild analgesics** (e.g., ibuprofen) may be prescribed to manage discomfort. **Aspirin** is avoided postpartum, as it can interfere with **blood clotting**.

Lochia (Postpartum Vaginal Discharge)

Lochia is the vaginal discharge following childbirth, consisting of **endometrial tissue**, **blood**, and **lymph**. It undergoes several stages as the body recovers:

1.Lochia Rubra:

1. **Color**: Red
2. **Composition**: Primarily blood
3. **Duration**: Lasts about **3 days** after birth.

2.Lochia Serosa:

1. **Color**: Pinkish
2. **Composition**: Blood mixed with mucus
3. **Duration**: Lasts from about the **3rd to the 10th day** postpartum.

3.Lochia Alba:

1. **Color**: Clear, colorless, or white
2. **Composition**: Primarily mucus
3. **Duration**: Lasts from **10th to the 21st day** postpartum.

•**Odor**: Lochia has a characteristic **fleshy or menstrual** odor, but it should not have a **foul odor**, which could indicate infection.

Fundus Check and Lochia Assessment Summary:

1.Fundus Check: The top of the uterus (fundus) should be checked regularly for firmness. An uncontracted uterus can lead to excessive bleeding and increase the risk of postpartum hemorrhage.

2.Perineal Pads with Cold or Warm Packs: Perineal pads with cold or warm packs are used for comfort but absorb less lochia, which must be considered when estimating the amount of vaginal discharge.

3.Monitoring Lochia Volume: To monitor excessive lochia, a clean pad should be applied and checked within 15 minutes to assess the flow.

4.Weighing Pads: The pads used during a specific time should be weighed or counted to estimate the volume of blood loss. 1 gram of weight equals approximately 1 mL of blood.

5.Assessing Underpads: Nurses should also check underpads for signs of excessive bleeding if the blood has overflowed onto them.

Skill 9.2: Estimating the Volume of Lochia

Purpose: To assess the **normal progress** of the postpartum period and ensure that the lochia discharge is within expected limits.

Steps:

1.Assess Lochia for Quantity, Type, and Characteristics:

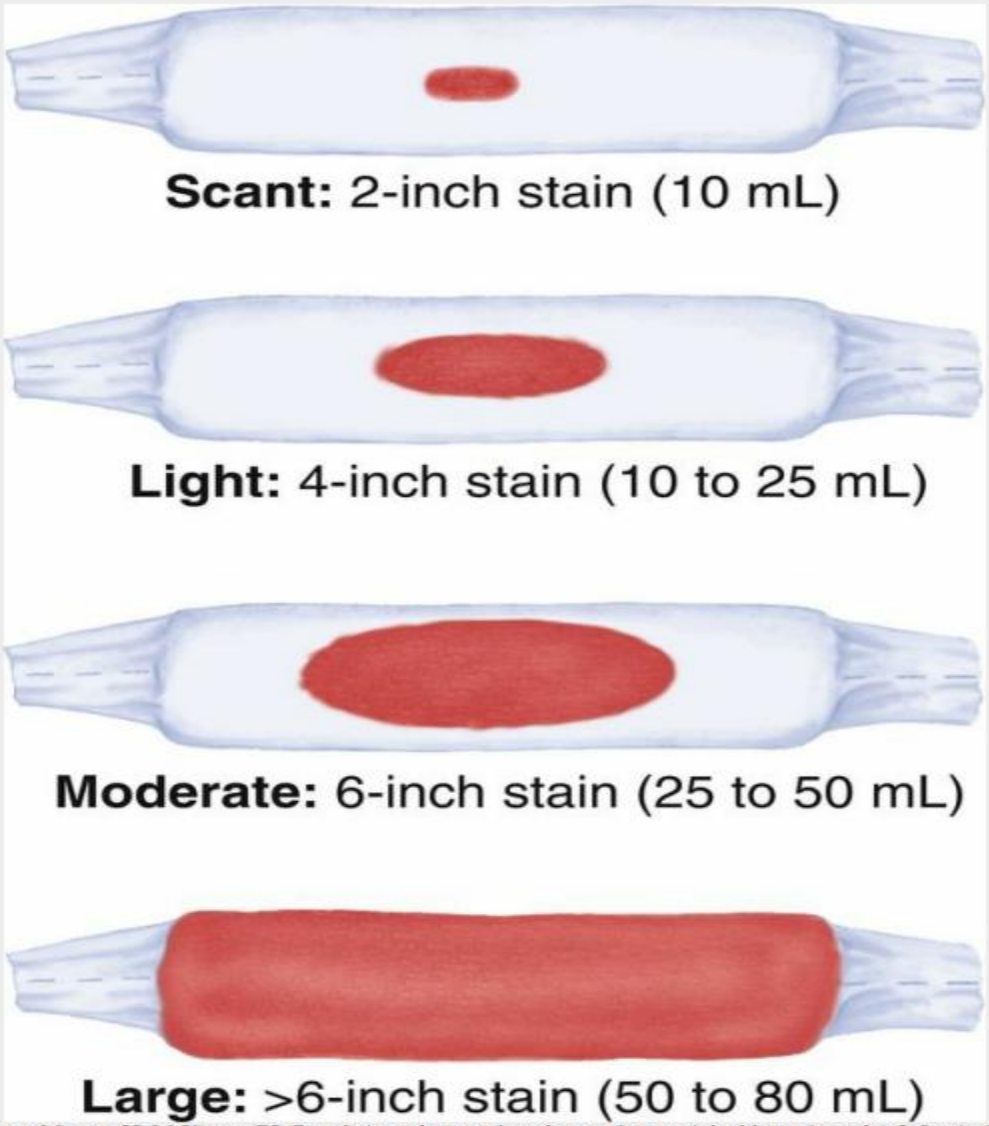
1. Evaluate the **amount**, **type**, and **characteristics** of lochia (rubra, serosa, alba) during each postpartum check.

2.Estimate and Chart the Amount of Lochia on the Menstrual Pad in 1 Hour:

1. Use the following guidelines to assess the **quantity** of lochia on the menstrual pad:
    1. **Scant**: Less than a **5-cm (2-inch)** stain.
    2. **Light**: Less than a **10-cm (4-inch)** stain.
    3. **Moderate**: Less than a **15-cm (6-inch)** stain.
    4. **Large or Heavy**: **Larger than a 15-cm stain** or one pad **saturated within 2 hours**.
    5. **Excessive**: Saturation of a perineal pad **within 15 minutes**.

Summary:

To track postpartum progress, assess the lochia's **quantity, type, and characteristics**. Use specific measurements to estimate the amount of discharge and chart it accordingly. If the lochia is **excessive**, immediate attention is needed.



From Murray SS, McKinney ES: *Foundations of maternal-newborn and women's health nursing*, ed 6, St Louis, 2014, Saunders.

Lochia Flow and Factors Affecting It

1.Effect of Ambulation:

1. The flow of lochia **briefly increases** when the mother **ambulates** (gets up or moves around), as **pooled lochia** in the vagina is discharged when she assumes an upright position.
2. **Small clots** may be seen at this time, but **large clots** should not be present. The presence of large clots may indicate a problem, such as excessive bleeding or uterine complications.

2.Effect of Breastfeeding:

1. The **quantity of lochia** may briefly **increase** during breastfeeding. This is due to **uterine contractions** triggered by **oxytocin** released during suckling, which helps expel any remaining lochia.

3.Effect of Exercise:

1. The **rate of lochia discharge** increases with **physical activity** or exercise as the movement stimulates uterine contractions and the expulsion of lochia.

4.Cesarean Birth:

1. Women who have a **cesarean birth** may experience **less lochia** during the **first 24 hours**, as the **uterine cavity** is **sponged** or cleaned out during the surgery, reducing initial discharge.

5.Absence of Lochia:

1. The **absence of lochia** is **not normal** and may indicate issues such as **retained blood clots** or an **infection** in the uterus. Further evaluation is necessary if lochia is absent.

Nursing Care Summary:

1.Fundus Assessment: The nurse regularly checks the fundus for firmness, location, and position in relation to the midline. Women at higher risk for postpartum hemorrhage should be monitored more frequently.

2.Patient Education: During initial assessments, the nurse explains the reasons for the checks and teaches the woman how to assess her own fundus. The woman is advised to report if her uterus stops descending.

3.Massaging a Boggy Uterus: If the uterus is soft or boggy (poorly contracted), it should be massaged until firm to prevent hemorrhage.

4.Lochia Flow: Lochia flow may briefly increase as the uterus contracts and expels it. It is important to avoid pressing on an uncontracted uterus to prevent inversion.

5.Bladder and Uterine Contraction: A full bladder may hinder uterine contractions. The mother should be assisted to void, either in the bathroom or using a bedpan. If she cannot void, catheterization may be needed.

Abnormal Characteristics to Report:

1.Foul-smelling lochia, with or without fever.
2.Lochia rubra that persists beyond the third day.
3.Unusually heavy lochia flow.
4.Lochia returning to a bright red color after it has progressed to serosa or alba.

Medications for Uterine Contraction:

1.Oxytocin (Pitocin): Typically administered via IV infusion after birth to stimulate uterine contractions.
2.Methylergonovine (Methergine): Given either intramuscularly or orally to help with uterine contraction.
Breastfeeding Impact: A newborn suckling stimulates the release of oxytocin, which also promotes uterine contractions.
Pain Relief: Mild analgesics are usually sufficient to relieve afterpains for most women. Breastfeeding mothers should take an analgesic right after breastfeeding.
Persistent Afterpains: If afterpains last longer than 48 hours after birth, the mother should report it.

Postpartum Cervix and Vagina Changes:

•**Cervix**: The cervix regains tone but does not return to its pre-pregnancy tightness. Some swelling may persist, and constant bright red lochia could signal bleeding from cervical or vaginal lacerations, especially if the uterus remains firm.

•**Vagina**: The vagina stretches during childbirth, with vaginal folds (rugae) disappearing temporarily. Rugae reappear after about 3 weeks, and by 6 weeks postpartum, the vagina mostly returns to its pre-pregnancy form, though it does not return to its original size.

Nursing Care for Sexual Activity Resumption:

- **Sexual Activity**: Many couples hesitate to ask about resuming sexual activity after childbirth, and some may do so before the 6-week checkup. It is important for the nurse to inform the woman that it is generally safe to resume intercourse once bleeding has stopped and the perineum (including any episiotomy) has healed.
- **Kegel Exercises**: The nurse should instruct the woman on how to correctly perform Kegel exercises. These exercises help strengthen the pelvic muscles, which are involved in urination, bowel function, and vaginal tone.

Perineum Postpartum Changes:

- The perineum is typically edematous (swollen), tender, and bruised after childbirth.
- An **episiotomy** (incision to enlarge the vaginal opening) may have been performed, or a **perineal laceration** may have occurred.
- Women with **hemorrhoids** may experience temporary worsening due to the pressure during the birth process.

Nursing Care for Perineal Assessment:

1. **Preparation**: Ensure privacy and explain the procedure to the woman.
2. **Wear Gloves**: Put on gloves to protect from contact with bodily fluids.
3. **Positioning**: Ask the woman to turn onto her side, flex her upper leg, lower the perineal pad, and lift the upper buttock. Use a flashlight if necessary to inspect the perineum.
4. **Inspection**: Observe for edema, bruising, and hematomas.
5. **Examine for REEDA**: Assess episiotomy or laceration for **REEDA** (Redness, Edema, Ecchymosis, Discharge, Approximation).
6. **Hemorrhoids**: Observe hemorrhoids for the extent of edema, as it can interfere with bowel elimination.
7. **Apply Clean Peripads**: Place clean perineal pads, ensuring only the edges are touched.
8. **Reposition the Woman**: Return her to a comfortable position.
9. **Dispose and Clean**: Dispose of soiled materials in the appropriate waste container and wash hands.
10. **Documentation**: Document all care provided in the medical record.

Memory Jogger for Perineal Assessment (REEDA):

1.Redness: Some redness is normal as part of the healing process, but if accompanied by pain, it may suggest infection.

2.Edema: Mild edema (swelling) is common after childbirth, but severe edema can hinder healing.

3.Ecchymosis (Bruising): Small superficial bruises are typical, but large bruises can interfere with normal healing.

4.Discharge: There should be no discharge from the perineal suture line, as this indicates healing.

5.Approximation: The suture line should be intact with no separation. If properly healed, it should blend with the surrounding skin folds, making the laceration or episiotomy difficult to distinguish.

Comfort and Hygienic Measures for Perineal Care:

1.Ice Pack: Apply an ice pack or chemical cold pack for the first 12 to 24 hours to reduce edema, bruising, and numb the perineal area. A disposable rubber glove filled with ice chips can also be used. Cover the cold pack with a paper cover or washcloth to prevent tissue damage. After the ice melts, leave it off for 10 minutes before reapplying to maintain effectiveness.

2.Cultural Considerations: Some women may prefer heat for healing due to cultural beliefs and may resist using ice packs.

3.Heat Application: After 24 hours, heat can be applied through a chemical warm pack, a bidet, or a sitz bath to improve circulation and promote healing.

4.Sitz Bath: A sitz bath, which can circulate cool or warm water over the perineum, helps cleanse the area and increase comfort. A cool sitz bath with added ice cubes for 20 minutes often provides immediate pain relief.

Skill 9.4: Assisting with a Sitz Bath

Purpose: To promote the healing of the perineum through the application of moist heat or cold.

Steps:

1. **Prepare**: Wash hands, explain the procedure to the woman, and ensure privacy.
2. **Assessment**: Assess the woman's condition and determine if the procedure is appropriate.
3. **Setup**: Place the sitz bath on the toilet seat and turn on the water flow.
4. **Assisting the Woman**: Help the woman remove her pad and sit in the flow of water for 20 minutes.
5. **Post-Sitz Bath Care**: After the bath, assist the woman in gently patting the perineum dry from front to back and applying a clean perineal pad.
6. **Repositioning**: Help the woman return to her room and either to a chair or bed for further rest.
7. **Hygiene**: Wash hands after assisting with the procedure.
8. **Documentation**: Record in the medical record that the sitz bath was taken, including the woman's condition and the condition of the perineum.

(Courtesy Andermac, Inc., Yuba City, California.)

The woman is taught to do perineal care after each voiding or bowel movement to cleanse the area without trauma. A plastic bottle (peribottle) is filled with warm water, and the water is squirted over the perineum in a front-to-back direction. The perineum is blotted dry. Perineal pads (peripads) should be applied and removed in the same front-to-back direction to prevent fecal contamination of the perineum and vagina (Skill 9.5).

Skill 9.5: Performing Perineal Care

Purpose: To teach the woman proper perineal care techniques to promote healing and prevent infection.

Steps:

1. **Wash Hands**: Ensure proper hygiene before starting.
2. **Explain Procedure**: Explain the perineal care procedure to the woman.
3. **Assist to Bathroom**: Help the woman to the bathroom as needed.
4. **Instruct Handwashing**: Instruct the woman to wash her hands before and after each perineal care.
5. **Remove Soiled Pad**: Remove the soiled perineal pad from front to back and dispose of it in the appropriate waste container.
6. **Use Peribottle or Water**: Squeeze a peribottle or pour warm water or a cleansing solution over the perineum without opening the labia.
7. **Pat Dry**: Pat the area dry with a clean tissue. Use each tissue only once, patting from front to back, then discard it.
8. **Apply Medications**: Apply any prescribed medicated ointments or sprays as directed. Do not apply a perineal pad for 1 to 2 minutes to allow the medication to be absorbed.
9. **Apply Clean Pad**: Apply a clean perineal pad from front to back, touching only the edges of the pad to reduce infection risk.
10. **Avoid Flushing Immediately**: Do not flush the toilet until the woman is standing to prevent spray from reaching the perineum.
11. **Routine Care**: Perform perineal care after each voiding, bowel movement, or at least every 4 hours during the puerperium.
12. **Report Issues**: Report any clots, increase in lochia flow, or excessive abdominal cramping.

Topical Medications:

1.Hydrocortisone and Pramoxine (Epifoam): Reduces inflammation and numbs the perineal area.

2.Benzocaine (Americaine or Dermoplast): A local anesthetic that helps numb the area to relieve pain.

Additional Remedies:

- **Witch Hazel Pads (Tucks):** Used to soothe and relieve hemorrhoid discomfort.
- **Sitz Baths:** A warm water bath that helps alleviate pain and promote healing in the perineal area.

Techniques for Reducing Pain When Sitting:

- **Squeezing the Buttocks Together:** Instruct the mother to gently squeeze her buttocks together as she lowers herself to sit, and then relax them once seated. This can help ease the pressure on the perineum.
- **Air Ring (Donut Cushion):** An inflatable cushion that helps take pressure off the perineum when sitting. The mother should inflate the cushion about halfway to provide adequate support.

Interconceptual Care:

This information is important for postpartum care and family planning.

Return of Menstruation:

•**Non-breastfeeding mothers:** Menstrual cycles typically resume about **5 weeks** after delivery.

•**Breastfeeding mothers (without formula supplementation):** Menstrual cycles generally return around **8 weeks** postpartum.

- The return of menstruation is influenced by the cessation of placental estrogen and progesterone, which leads to an increase in follicle-stimulating hormone (FSH), triggering the resumption of the menstrual cycle.

Contraception Discussion:

•**Initiate Contraceptive Teaching Before Discharge:** It's essential to discuss contraception options before the mother leaves the hospital. This is because she may not see her healthcare provider again until the 6-week postpartum appointment and may resume sexual activity before that time, increasing the risk of an unplanned pregnancy.

•**Importance of Birth Spacing:** Short intervals between pregnancies can have negative effects on maternal and infant health. Educating the mother about contraception options can help prevent unplanned pregnancies and promote better outcomes.

Key Takeaways:

•Postpartum contraceptive counseling is vital to prevent unplanned pregnancies, particularly if the mother is resuming sexual activity before her follow-up appointment.

•It's also important to consider birth spacing to ensure healthy outcomes for both the mother and any future pregnancies.

- **Natural Family Planning:** Cannot be reliably used before regular menstrual cycles resume, as ovulation can occur before menstruation, leading to a risk of pregnancy.
- **Contraceptives for Non-Breastfeeding Women:** Combined oral or transdermal estrogen-progesterone contraceptives can be started 2-3 weeks postpartum, as estrogen may suppress lactation.
- **Contraceptives for Breastfeeding Women:** A low-dose, progestin-only contraceptive can be started 4 weeks postpartum. Progestin-only contraceptives should be avoided in breastfeeding women with gestational diabetes due to a higher risk of developing type 2 diabetes.
- **Other Contraceptives:** Can be started once lactation is well-established.
- **Interconceptual Care:** This is postpartum care beyond 6 weeks, lasting up to 1 year, to ensure maternal health between pregnancies. Ideal pregnancy spacing is around 2 years.
- **Breast Changes:** Both nursing and non-nursing mothers experience breast changes after birth.

assessing breast changes in mothers:

- **Days 1-2 Postpartum:** Breasts are full but soft.
- **Day 3 Onward:** Breasts become firm and lumpy as blood flow increases and milk production begins.
- **Breast Engorgement:** Can occur in both nursing and non-nursing mothers. Engorged breasts are hard, erect, and very uncomfortable, and the nipple may become too firm for the newborn to easily latch.
- **Non-Nursing Mothers:** Breasts typically return to their normal size within 1-2 weeks.

nursing care for postpartum mothers:

- **Breast Assessment:** The nurse should check the breasts for consistency, size, shape, symmetry, and inspect the nipples for redness or cracking, as these can cause pain and increase the risk of infection.
- **Nipple Issues:** Flat or inverted nipples can make breastfeeding difficult, as they may prevent the newborn from latching properly.
- **Bra Support:** Both nursing and non-nursing mothers should wear a supportive bra. It should provide firm support but not be so tight as to restrict circulation.
- **Non-Nursing Mothers:** Some may prefer an elastic binder to suppress lactation. They should avoid nipple stimulation and wear a bra at all times to prevent friction from clothing. In the shower, they should face away from the water spray.
- **Breast Hygiene:** Non-nursing mothers should wash their nipples with plain water only, avoiding soap to prevent drying and cracking. They should minimize stimulation when washing the breasts.

the cardiovascular system postpartum:

•**Blood Volume and Cardiac Output:** During pregnancy, blood volume increases by 50%. Post-delivery, women tolerate blood loss of:

- **500 mL** in vaginal birth
- **1000 mL** in cesarean birth

•**Cardiovascular Adjustments:** Despite blood loss, there is a temporary increase in blood volume and cardiac output as blood from the uterus and placenta returns to the main circulation, and added fluid moves from tissues into circulation.

•**Heart Function:** The heart pumps more blood with each contraction (increased stroke volume), often leading to bradycardia (slower heart rate), with pulse rates potentially dropping to **50-60 beats/min** for about 48 hours postpartum.

•**Fluid Balance Restoration:** The body restores normal fluid balance through:

- **Diuresis:** Increased urine excretion, which can reach **3000 mL/day**.
- **Diaphoresis:** Excess fluid is lost through profuse sweating.

coagulation and blood cell changes postpartum:

- **Coagulation:** Blood clotting factors are higher during pregnancy and for 4 to 6 weeks postpartum, which increases the risk of blood clot formation. This is especially true if there is blood stasis, such as in women with varicose veins, those who have had a cesarean birth, or those with delayed ambulation.
- **Pulmonary Embolus:** Signs of a pulmonary embolus (blood clot in the lungs) include **dyspnea** (difficulty breathing) and **tachypnea** (rapid breathing), which require immediate medical attention.
- **Prophylactic Measures:** Women who undergo cesarean sections may receive **heparin** or use **pneumatic compression devices** on the legs to reduce venous congestion and improve circulation.
- **Hematocrit Levels:** Fluid shifts into the bloodstream dilute blood cells, lowering hematocrit levels. These values typically normalize by 8 weeks postpartum.
- **White Blood Cell Count:** Postpartum, the white blood cell count may rise to **12,000-20,000/mm³** due to inflammation, pain, and stress, which help protect the body as tissues heal. This elevated count returns to normal by about **12 days postpartum**.

chills and orthostatic hypotension postpartum:

•**Chills:** Many women experience tremors or "chills" immediately after birth, often due to the release of pressure on pelvic nerves and a vasomotor response involving epinephrine. Despite the tremors, most women do not feel cold. These chills typically resolve within **20 minutes**. The nurse should reassure the woman, provide comfort with a warm blanket, and monitor for chills accompanied by fever after 24 hours, which may indicate infection.

•**Orthostatic Hypotension:** After childbirth, resistance to blood flow in the pelvic vessels decreases, causing a drop in blood pressure when the woman sits or stands. This may lead to dizziness, lightheadedness, or fainting. **Assistance and guidance** are needed during early ambulation to prevent injury.

the nursing care after the fourth stage of labor:

•**Vital Signs:** Monitor vital signs every 4 hours for the first 24 hours.

- A temperature of up to **38°C (100.4°F)** is normal within the first 24 hours. A higher or persistent fever may indicate infection.
- **Pulse rate** is important to interpret alongside temperature and blood pressure. A high pulse rate can indicate infection or hypovolemia due to normal postpartum bradycardia.

•**Diaphoresis (Sweating):** If the woman experiences sweating, reassure her that it is temporary. Assist with a shower or sponge bath and provide dry clothes and bedding for comfort.

•**Edema:** Check for edema in the **lower extremities, hands, and face**. Lower extremity edema is common postpartum, while edema above the waist may signal **pregnancy-induced hypertension**.

•**Leg Assessment for Thrombosis:** Assess the legs for signs of thrombosis, including:

- **Superficial vein thrombosis**: Look for redness and tenderness.
- **Deep vein thrombosis**: Look for edema, pain, and possibly pallor.

These steps are essential for early detection of complications like infection, hypovolemia, and thrombosis.

•**Homans' Sign:** The presence of calf pain when the foot is dorsiflexed (Homans' sign) is not a reliable indicator of thrombosis in the postpartum phase.
•**Early Ambulation:** Encouraging early and regular ambulation helps reduce venous stasis and lowers the risk of blood clots.
•**Fall Risk:** The first time the woman gets out of bed, she is at increased risk for falls due to potential unstable blood pressure and syncope from the physiological changes after delivery. **Assistance with bedside sitting, toileting, and ambulation** is crucial, particularly for women who have had epidural analgesia or cesarean births.
•**Bladder Assessment:** The nurse should regularly assess the bladder for distention. A full bladder may not be felt by the woman, but it can cause the uterus to be high and deviated. If possible, the woman should ambulate to the bathroom and urinate.

- The first **2-3 voidings** after birth or catheter removal should be measured.
- Women who receive **IV infusions** or have an **indwelling catheter** should have their urine output monitored until the infusion and/or catheter is discontinued.

regarding the urinary system postpartum:

- **Kidney Function:** Kidney function typically returns to normal within a month after birth.
- **Bladder and Ureter Tone:** Due to pregnancy-related changes and IV fluids administered during labor, bladder and ureter tone may decrease, causing the bladder to fill quickly and empty incompletely.
- **Potential Complications:**
    - **Postpartum Hemorrhage:** A full bladder can displace the uterus, potentially leading to postpartum hemorrhage.
    - **Urinary Tract Infection (UTI):** Incomplete bladder emptying may result in urine stasis, increasing the risk of a urinary tract infection.

Monitoring and assisting with bladder function are important for preventing these complications.

the measures to help a woman urinate postpartum:

- **Privacy:** Provide as much privacy as possible to help the woman feel comfortable.
- **Presence without Pressure:** Stay near the woman but avoid rushing her by constantly asking if she has urinated.
- **Water Assistance:** Run water in the sink, or have the woman place her hands in warm water to stimulate urination.
- **Peribottle Use:** Encourage the woman to use a peribottle with warm water to squirt over her perineal area to help relax the urethral sphincter. Remember to measure the amount of water in the peribottle before use to account for it when measuring urine output.
- **Discomfort vs. Infection:** Some discomfort with early urination is normal due to edema and trauma. However, **persistent burning or urgency** may indicate a bladder infection. **High fever and chills** can be signs of a kidney infection and should be promptly addressed.

These measures can assist with relieving urinary difficulties while monitoring for possible infections.

the gastrointestinal system postpartum:

•**Gastrointestinal Resumption:** The gastrointestinal system resumes normal activity shortly after birth due to the decrease in progesterone levels.

•**Increased Hunger:** After the physical exertion of labor and food deprivation, new mothers are typically very hungry and may require frequent food and water intake.

•**Constipation Risks:** Several factors contribute to constipation during the postpartum period:

- **Medications** may slow peristalsis (intestinal movement).
- **Abdominal muscle stretching** during pregnancy can make it harder to bear down and expel stool. A cesarean incision further complicates this.
- **Hemorrhoids or perineal soreness** may make the woman apprehensive about her first bowel movement.
- **Slight dehydration** and minimal food intake during labor can make stool harder and more difficult to pass.

These factors highlight the importance of supporting the mother with adequate hydration, nutrition, and comfort to prevent and manage constipation.

nursing care strategies for managing postpartum constipation:

- **Hydration and Diet:** Ensuring adequate fluid intake and fiber in the diet, along with encouraging ambulation, promotes regular bowel movements.
- **Stool Softeners:** Medications like **docusate** help ease bowel movements by softening the stool.
- **Building on Knowledge:** Nurses can reinforce effective constipation management strategies the woman used during pregnancy to continue promoting comfort.
- **Laxatives:** If needed, **bisacodyl** is a common option for more significant constipation relief, whether taken orally or as a suppository.

These nursing interventions are essential for supporting the mother's recovery and preventing discomfort from constipation in the postpartum period.

the changes in the integumentary and musculoskeletal systems postpartum:

Integumentary System:

- **Hyperpigmentation:** Conditions like **chloasma (mask of pregnancy)** and the **linea nigra** fade as hormone levels decrease after childbirth.
- **Striae (Stretch Marks):** These do not disappear but fade from reddish-purple to silver over time.

Musculoskeletal System:

- **Abdominal Wall Changes:** The abdominal wall, which was greatly stretched during pregnancy, may appear doughy after birth. While some women may still look pregnant, time and exercise can help tighten the abdominal muscles.
- **Diastasis Recti:** This condition involves the separation of the longitudinal abdominal muscles and can persist for 6 to 8 weeks. It may contribute to constipation and requires time for recovery.
- **Joint Hypermobility:** The joints, especially in the feet, may remain more flexible postpartum, and some women may notice an increase in shoe size. Joint stability typically returns within 6 weeks.
- **Center of Gravity:** The body’s center of gravity normalizes as the uterus returns to its prepregnant size.

These changes are part of the body's recovery process after childbirth, and while some may take time, most will improve with time, exercise, and proper care.

postpartum exercise guidelines and exercises:

•**Exercise Start:** Women who have had a vaginal birth can begin light exercises on the first day postpartum. Those with a cesarean birth may need to wait longer and should consult their healthcare provider for specific instructions.

Common Postpartum Exercises:

1.Abdominal Tightening: Contract and relax abdominal muscles, starting with 3 repetitions and increasing to 10. Perform 3-5 times daily.

2.Head Lift: Lift the head and chin to the chest, holding for 3 seconds, then relax. After 3 weeks, progress to include shoulders. Do 5-10 times daily.

3.Pelvic Tilt: Flatten lower back to the bed by contracting abdominal muscles. Start with 5 repetitions, increasing to 10, performed daily.

These exercises help strengthen the abdominal muscles and support postpartum recovery.

- **Kegel Exercises Postpartum:**

•**Purpose:** Kegel exercises help promote circulation, healing, and strengthen the perineal muscles after birth.

•**Technique:** The mother tightens the perineal muscles (as if stopping the flow of urine), holds for a count of 10 while inhaling, then exhales and relaxes.

•**Frequency:** Initially, she should perform the exercise five times per hour for the first few days, then gradually increase repetitions.

•**Important Reminder:** The mother should avoid actually stopping her urine flow during urination to prevent urine stasis and the risk of urinary tract infections.

These exercises support pelvic floor recovery and overall postpartum health.

Immune System and Prevention of Blood Incompatibility:

•Rho(D) Immune Globulin (RhoGAM):

- **Indication:** If an Rh-negative mother gives birth to an Rh-positive newborn, she should receive **RhoGAM** within 72 hours postpartum to prevent sensitization to Rh-positive blood cells.
- **Action:** RhoGAM prevents the mother's immune system from forming antibodies against Rh-positive erythrocytes (red blood cells) that may have entered her bloodstream during childbirth.
- **Administration:** RhoGAM is given as an **intramuscular injection** into the deltoid muscle of the mother, not the newborn.
- **Documentation:** The mother receives an **identification card** confirming she is Rh-negative and has received RhoGAM on that date.

This process helps avoid complications in future pregnancies, where Rh incompatibility could lead to hemolytic disease of the newborn.

Rubella (German Measles) Immunization:

- **Rubella Titer Testing:**
  - **Purpose:** A rubella titer is done early in pregnancy to check immunity to rubella. A titer of **1:8 or greater** indicates immunity.
  - **For Non-Immune Women:** If the woman is not immune, she is given the **rubella vaccine** postpartum.
- **Vaccine Administration:**
  - **Timing:** The rubella vaccine is administered **immediately postpartum** to prevent future rubella infections, which can cause birth defects.
  - **Consent:** A signed **informed consent** is usually required.
  - **Route:** The vaccine is given **subcutaneously in the upper arm**.
- **Post-Vaccination Guidelines:**
  - Women should avoid pregnancy for **1 month** after receiving the vaccine.
  - **Contraindications:** The vaccine should not be given to women who are allergic to **neomycin**.
  - **Breastfeeding:** Women vaccinated postpartum can **breastfeed** without any adverse effects on the newborn.

This vaccination helps protect the woman in future pregnancies and reduces the risk of rubella-related birth defects.

Adaptation of Nursing Care Following Cesarean Birth:

- **Emotional Reactions:** Women who have a cesarean birth, especially if unexpected, may experience confusion, anxiety, or feelings of failure. Terms like "failed induction" can contribute to emotional distress.
- **Nursing Care Needs:** Women may have many questions about the surgery, and it's important to provide clear, compassionate explanations and emotional support. Tailored care is required to address both physical recovery and emotional well-being after a cesarean.

Nurses should offer reassurance, help women process the experience, and support their recovery in both body and mind.

Nursing Care Plan 9.1: The Woman Having a Cesarean Birth

Patient Data:

•A 32-year-old woman is admitted to the postpartum unit after delivering a healthy 8-lb boy via cesarean section.

•The woman is lying still in bed and refuses to move due to fear of postoperative pain.

Critical Thinking Question:

1.How will your discharge teaching for a patient who delivered by cesarean section differ from that for a patient who delivered vaginally?

Differences in Discharge Teaching:

•**Postoperative Care:**

- **Cesarean Section:** Emphasize the importance of managing surgical pain, including the use of pain medications, proper wound care, and watching for signs of infection. Teach the woman about the incision site, how to care for it, and the need to avoid activities that could strain the abdomen (e.g., lifting, heavy exercise).
- **Vaginal Birth:** Focus on perineal care, managing any perineal discomfort, and using ice packs or sitz baths for comfort.

•**Activity Restrictions:**

- **Cesarean Section:** Advise on limited physical activity due to the abdominal surgery. Explain the need to avoid heavy lifting and abdominal strain. Encourage early ambulation to reduce the risk of blood clots but caution about sudden movements that could cause pain or harm to the incision site.
- **Vaginal Birth:** Encourage early ambulation and general movement without the same level of restriction.

•**Breastfeeding and Positioning:**

- **Cesarean Section:** Discuss comfortable breastfeeding positions that avoid putting pressure on the incision, such as side-lying or using a pillow for support.
- **Vaginal Birth:** Emphasize similar breastfeeding techniques, but without the added concern of abdominal pain from surgery.

•**Recovery Monitoring:**

- **Cesarean Section:** Discuss monitoring for signs of complications such as infection, bleeding, or blood clots. Reinforce the importance of follow-up visits to check on the incision and recovery.
- **Vaginal Birth:** Focus on monitoring for signs of vaginal bleeding or infection and the healing process of the perineum.

Uterine Assessment:

•As with any postpartum woman, the nurse should assess and document the **descent** and **firmness** of the **fundus** to ensure proper uterine contraction and the prevention of postpartum hemorrhage. This is critical for both cesarean and vaginal deliveries, but more attention may be given to incision care and abdominal assessment in cesarean births.

This care plan highlights the unique needs and teaching priorities for women who have undergone cesarean births, with a focus on pain management, activity restrictions, and incision care, while still addressing common postpartum concerns like uterine recovery and breastfeeding.

Postpartum Care for Cesarean Birth: Uterus, Lochia, and Dressing

Uterus:

- **Fundal Assessment:**
  - The nurse should check and document the **descent** and **firmness** of the **fundus** during routine assessments, similar to the approach for vaginal deliveries. The **fundus** should descend at the expected rate after both cesarean and vaginal births.
  - **Transverse Incision:** The process of checking the fundus is the same as for a vaginal birth.
  - **Vertical Incision:** For women with a vertical skin incision, the nurse should gently **walk** their fingers from the side toward the **abdominal midline** to assess the fundus.
- **Firmness and Level:**
  - If the fundus is firm and at the expected level, no massage is necessary.

Lochia:

- **Quantity and Changes:**
  - **Immediately After Cesarean Birth:** The quantity of lochia is generally **less** than after vaginal births because surgical sponges are used to remove the contents of the uterus during the procedure.
  - The **changes** in lochia (from rubra to serosa to alba) follow the same pattern as in vaginal births.

Dressing and Incision Care:

- **Dressing:**
  - If a **dressing** is present, it should be checked for **drainage**, just as with any surgical patient.
- **Incision Assessment:**
  - Once the dressing is removed, the nurse should assess the **incision site** for **signs of infection** (e.g., redness, swelling, drainage). The **wound** should be **clean and dry**, and **staples** or sutures should be intact.

These procedures ensure the woman's recovery is properly monitored, focusing on uterine involution, lochia changes, and incision care. The goal is to detect any potential complications, such as infection or bleeding, early in the postpartum period.

REEDA Acronym for Incision Assessment:

The **REEDA** acronym is an easy way to remember the key items to check when assessing a cesarean incision:

- **R** - **Redness**: Check for signs of infection or inflammation around the incision.
- **E** - **Edema**: Look for swelling around the incision site.
- **E** - **Ecchymosis**: Check for any bruising or discoloration.
- **D** - **Drainage**: Assess for any unusual drainage, such as pus or excessive fluid.
- **A** - **Approximation**: Ensure the edges of the incision are well-aligned and the wound is closed properly.

Post-Discharge Care and Showering:

- **Staple Removal and Steri-Strips:**
  - Staples may be removed and **Steri-Strips** applied before the woman's discharge (typically around the third day). If the woman leaves earlier, the staples may be removed in her healthcare provider's office.
- **Showering Instructions:**
  - The woman can **shower** once she can ambulate reliably, as long as there are no complications.
  - **Shower Chair:** To prevent injury from fainting, a **shower chair** can be used.
  - **Covering the Incision:** The incision can be covered with **plastic wrap**, and the edges can be secured with tape to keep it dry during the shower.
- **Water Stream Positioning:**
  - The woman should position herself with her **back to the water stream** to avoid getting the incision wet.

- **Dressing Changes:**
  - After the shower, the dressing should be changed to ensure it remains clean and dry.
- **IV Infusion Sites:**
  - If the woman has an **IV infusion site** (e.g., in her hand), it can also be covered with a glove or other waterproof covering during the shower.

This guidance helps ensure proper incision care, promotes healing, and reduces the risk of complications during the recovery process following a cesarean birth.

Postpartum Urinary Catheter Care:

- **Catheter Removal:** The indwelling urinary catheter is typically removed within 24 hours after delivery.
- **Urine Assessment:** Blood in the urine may be present initially due to trauma from labor or surgery but should clear as diuresis occurs.
- **Monitoring Output:** Intake and output are tracked until the IV and catheter are discontinued. The first few voids are measured, and the woman should urinate at least 150 mL.
- **Signs of Urinary Tract Infection (UTI):** The nurse should observe for symptoms like:
    - Fever
    - Burning pain during urination
    - Urgency or frequency of urination, especially in small amounts.
- **Frequent Voiding:** Small, frequent voids with other symptoms could suggest a UTI, warranting further assessment.

This care ensures early detection and prevention of urinary complications like infections in the postpartum period.

Postpartum Respiratory and Thrombophlebitis Care:

•**Lung Sound Monitoring:** Lung sounds should be checked during each shift for clarity. Diminished breath sounds, crackles, or wheezes may indicate retained lung secretions.

•**Breathing and Coughing Exercises:**

- Encourage the woman to take **deep breaths** and **turn** from side to side every 2 hours, especially if bedridden.
- **Coughing** helps move secretions out of the lungs, and the nurse can suggest holding a small pillow or folded blanket against the incision to reduce pain while coughing.
- **Incentive spirometry** can be used to encourage deep breathing and provide a target for the woman.

•**Early Ambulation:** Encouraging early ambulation helps mobilize lung secretions and reduces the risk of respiratory complications.

•**Thrombophlebitis Prevention:**

- Women who have had a **cesarean birth** are at greater risk for **thrombophlebitis**. Prophylactic **heparin** and/or **pneumatic compression devices** may be used to reduce venous congestion.
- **Leg exercises** like flexing and extending the feet or moving the legs can help reduce the risk of thrombosis.
- Early, frequent ambulation also promotes circulation and reduces the risk of blood clots.

These interventions focus on maintaining lung health and preventing circulatory complications in the postpartum period.

Postpartum Pain Management:

- **Assessment:** Pain is measured on a **0-10 scale** to guide appropriate treatment.
- **Pain Relief:** Options include **epidural narcotics**, which require **respiratory monitoring** for up to 24 hours, and **PCA pumps** for self-administered relief.
- **Action if Uncontrolled:** Consult the healthcare provider if pain is not well-managed.

Postpartum Pain Management (PCA and Medication Timing):

- **PCA Pump:** Features a **lockout interval** to prevent overdose, ensuring the button press has no effect during this time.
- **Oral Analgesics:** Most women switch to **oral pain medication** the day after surgery.
- **Pain Medication Timing:** Women should **request pain relief** as soon as they feel discomfort.
- **Breastfeeding Considerations:** Taking pain medication **immediately after breastfeeding** minimizes the drug transfer to breast milk. This approach allows better pain control, helping the mother relax, breastfeed more effectively, and bond with her newborn.

Emotional Care for Postpartum Mothers:

- **Transition to Motherhood:** New mothers experience significant hormonal shifts, changes in body image, and adjustments to their new role, leading to emotional and psychological changes.
- **Mood Fluctuations: Postpartum emotions** often involve initial elation, followed by **mild depression** with symptoms like tearfulness, irritability, and fatigue, peaking around the fifth day. This usually resolves within a few days.
- **Potential for Clinical Depression:** Hormonal changes, combined with anxieties and stresses, can sometimes lead to **clinical depression**.
- **Three Phases of Adjustment:** The nurse should be familiar with the **three phases** of postpartum emotional changes, as women progress through them at varying speeds.
- **Teaching Opportunities:** During the **take-hold phase**, when the mother focuses on the newborn, she is most receptive to **teaching** about postpartum care. This phase presents a good time to provide essential information.

Postpartum Blues & Postpartum Depression:

- **Postpartum Blues:**
  - Common in the first few weeks after birth, involving conflicting feelings of joy and emotional letdown.
  - Symptoms are **temporary and self-limiting**.
  - The nurse should reassure the woman that these feelings are **normal** and prepare her for these emotions during discharge teaching.
- **Postpartum Depression:**
  - A **persistent mood of unhappiness** that lasts longer than the postpartum blues.
  - It is important to educate the mother that **ongoing depression** is not expected and should be reported to the healthcare provider.
- **Fatigue:**
  - An essential part of postpartum assessment, as it affects both **physical recovery** and **psychological bonding** with the newborn.

Fatigue in Postpartum Care:

- **Assessment:**
  - Postpartum care should include not only physical and psychological assessments but also a specific evaluation of maternal fatigue.
  - Many women are expected to quickly resume responsibilities, which can prevent adequate rest and adaptation during the postpartum period.
- **Relief Measures:**
  - Nurses should assess the level of fatigue and offer support by caring for the newborn for a few hours or organizing care that allows the mother to rest.
  - Discussing the home environment and available support systems before discharge is essential to help the mother manage fatigue.

Care Immediately After Birth:

1.Newborn Assessments and Ongoing Care:

1. After birth, the newborn's cardiorespiratory and heat-regulating functions are monitored. If stable, the newborn typically stays with the parents to encourage bonding and familiarity.
2. The nurse can assess vital signs like temperature, heart rate, and respirations while the parents hold the baby.

2.Physical and Gestational Age Assessment:

1. Within the first hour, the nurse completes a full physical and gestational age assessment of the newborn.

3.Prophylactic Medications:

1. The nurse administers necessary prophylactic medications to the newborn as part of standard care.

Care for Preterm and Postterm Newborns:

•Special care may be required for preterm (born before 37 weeks) or postterm (born after 42 weeks) newborns, depending on their health and developmental status.

Neonatal Transition Phases:

1.Phase 1: 0 to 30 Minutes (Period of Reactivity):

1. **Tachycardia:** Initially, the heart rate is elevated but gradually lowers to a normal rate.
2. **Irregular Respirations:** Breathing may be irregular.
3. **Rales:** Fine crackles may be present on auscultation.
4. **Alertness:** The newborn is typically alert with increased motor activity due to the sudden release from the confines of the uterus and response to light.
5. **Reflexes:** Moro (startle) reflex and tremors are common.
6. **Hypoactive Bowel Sounds:** Bowel sounds are typically absent or reduced.
7. **Sucking Reflex:** The sucking reflex is usually present during this phase.

2.Phase 2: 30 Minutes to 2 Hours (Decreased Responsiveness):

1. **Decreased Motor Activity:** The newborn's motor activity decreases, and the infant becomes less active.
2. **Rapid Respirations:** Breathing may be faster (up to 60 breaths per minute).
3. **Normal Heart Rate:** The heart rate returns to a normal rate for a term newborn.
4. **Audible Bowel Sounds:** Bowel sounds become more audible during this phase.

These phases represent the physiological adjustments the newborn makes after birth as they transition from intrauterine to extrauterine life.

- **Phase 3: 2 to 8 Hours (Second Period of Reactivity):**

•**Abrupt Changes:** The newborn may experience brief, sudden changes in color and muscle tone.

•**Oral Mucus:** Presence of oral mucus may cause gagging.

•**Responsiveness:** The newborn becomes more responsive to external stimuli.

•**Stabilization:** The newborn stabilizes and begins to develop suck-swallow coordination, preparing for regular feedings.

Supporting Thermoregulation in the Newborn:

•**Normal Temperature Range:**

- **Skin Temperature:** 36° to 36.5° C (96.8° to 97.7° F).
- **Axillary Temperature:** 36.5° to 37° C (97.7° to 98.6° F).

Maintaining body temperature is critical, as newborns have less efficient means of generating heat compared to older infants.

Risks of Hypothermia:

1.Hypoglycemia: Newborns use glucose to generate heat, so a drop in temperature can lead to low blood sugar levels.

2.Respiratory Distress: The increased metabolic rate needed to generate heat can consume more oxygen, leading to potential respiratory distress.

Because **hypoglycemia** and **respiratory distress** can both contribute to and result from hypothermia, it's important for nurses to monitor both conditions closely in newborns.

Newborns are vulnerable to rapid heat loss due to several mechanisms:

1.Evaporation: Loss of heat occurs when amniotic fluid evaporates from the skin.

2.Conduction: Heat is transferred from the newborn to a cold surface upon direct contact.

3.Convection: Heat is lost when drafts or cold air move away from the newborn's body.

4.Radiation: Heat is lost to nearby cold objects without direct contact.

These factors, especially evaporation and contact with cold surfaces, make newborns prone to rapid temperature loss after birth. Effective interventions, such as drying the newborn, avoiding cold surfaces, and providing warmth, are essential for maintaining body temperature.

The newborn remains in a radiant warmer and is monitored until the temperature is stabilized :

1. **Radiant Warmer**: Newborn is placed under a radiant warmer and monitored until temperature stabilizes.

2.Stable Temperature: Temperature must reach 36.5° to 37°C (97.7° to 98.6°F) before dressing and wrapping.

3.Open Crib: Once temperature is stable, newborn can be cared for in an open crib, dressed, and wrapped in a blanket.

4.Delayed First Bath: First bath is delayed until body temperature stabilizes.

5.Temperature Monitoring: Temperature should be recorded 30 minutes after the bath and 1 hour after transfer to an open crib.

6.Bathing Method: Sponge baths are typically given, although research supports that tub baths can be safely used for newborns.

1.Bowel and Urinary Function:

1. Newborns may not urinate for up to 24 hours, and occasionally 48 hours.
2. If a newborn urinates in the birthing or operating room, it should be documented.
3. Meconium is passed by 70% of term newborns within the first 12 hours.
4. Passing meconium before discharge is important for confirming a patent gastrointestinal tract.

2.Providing for Security:

1. Newborn abduction prevention is vital in healthcare settings.
2. Identification bands are used to ensure that newborns are safely matched with their parents.
3. Some facilities use microchip-enabled identification bands linked to the security system for additional protection.


PROSEC
90304
A

FIG. 9.5 Identification.
(A) This umbilical clamp can be used as identification (with an identical numbered wristband for the mother) and also as protection from abduction, because it has a lightweight transponder attached to the clamp. When the transponder passes out of the unit, an alarm sounds unless the transponder is neutralized by a coded signal input by the hospital staff. The umbilical clamp is removed before discharge. (B) The nurse compares the identification bracelet of the newborn with the bracelet on the mother's wrist as the father and sibling look on. (**A** courtesy Prosec Protection Systems, Lakewood, NJ; **B** courtesy Pat Spier, RN-C.)

Newborn Identification:

- **Wristbands:** Identical wristbands are placed on the mother, newborn, and support person with essential details like names, birth time, and the newborn's sex.
- **Verification:** The nurse checks matching numbers on the wristbands when the newborn is returned to the mother after separation.
- **Security:** Some bands contain microchips that alert staff if the newborn is moved outside the hospital unit. These are deactivated at discharge.

Evaluating Gestational Age:

A quick assessment is made in the birthing room to determine whether the newborn appears to be preterm, term, or postterm. Characteristics to evaluate include:

- **Skin:** Thin and transparent (preterm) or peeling (postterm or IUGR).
- **Vernix:** Present over most of the skin (preterm), only in creases (term), or absent (postterm). Greenish vernix may indicate meconium passage before birth.
- **Hair:** Fine lanugo hair (preterm) or minimal hair (term), with more lanugo on dark-skinned babies.
- **Ears:** When folded, preterm newborns' ears spring back slowly, while term newborns' ears spring back quickly.

(Gestational Age Assessment:

•**Breast tissue:** Minimal under the nipple (preterm) or palpable mass of tissue ≥5mm (term).

•**Genitalia:**

- **Male:** Smooth and small scrotum (preterm) or pendulous with rugae (term).
- **Female:** Labia majora and minora nearly equal size (preterm) or labia majora covering labia minora (term).

•**Sole creases:** Creases on the anterior third of the foot (preterm), anterior two-thirds (term), or full foot (term/postterm). Peeling skin may be present in postterm or IUGR newborns.

Observing for Injuries or Anomalies:

- **Head and face:** Check for trauma, especially with forceps delivery or internal spiral electrode use. A small puncture may be visible on the scalp.
- **Breech delivery:** Buttocks may show bruising.
- **Anomalies:** Conditions like spina bifida or cleft lip may be immediately visible.
- **Fingers and toes:** Count to check for abnormalities (extra or webbed digits).
- **Feet:** Check for straightness or flexibility of deviated feet.
- **Limbs:** Check for equal length of arms and legs.
- **Urination and meconium:** Passage confirms patency of urinary and gastrointestinal systems.

Vital Signs Observation:

- Initially checked at 15- to 30-minute intervals, then hourly, and every 4-8 hours once the newborn is stable.

Respiratory Rate:

•Normal range: 30 to 60 breaths/min.

•To ensure accuracy, respiratory and heart rates are assessed before disturbing the newborn.

•Count the respiratory rate for a full minute, as newborns have shallow, irregular breathing.

•Use a stethoscope or observe abdominal movements to count breaths. If the newborn is crying, offering a pacifier or gloved finger to suck can help calm the baby for accurate measurement.

Heart Rate:

•Assess the heart rate apically (using a pediatric stethoscope if available).

•Count for 1 minute, with a normal rate of 110 to 160 beats/min.

•Persistent low or high heart rates may indicate a medical condition.

Nursing Tip:

•Historically, newborns were placed in a prone position to aid mucus drainage, but this practice may vary based on current guidelines.

Temperature Monitoring:

•**Radiant Warmer:** A skin probe is used to monitor temperature, avoiding placement over bony prominences or brown fat areas for accurate readings.

•**Preferred Methods:**

- **Axillary Temperature** is commonly used and reliable.
- **Temporal Artery Thermometer** is also effective and suitable for all hospital settings.
- **Rectal Temperature** is no longer recommended due to injury risks.

Blood Pressure Monitoring:

•**Measurement Device:** Blood pressure is measured with an electronic instrument.

•**Extremity Assessment:** Blood pressure should be measured in all four extremities (or one arm and one leg) to detect pressure differences, which could indicate issues like coarctation of the aorta.

•**Normal Range:** For term newborns:

- **Systolic:** 65-95 mm Hg
- **Diastolic:** 30-60 mm Hg

These practices are crucial for assessing newborn health and identifying potential complications.

Weight Measurement:

- **Timing and Location:** The newborn is weighed either in the birthing room or upon admission to the nursery.
- **Scale Preparation:** A disposable paper is placed on the scale, and it is balanced to zero.
- **Weighing Process:** The newborn is placed on the scale without clothing, and the nurse avoids touching the newborn to prevent falls.
- **Units of Measurement:** Weight is recorded in grams for gestational age assessment and kilograms for medication dosages.

Other Measurements:

- **Key Measurements:** Length, head circumference, and chest circumference are typically measured.
- **Method:** A disposable tape measure is used.
- **Precautions:** Care is taken not to pull the tape too tightly to avoid injury.
- **Units of Measurement:** All measurements are recorded in centimeters for gestational age and clinical assessment.

There are several methods for measuring a newborn's length:

1.Wall-mounted Tape Measure: The newborn's head is placed at one end of the bassinet, the leg is extended, and the length is recorded where the heel ends.

2.Scale Paper Method: The newborn is placed on scale paper, and marks are made at the top of the head and the end of the foot after the body and leg are extended. The length is measured between these marks.

3.Tape Measure on a Flat Surface: The tape measure is placed with its zero end at the newborn's head. The body and leg are extended, and the tape is stretched to the heel to measure the length.

These methods ensure accurate measurement of the newborn's length for growth assessment.

Head Circumference:

The head is measured at the fullest part just above the eyebrows. Molding of the head may affect the accuracy of the initial measurement.

Chest Circumference:

Measured at the nipple line.

Umbilical Cord Care:

- **Delayed Cord Clamping:** Clamping the cord 30 to 60 seconds after birth improves newborn outcomes by increasing iron stores.
- **Cord Cutting:** If a long segment of the umbilical cord is left attached, the nurse applies a clamp about ½ inch above the skin, and the cord is cut either by the healthcare provider or the father.
- **Cord Assessment:** The cord is examined for blood vessels. A normal umbilical cord contains three vessels: two arteries and one vein.

Memory Jogger:
The name "AVA" (Artery-Vein-Artery) helps nurses remember that a normal umbilical cord contains two arteries and one vein.
Umbilical Cord Care:
•**Goal:** The primary aim is to prevent infection by keeping the cord clean and dry, which helps speed up cord separation.
•**Treatment:** Some hospitals still apply triple dye or alcohol daily for drying, but this is less common.
•**Diaper Placement:** The diaper should be fastened low to allow air circulation around the cord.
•**Cord Appearance:** As the cord dries, it should become dry and brownish-black.
•**Clamp Removal:** The clamp is removed when the cord end is dry and crisp, typically within 24 hours.
•**Parent Education:** Parents should be taught to report any redness, moisture, or foul-smelling discharge.
•**Bathing:** Parents often prefer sponge baths until the cord stump falls off, but tub baths are safe. Baths should be given no more than every other day.

Observing and Providing Care for the Umbilical Cord

Purpose:

To assist in the drying and eventual separation of the umbilical cord.

Steps:

1. **Identify Newborn:** Ensure the correct identification of the newborn.
2. **Check Umbilical Clamp:** Verify the clamp is tightly secured with no bleeding or discharge from the cord.
3. **Keep Cord Dry:** Ensure the cord remains dry and is exposed to air for proper drying.
4. **Assess the Cord:** Check for the presence of vessels (two arteries and one vein).
5. **Cleaning if Soiled:** If the cord becomes soiled, use a cotton tip swab and warm water to gently clean it. Wipe from the base of the cord upward and outward. Lift the cord away from the abdomen to cleanse all areas.
6. **Observe for Issues:** Monitor the cord and abdominal area for signs of redness, discharge, or foul odor, which could indicate infection.

Umbilical Cord Care Steps (Continued):

7.Sponge-Bath: Sponge-bathe the newborn until the cord falls off. After that, the newborn can be submerged in a bath.

8.Diapering: When diapering, fold the upper end of the diaper below the cord to prevent it from rubbing against the cord.

9.Documentation: Document the condition of the cord, any observations, the teaching provided to the parents, and the parents' response.

Additional Notes:

•After the father cuts the umbilical cord, the cord is left open to air. The nurse should demonstrate how to fold the diaper to avoid irritation or contamination.

•**Bleeding:** Bleeding from the cord during the first few hours typically indicates that the cord clamp has become loose. Since the newborn has a small blood volume, even small amounts of bleeding can be significant.

•**Clamp Check:** Ensure the clamp is tightly closed. If needed, apply another clamp to prevent further bleeding.

Hypoglycemia in Newborns:

- **Brain Dependency:** The newborn's brain requires a steady supply of glucose for metabolism. Until regular feeding begins, newborns rely on stored glucose in their bodies.
- **Blood Glucose Levels:**
  - After birth, blood glucose levels fall and stabilize at 40 mg/dL within 1-2 hours. By 3 hours of age, levels rise to 50-80 mg/dL.
  - A blood glucose level below 45 mg/dL 2 hours after birth is considered hypoglycemia.
- **Evaluation for Endocrine Disorders:** Newborns with low blood glucose for 3-4 days should be evaluated for potential endocrine disorders.
- **At-Risk Newborns:**
  - Preterm, postterm, small for gestational age (SGA), large for gestational age (LGA), and newborns of diabetic mothers are at higher risk.
  - Newborns experiencing stress, such as hypoxia, are also at risk.
- **Monitoring and Treatment:** These newborns are monitored for blood glucose levels at prescribed intervals until stable. They may require frequent feedings or IV glucose to maintain stable levels.

Signs of Hypoglycemia in Newborns:

- Jitteriness
- Poor muscle tone
- Sweating
- Respiratory difficulty
- Low temperature (which can also cause hypoglycemia)
- Poor suck
- High-pitched cry
- Lethargy
- Seizures

Testing for Hypoglycemia:

- A heel stick is used to obtain capillary blood for the glucose screening test.
- The heel stick should avoid the center of the heel, where bone, nerves, and blood vessels are near the surface to prevent injury.

Note: Although some newborns are at higher risk, any newborn can experience a drop in blood glucose levels. Early detection and monitoring are essential for proper care.

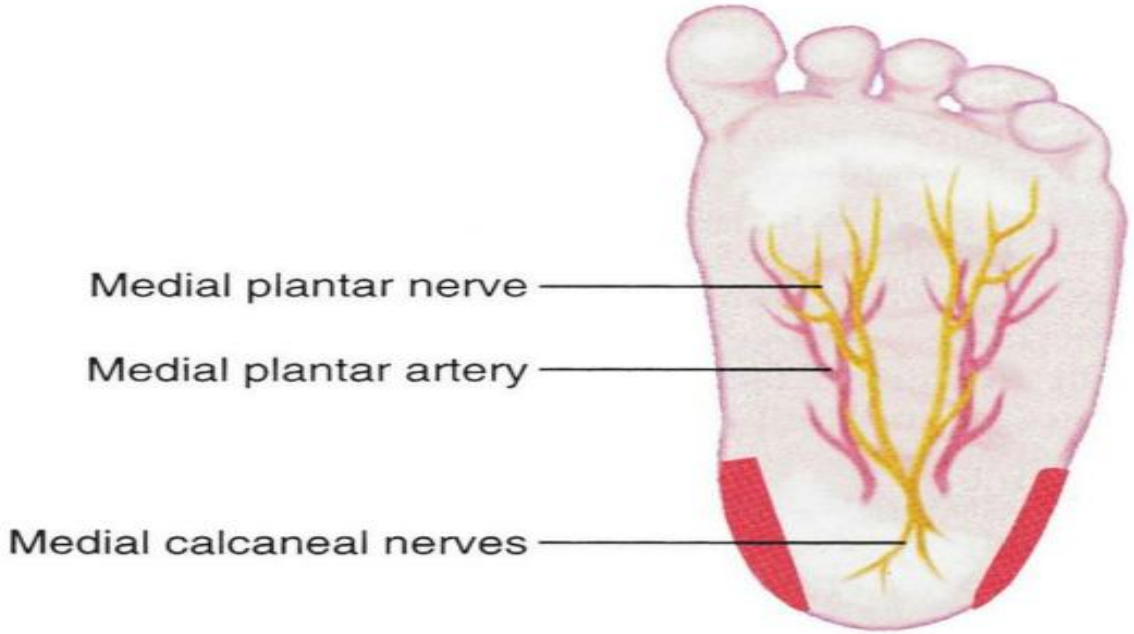


FIG. 9.6 Heel Stick.
The shaded areas at the sides of the heel are used for heel sticks in newborns to avoid nerves, blood vessels, and bony areas. Warming the heel before puncture will promote better blood flow.

Skin Care:

- **Initial Care:** After ensuring the newborn's condition is stable, the skin is gently cleaned to remove blood and amniotic fluid.
- **Vernix Preservation:** Vigorous removal of vernix is not recommended to preserve skin integrity. There should be little vernix left on the skin of a term newborn.
- **Gloves:** Nurses must wear gloves when handling the newborn until the first sponge bath and shampoo are given.

Promoting Bonding and Attachment:

- **Bonding:** This is the strong emotional connection that forms shortly after birth between the parents and the newborn.
- **Attachment:** This affectionate tie develops over time as the newborn and caregivers interact.
- **Nurse's Role:** It's important for nurses to support and encourage bonding and attachment, helping parents feel connected to and claim their newborn.

Bonding and Attachment:

- **Begins During Pregnancy:** Bonding starts in utero as the fetus moves and displays individual traits on sonograms.
- **Parental Interaction:** Both parents should view, hold, and touch the newborn as soon as possible after birth to promote bonding.
- **Surprise and Gender Discovery:** Some parents prefer not to know the newborn's sex before birth, while others may be surprised if the predicted sex differs from the actual one.
- **Physical Connection:** Parents often count fingers and toes, a common bonding behavior.
- **Preventing Hypothermia:** To prevent newborn hypothermia, the unclothed newborn is kept near the mother's skin with skin-to-skin contact, both covered with a warm blanket.
- **Identifying Characteristics:** Parents begin to notice and connect with individual features, like a nose resembling a grandparent's or a cry similar to an older sibling's. These behaviors help the parents recognize the newborn as a unique individual.

FIG. 9.7 (A) Mother-newborn bonding is obvious in this picture of a mother and her newborn. (B) An uncle bonds with the newborn as he examines features and fingers. (C) Siblings get their first introduction to their newborn brother.

Nursing Care to Promote Bonding and Attachment:

- **Observation of Parenting Behaviors:** The nurse observes how much affection and interest the parents show toward the newborn, noting physical contact, stimulation, eye contact, and time spent interacting.
- **Communication:** Adults often talk to newborns using high-pitched voices, which helps engage the baby.
- **Family Involvement:** The nurse observes the extent to which parents involve siblings and grandparents with the newborn.
- **Nursing Interventions:** This information helps guide nursing interventions that promote bonding and foster positive family relationships. These actions support the development of strong emotional ties and ensure a healthy family dynamic.

FIG. 9.8 Placing the naked newborn on the bare chest of the mother, covered by a blanket, encourages both breastfeeding and bonding.

Nursing Interventions to Facilitate Parent-Newborn Attachment:

- **Recognizing Communication Cues:** Parents should learn to recognize their newborn's signals, distinguishing discomfort from hunger versus other causes, like a wet diaper or boredom.
- **Role Modeling for Parents:** Nurses can model bonding behaviors such as:
    - Calling the newborn by name
    - Holding the newborn on the parent's chest
    - Providing skin-to-skin contact
    - Speaking in gentle, high-pitched tones
- **Supporting Adolescent Mothers:** Role modeling is particularly important for adolescent mothers, who may feel self-conscious about interacting with their newborn.
- **Discussing Newborn Behaviors:** Nurses should discuss expected newborn behaviors and highlight unique characteristics to strengthen the bonding process, especially when the parents' expectations (such as gender or appearance) differ from the reality of the newborn. This helps parents accept and appreciate their baby as an individual.

Parent Teaching for Newborn Care:

Key topics for parent education include:

- **Airway Maintenance:** Teach how to position the newborn and use a bulb syringe to keep the airway clear.
- **Temperature Maintenance and Assessment:** Provide guidance on maintaining and monitoring the newborn's temperature after discharge.
- **Voidings:** Explain the expected increase in the number of voidings as the newborn’s body adjusts.
- **Stool Changes:** Discuss the normal changes in the newborn’s stool pattern.
- **Feeding:** Instruct on proper feeding techniques and frequency.
- **Signs of Illness:** Teach parents what symptoms to watch for and when to seek medical help.
- **Follow-up Appointments:** Remind parents of necessary follow-up appointments for well-baby care.

Additional Note:

- The first feeding should be observed carefully to check for any anomalies that might cause choking or difficulty feeding.

Breastfeeding Benefits:

- **Nutritional Importance:** Breastfeeding provides essential nutrients in the right proportions, which are crucial for the rapid brain growth and high energy use during the first few months of life.
- **Digestibility:** Breast milk is easily digested by the newborn's developing digestive system.
- **Allergy Prevention:** Breast milk is less likely to cause allergies compared to formula.
- **Immunity Boost:** Breastfeeding transfers natural immunity from the mother, with colostrum being particularly rich in antibodies.
- **Promotes Elimination:** Breast milk helps newborns pass meconium, and breastfed babies are less likely to experience constipation.

Breastfeeding is an optimal source of nutrition and offers many health benefits for the newborn.

Additional Benefits of Breastfeeding:

- **Mouth Development:** Suckling at the breast promotes healthy mouth and jaw development.
- **Convenience and Cost-Effective:** Breastfeeding is easy and economical, requiring no preparation or special equipment.
- **Safety:** Breastfeeding eliminates the risks associated with contaminated water or improper formula dilution.
- **Uterine Recovery:** The act of suckling helps the uterus return to its prepregnant size more quickly.
- **Brain Development:** Breastfeeding may support improved brain development in the newborn.
- **Maternal Weight Loss:** Breast milk production utilizes maternal fat stores, aiding in postpartum weight loss.
- **Mother-Child Bonding:** Breastfeeding fosters a strong, close relationship between mother and child.
- **Reduced Risk of Disorders:** Breastfeeding may lower the occurrence of childhood respiratory issues and diabetes in the infant.

Breastfeeding provides numerous benefits for both the mother and the newborn, promoting health, development, and a strong bond.

Infectious Diseases, Drugs, and Breastfeeding:

- **HIV:** Mothers infected with HIV are advised not to breastfeed, as the virus can be transmitted through breast milk.
- **Herpes and Varicella Zoster:** Breastfeeding is contraindicated when there are active lesions on the breast due to herpes simplex or varicella zoster infections.
- **Pulmonary Tuberculosis (TB):** Mothers with active TB should be isolated from their newborns. However, pumped breast milk can still be safely given, as it does not contain the tuberculosis bacteria.
- **Medications:**
    - When a mother is taking a daily medication during lactation, the dose should be timed immediately after nursing to minimize effects on the infant.
    - Certain medications should be avoided if safe alternatives exist, such as cytotoxic drugs (e.g., cyclosporine, methotrexate), drugs of abuse, and radioactive compounds.

It's important for breastfeeding mothers to consult with healthcare providers about the safety of medications and potential risks associated with infections.

Breastfeeding Considerations with Medications and Health Conditions:

- **Psychotropic and Antianxiety Drugs:** Some psychotropic and antianxiety medications can cause adverse effects in the infant and should be used cautiously during breastfeeding.
- **Bromocriptine and Ergotamine:** These migraine treatments are contraindicated during breastfeeding as they can negatively affect the infant.
- **Mercury in Fish:** Nursing mothers should avoid consuming fish with high mercury levels to prevent potential harm to the infant.
- **Galactosemia:** This genetic disorder in the infant is a contraindication for breastfeeding, as the infant cannot metabolize galactose found in breast milk.
- **Safe Medications:** Many medications are considered safe during lactation, including narcotics, sedatives, anticonvulsants, antihistamines, decongestants, antihypertensives, antimicrobials, and moderate coffee intake. However, consulting a healthcare provider is essential for individual cases.

Physiology of Lactation:

•**Prolactin:** This hormone, produced by the anterior pituitary gland, stimulates the production of breast milk.

•**Oxytocin:** Released by the posterior pituitary gland, oxytocin causes milk ejection, allowing milk to travel from the alveoli (milk-producing sacs) through the ducts to the nipple. This process is known as the milk ejection or "let-down" reflex.

- Mothers may experience tingling in the breasts and occasional abdominal cramping as the uterus contracts during this reflex.

These hormonal processes are essential for successful breastfeeding, allowing milk to be produced and delivered to the infant.

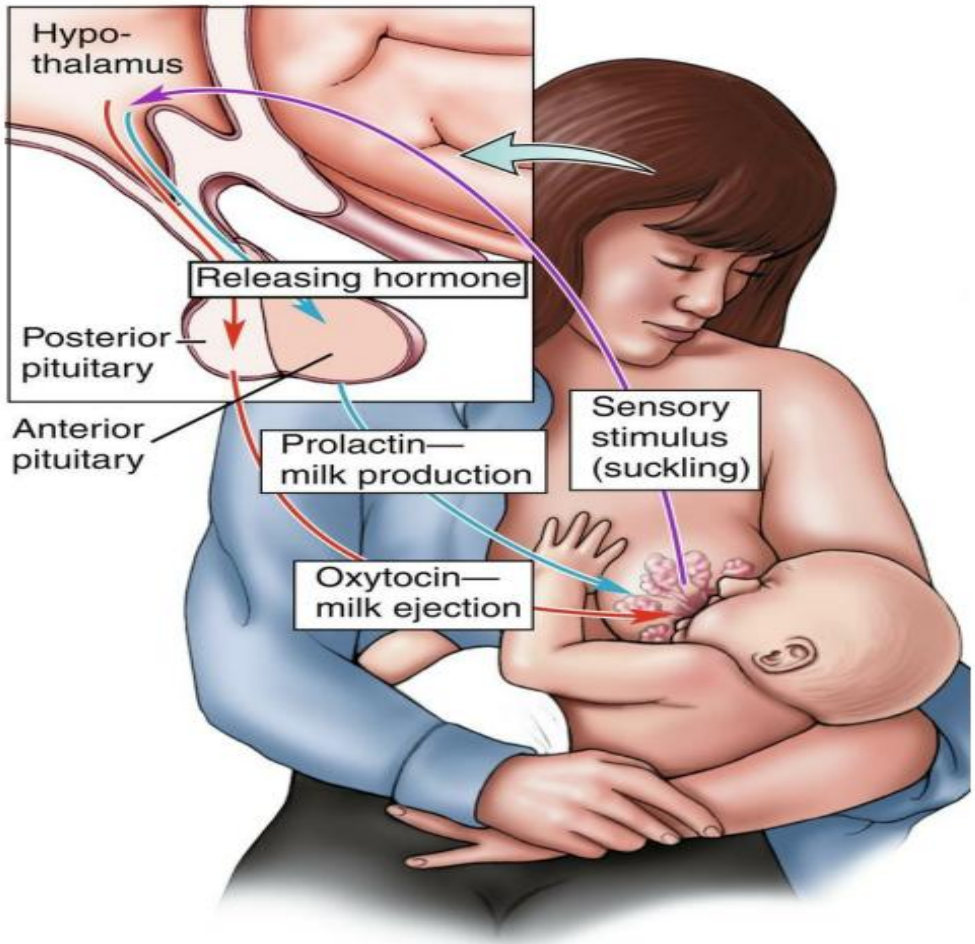


FIG. 9.9 **Lactation Reflex Arc.**
The newborn suckling on the breast stimulates nerve fibers in the areola of the nipple that travel to the hypothalamus. The hypothalamus stimulates the anterior pituitary to secrete prolactin; this stimulates milk production and stimulates the posterior pituitary to release oxytocin, which causes a let-down reflex, contracting the lobules in the breast and squeezing milk out into the nipple and to the newborn.
(From Herlihy B: *The human body in health and illness*, ed 6, St Louis, 2018, Saunders.)

Breastfeeding Physiology:

- **Hormonal Influence During Pregnancy:** During pregnancy, glandular tissue in the breasts grows under the influence of hormones. Prolactin levels rise, promoting milk production. However, other hormones from the placenta inhibit the breast's response to prolactin, preventing milk production until after birth.
- **Post-Birth Changes:** After the placenta is expelled, prolactin's influence becomes unopposed, and milk production begins. If milk is not removed from the breast (by suckling or expression), prolactin secretion decreases, and the breasts return to their prepregnant state.
- **Oxytocin and Milk Ejection:** Newborn suckling stimulates the release of oxytocin, which causes milk to be delivered from the alveoli (milk-producing sacs) to the nipple for the newborn to ingest.
- **Prolactin and Milk Production:** As milk is removed from the breasts, prolactin secretion increases, stimulating further milk production. Infrequent or short feedings can reduce milk supply, as very little milk is stored between feedings.

The regular removal of milk is crucial for maintaining and increasing milk production to meet the infant's needs.

Composition of Breast Milk During Feeding:

- **Foremilk:** The first milk that the newborn receives, which is more watery and primarily quenches thirst.
- **Hindmilk:** The milk that is produced later in the feeding, which has a higher fat content. It helps satisfy the newborn's hunger.
- **Feeding Duration:** Feedings that are too short may not allow the newborn to get enough hindmilk, potentially leaving them hungry as the fat-rich hindmilk is crucial for providing sustained nourishment.

Ensuring that the newborn nurses long enough to reach the hindmilk helps ensure they receive both hydration and the necessary nutrients for growth.

Phases of Milk Production:

1.Colostrum:

1. **Timing:** Secreted late in pregnancy and during the first few days after birth.
2. **Characteristics:** Yellowish fluid rich in protective antibodies.
3. **Nutritional Content:** Provides protein, vitamins A and E, essential minerals, and is lower in calories than mature milk.
4. **Function:** Has a laxative effect, which helps the newborn eliminate meconium.

2.Transitional Milk:

1. **Timing:** Emerges about 7 to 10 days after birth as the breasts transition from producing colostrum to mature milk.
2. **Characteristics:** Contains fewer immunoglobulins and proteins but higher amounts of lactose, fat, and calories.

3.Mature Milk:

1. **Timing:** Secreted by around 14 days after birth.
2. **Characteristics:** Bluish in color, which may lead some mothers to believe it is not rich enough to nourish the baby.
3. **Nutritional Content:** Contains 20 kcal/oz and all the nutrients the newborn needs.
4. **Misconception:** The "thinness" of mature milk is normal, and it is actually well-balanced to support the baby's growth.

Nurses should reassure mothers that the appearance of mature milk is normal and provide support to ensure successful breastfeeding.

Assisting the Mother to Breastfeed:

•**Skin-to-Skin Contact:** Newborns are more likely to be breastfed successfully and for longer periods if they have skin-to-skin contact and breastfeeding is initiated in the delivery room.

•**Advantages of the First Nursing Session:**

- **Promotes Bonding:** Helps establish a strong emotional connection between mother and newborn.
- **Maintains Temperature:** Helps regulate the newborn's body temperature through close contact.
- **Stimulates Oxytocin Release:** Newborn suckling triggers the release of oxytocin, which contracts the mother’s uterus and helps control postpartum bleeding.

•**Timing:** The newborn should be put to the breast within the first few hours after birth, ideally when the newborn is in an alert state and ready to suckle and bond.

•**If Delayed:** If the first breastfeeding is delayed beyond 6 hours due to maternal fatigue or newborn disinterest, reassurance is important. The mother can still successfully breastfeed later on.

The first breastfeeding session plays a crucial role in both physical and emotional bonding, and early initiation helps ensure a smooth breastfeeding journey.

Essential Techniques in Breastfeeding (Box 9.1):

1.Proper Body Alignment: Ensure the newborn is positioned correctly, with their body facing the mother, so they can latch effectively.

2.Wide Open Mouth: The newborn should have their mouth wide open to latch onto the areola, not just the nipple.

3.Proper Hand Position: The mother should hold the breast with a supportive hand, ensuring the nipple is in the newborn's mouth and the areola is compressed for proper latch.

4.Rhythmic Mouth Movement: The newborn's mouth should move in a rhythmic motion, compressing the areola to express milk.

5.Audible Swallowing: An audible swallow indicates that the newborn is successfully drinking milk.

6.Relaxed, Supported Position: The mother should be in a comfortable and supported position to facilitate easy breastfeeding.

7.Warm and Private Environment: Ensure the room is warm and private to help the mother and newborn feel relaxed during the feeding.

8.Satiated Newborn: The newborn should appear relaxed and satisfied at the end of the feeding session.

9.Non-Engorged Breasts: After breastfeeding, the mother's breasts should feel soft and not engorged, indicating effective milk transfer.

These techniques help ensure effective breastfeeding, making the experience more comfortable for both mother and newborn while promoting optimal milk intake.

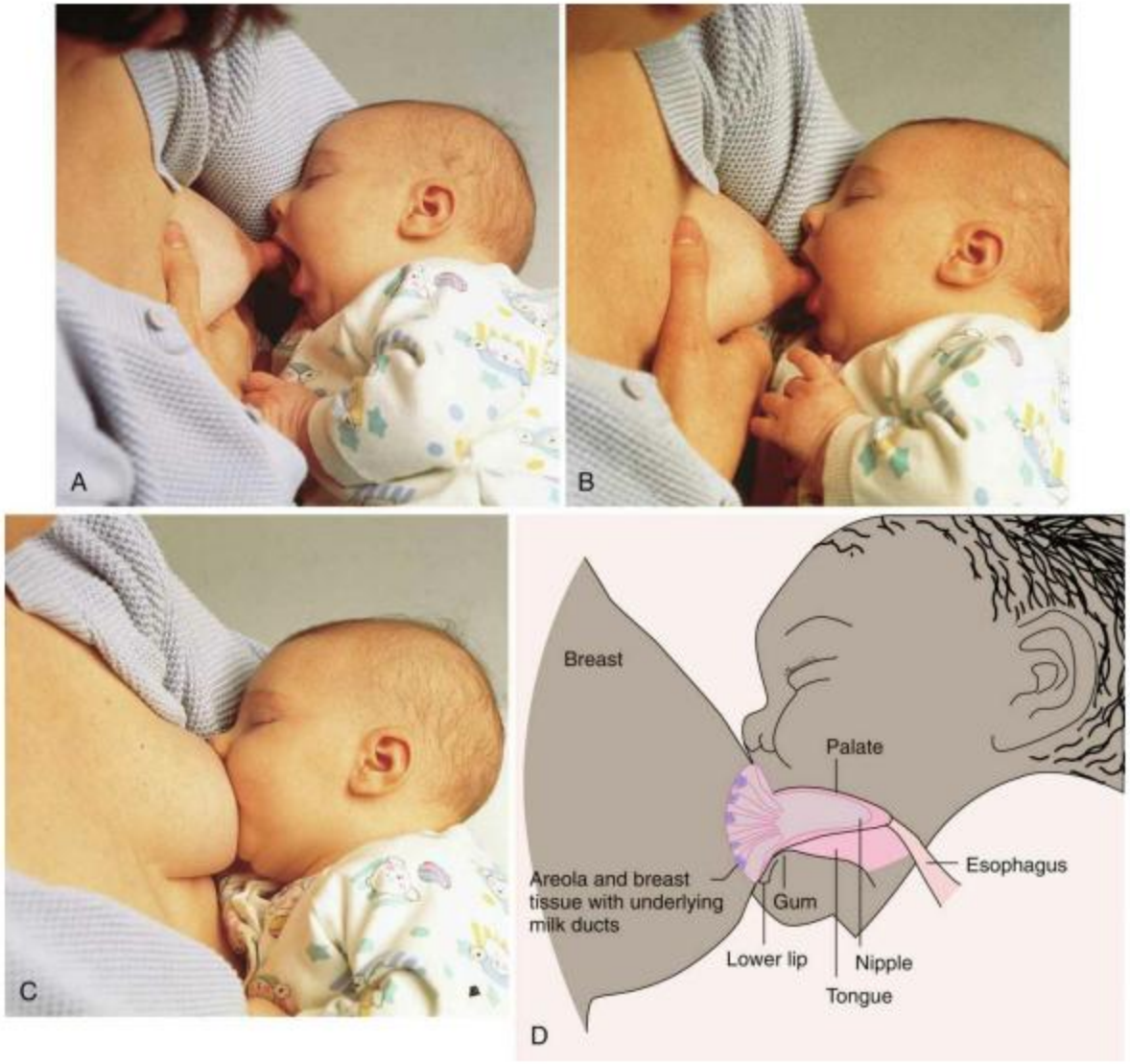


FIG. 9.11 (A) The newborn responds to a touch on the lips and opens the mouth wide. (B) After the mouth is open, quickly pull the newborn close to enable latch-on. (C) The baby should have as much areola in his or her mouth as possible, not just the nipple. (D) Correct attachment (latch-on) at the breast. (From Perry SE, Hockenberry MJ, Lowdermilk DL, Wilson D: *Maternal child nursing care*, ed 5, St Louis, 2014, Mosby.)

Suckling Patterns and Techniques:

•**Suckling Patterns:** Newborns exhibit varying suckling patterns. Some suck several times before swallowing, while others swallow with each suck. By day 4, the newborn generally swallows with each suck at the beginning of the feeding, taking in about 0.14 mL of milk. Later in the feeding, they take in smaller amounts (around 0.01 mL per suck).

•**Indicators of Proper and Improper Suckling:**

- **Nutritive Sucking:** A soft "ka" or "ah" sound indicates the newborn is swallowing colostrum or milk.
- **Improper Suckling:** Noisy sucking, smacking sounds, or dimpling of the cheeks often suggest improper mouth positioning.
- **Non-nutritive Sucking:** Fluttering sucking motions indicate non-nutritive suckling, which doesn’t contribute to milk intake.

•**Removing the Newborn from the Breast:**

- To reposition or switch breasts, the mother should break the suction by gently inserting a finger in the corner of the newborn's mouth or indenting the breast near the mouth.
- This prevents discomfort or injury, such as sore nipples, from pulling the newborn away from the breast directly.

FIG. 9.12 Breaking Suction.
The mother should always first break the suction before removing the newborn from the breast. She can break the suction by inserting a finger in the corner of the newborn's mouth.

Evaluating Newborn Intake:

Breastfeeding mothers often seek reassurance about the adequacy of milk supply since they can't visually track the amount consumed, unlike bottle-feeding mothers. Signs that breastfeeding is successful include:

1. **Breast Softness:** The breast feels firm before feedings and softer after, indicating milk has been consumed.
2. **Let-Down Reflex:** A tingling sensation and milk dripping from the breasts when a feeding is due.
3. **Feeding Duration and Frequency:** The newborn nurses for 10-15 minutes on each breast, 8-10 times a day.
4. **Audible Swallowing:** An audible swallow is heard during suckling, confirming milk intake.
5. **Newborn Behavior:** The newborn demands feeding, appears relaxed, and is satisfied after feeding.
6. **Diaper Output:** The newborn has six to eight wet diapers per day, signaling proper hydration.
7. **Stool Patterns:** The newborn passes stool several times a day.
8. **Weight Gain:** By 14 days of age, the breastfed newborn should have regained their birth weight.

These indicators help reassure the mother that the breastfeeding process is going well and that the newborn is receiving adequate nutrition.

Frequency and Duration of Feedings:

- **Feeding Frequency:** Breastfed newborns typically nurse every 2 to 3 hours in the early weeks due to small stomach capacity and the easy digestion of breast milk.
- **Cluster Feeding:** Some newborns may cluster several feedings in a short period and then go for longer intervals without nursing.
- **Flexibility:** It’s important to remain flexible with feeding schedules, but if a newborn hasn't nursed for 3 hours, the mother should gently wake them and encourage breastfeeding.
- **Short Feedings:** If feedings are too short, the newborn may not receive enough hindmilk, which is richer in calories, leading to increased hunger shortly after feeding.
- **Let-Down Reflex:** It may take up to 5 minutes for the mother’s let-down reflex to occur, which releases milk.
- **Engorgement Risks:** If milk is not fully removed from the breasts, engorgement can occur, and milk production may decrease or cease.
- **Hunger Cues:** Mothers should learn to recognize early hunger cues in their newborns, as crying is usually a late sign of hunger.

These guidelines help ensure that the newborn receives sufficient milk and that the mother’s milk production is maintained.

Breastfeeding Duration and Burping:

- **Feeding Duration:** The newborn should nurse for at least 15 minutes on the first breast, or longer if nursing vigorously. Afterward, the newborn should be switched to the second breast and continue nursing until satisfied.
- **Total Feeding Time:** The total duration of early feedings should be at least 15 minutes per breast. Avoid switching back and forth between breasts during a single feeding session.
- **Air Intake:** Newborns who breastfeed generally do not swallow much air, reducing the need for frequent burping.
- **Burping Methods:** To burp the newborn, the mother can hold them in a sitting position on her lap and gently pat or rub their back. Alternatively, the newborn can be placed against the mother's shoulder for burping.
- **Protection from Spit-Ups:** A soft cloth should be used to protect the mother's clothing from any spit-up.

These practices ensure the newborn receives adequate nutrition while minimizing discomfort from air swallowing.

Recognizing Hunger in Newborns:

- **Hand-to-mouth movements**
- **Mouth and tongue movements**
- **Sucking motions**
- **Rooting movements**
- **Clenched fists**
- **Kicking of legs**
- **Crying** (a late sign of hunger, which may result in shut-down and poor feeding if the hunger needs are not addressed)

These early hunger cues help caregivers recognize when the newborn is ready to feed, reducing the risk of the baby becoming overly upset and ensuring better feeding.

Maternal Nutrition for Lactating Mothers:

•**Additional Calories:** A lactating mother needs approximately 500 extra calories per day beyond her pre-pregnancy diet to maintain her nutrient stores while supporting her infant.

•**Balanced Diet:** The mother should choose foods from all food groups in the MyPlate guide:

- **Meat, fish, poultry, eggs, beans, and nuts**
- **Milk and dairy products**
- **Vegetables**
- **Fruits**
- **Breads, cereals, and grains**

•**Increased Nutrient Needs:** Lactating women require a 20%-30% increase in vitamins and minerals, double the prepregnancy needs of folic acid, and a 40%-50% increase in calcium and phosphorus.

•**Food Suggestions to Meet Nutritional Needs:**

- 2 cups of milk
- 2 ounces of meat or peanut butter
- A slice of whole wheat bread
- A citrus fruit
- A salad with ½ cup of dark green or yellow vegetables

By incorporating these foods into her diet, a lactating mother can easily meet the increased nutritional demands.

Maternal Nutrition and Breastfeeding Considerations:

- **Vitamin D and Sunlight:** Increased vitamin D intake and sunlight exposure are important to facilitate calcium absorption during lactation.
- **Fluid Intake:** A nursing mother needs about a liter of uncaffeinated fluid daily to replace the fluid lost during breastfeeding.
- **Lactose Intolerance:** Women with lactose intolerance can use substitutes like tofu, soy milk, and canned salmon with bones as alternatives to milk products.
- **Prenatal Vitamins:** Healthcare providers often recommend that nursing mothers continue taking prenatal vitamins, although routine supplementation is typically unnecessary for well-nourished women.
- **Impact of Foods on Milk:** Certain foods can change the taste of breast milk or cause gas in the infant. Common culprits include chocolate, cabbage, beans, and broccoli. If a mother notices fussiness or gas in the infant, she may try eliminating specific foods for a few days to determine if they are causing the issue.
- **Food Sensitivity vs. Allergy:** These issues usually reflect food irritants in the milk, not an allergy to breast milk itself.

Postpartum Self-Care and Follow-Up:

•**Postpartum Self-Care:** The nurse provides guidance on how the new mother can care for herself to minimize complications, while specific instructions may be given by the healthcare provider for certain patients.

•**Follow-Up Appointments:**

- **2-Week Appointment:** Focuses on assessing the healing of the perineum or cesarean incision.
- **6-Week Appointment:** Evaluates the mother's overall health and recovery. This includes a vaginal exam to ensure uterine involution, incision healing, and breast examination for potential issues.

•**Blood Tests & Supplements:** If necessary, a complete blood count may be done, and iron or vitamin supplements may be prescribed if anemia is detected.

•**Psychological Support:** The mother is given a chance to discuss any physical or emotional challenges, and both the healthcare provider and nurse check on her adjustment to motherhood.

Postpartum Hygiene and Sexual Intercourse:

- **Hygiene:** A daily shower helps refresh the mother and remove perspiration, which can be more prominent in the days following birth. Perineal care should continue until lochia (postpartum bleeding) stops. Douches and tampons should be avoided until the 6-week checkup.
- **Sexual Intercourse:** Coitus should be postponed until the episiotomy is fully healed and lochia flow has stopped, as early sexual activity can lead to infection, trauma, or unintended pregnancy. Ovulation can occur before the 6-week checkup, so contraception is important. Breastfeeding is not a reliable method of contraception.
- **Contraception:** The health care provider will discuss contraception, and options such as progestin-only pills, the mini-pill, IUDs, or contraceptive implants are safe for breastfeeding. It is recommended to have an interval of at least 18-24 months between pregnancies to reduce the risk of adverse outcomes.

Diet and Exercise Postpartum:

- A **well-balanced diet** and **moderate exercise** are essential for healing and recovery after birth. To prevent constipation, mothers are encouraged to eat high-fiber foods like whole-grain breads, fruits, and vegetables with skins.
- **Breastfeeding mothers** should avoid attempting to lose weight while nursing, as adequate nutrition is vital for milk production.
- **Formula-feeding mothers** should delay starting a strict weight-reducing diet until cleared by their healthcare provider.
- **Moderate exercise** can help return the uterus to its pre-pregnancy state and improve overall well-being.
- **Prenatal vitamins** are often recommended to be continued until after the 6-week postpartum checkup to ensure the mother's health is supported.

Teaching the Mother About Danger Signs Postpartum:

The mother should be informed about potential complications like hemorrhage, infection, and thrombosis. She should report any of the following symptoms:

- **Fever** higher than 38°C (100.4°F)
- **Persistent lochia rubra** or lochia with a foul odor
- **Bright red bleeding**, especially if lochia has already transitioned to serosa or alba
- **Prolonged afterpains**, pelvic or abdominal pain, or constant backache
- **Signs of a urinary tract infection** (painful urination, urgency, etc.)
- **Pain, redness, or tenderness** in the calf, which may indicate thrombosis
- **Localized breast tenderness** or redness, which could suggest mastitis
- **Discharge, pain, redness, or separation** of any suture line (cesarean, perineal laceration, or episiotomy)
- **Prolonged feelings of depression or being "let down"**, or not enjoying life, which could indicate postpartum depression

These symptoms should be promptly reported to a healthcare provider to ensure proper care and prevent complications.

Get Ready for the NCLEX® Examination! Key Points

• It is essential to consider all patients individually to better incorporate their culture and special needs into the plan of care.

• From its level at the umbilicus, the uterus should descend about 1 finger's width per day after birth. It should no longer be palpable at 10 days postpartum.

• A slow pulse is common in the early postpartum period. A maternal pulse rate that would be high normal at other times may indicate hemorrhage or infection in the postpartum patient.

• A full bladder interferes with uterine contraction, which can lead to hemorrhage.

• Measures to prevent constipation should be emphasized at each assessment: fluid intake, a high-fiber diet, and activity.

• RhoGAM is given within 72 hours to the Rh-negative mother who delivers an Rh-positive newborn.

• The postpartum check should include the status of the fundus, lochia, breasts, perineum, bowel and bladder elimination, vital signs, Homans' sign, pain, and evidence of parentnewborn attachment.

• Neonatal screening tests such as the phenylketonuria (PKU) test identify disorders that can be treated to reduce or prevent disability.
• Delayed cord clamping of 30 to 60 seconds improves newborn outcomes.
• The nurse must always keep the possibility of newborn abductions in mind when providing care.
• The facility's specific protocol for security should be maintained during care. Most persons will not be offended by precautions but will be grateful for the protection.
• Umbilical cord care involves observing the cord for infection and bleeding and keeping the cord dry until it falls off naturally.
• Bonding and attachment require contact between parents and newborn. The nurse should promote this contact whenever possible.
• More breast milk removed means more milk produced. Early, regular, and frequent nursing promotes milk production and lessens engorgement.
• The duration of nursing on the first breast should be at least 15 minutes to stimulate milk production.

• The nursing mother needs 500 extra calories each day, plus enough fluid to replace liquid lost via breastfeeding (about 1 L).
• Weaning from the breast should be gradual, starting with the feeding the infant is least interested in and ending with the one in which he or she has the most interest.
• Commercially prepared formulas are available in ready-to-feed, concentrated liquid or in powdered form. Dilution, if required, must be followed exactly according to instructions.
• Discharge planning should take place with every instance of mother or newborn nursing care, as the nurse teaches the mother normal findings, their significance, and what to report. Written materials should be provided to augment all teaching.
• An appropriate interval between pregnancies is 18 to 24 months to prevent adverse outcomes in subsequent pregnancies.

Review Questions for the NCLEX® Examination

1. Which assessments are expected 24 hours after birth? (Select all that apply.)
2. Scant amount of lochia alba on the perineal pad.
2. Fundus firm and in the midline of the abdomen.
3. Breasts distended and hard with flat nipples.
4. Bradycardia.

2. Nursing the newborn promotes uterine involution because it:

1. uses maternal fat stores accumulated during pregnancy.
2. stimulates additional secretion of colostrum.
3. causes the pituitary to secrete oxytocin to contract the uterus.
4. promotes maternal formation of antibodies.

3. The best way to maintain the newborn's temperature immediately after birth is to:

1. dry the newborn thoroughly, including the hair.
2. give the newborn a bath using warm water.
3. feed 1 to 2 ounces of warmed formula.
4. limit the length of time that parents hold the newborn.

4. Eight hours postpartum the woman states she prefers the nurse to take care of the newborn. The woman talks in detail about her birthing experience on the phone and to anyone who enters her room. She complains of being hungry, thirsty, and sleepy and is unable to focus on the newborn care teaching offered to her. The nurse would interpret this behavior as:

1. inability to bond with the newborn.
2. development of postpartum psychosis.
3. inability to assume the parenting role.
4. the normal taking-in phase of the puerperium

5. Which of the following is a nursing intervention that does not require the written order of the health care provider? (Select all that apply.)

1. Administer an analgesic for pain.
2. Teach the patient how to perform perineal care.
3. Apply topical anesthetic for perineal suture pain.
4. Turn patient q2h.

Thanks