

# NCC Low Risk Neonatal Intensive Care Nursing (RNC-LRN) Practice Exam (Sample)

## Study Guide



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**SAMPLE**

## **Questions**

SAMPLE

- 1. Edema of the genitalia in newborn males generally dissipates after how many days?**
  - A. 1 day**
  - B. 3 days**
  - C. 5 days**
  - D. 7 days**
- 2. In utero, the ductus arteriosus functions to shunt blood from where?**
  - A. Right atrium to left atrium**
  - B. Left ventricle to aorta**
  - C. Pulmonary trunk to descending aorta**
  - D. Aorta to systemic circulation**
- 3. What condition may result from G6PD deficiency in a newborn?**
  - A. Hemolytic anemia**
  - B. Neurological impairment**
  - C. Respiratory distress**
  - D. Congenital heart defects**
- 4. Which vaccine should be avoided during the postpartum period for breastfeeding mothers?**
  - A. MMR vaccine**
  - B. Tetanus toxoid vaccine**
  - C. Smallpox vaccine**
  - D. Varicella vaccine**
- 5. Which hormone injections are sometimes used to treat undescended testicles?**
  - A. Estrogen**
  - B. Progesterone**
  - C. B-HCG**
  - D. Oxytocin**

- 6. After the umbilical cord stops providing nutrients, what causes a decrease in the neonate's plasma insulin levels?**
- A. Umbilical cord constriction**
  - B. Activation of hypothalamic-pituitary-adrenal axis**
  - C. Maternal hormone release**
  - D. Increased blood glucose levels**
- 7. How many additional calories does a breastfeeding woman require per day compared to a non-breastfeeding woman?**
- A. 150 calories**
  - B. 250 calories**
  - C. 330 calories**
  - D. 500 calories**
- 8. In the newborn behavioral states described by Brazelton, which state is characterized by inactivity and mild vocalizations?**
- A. Quiet sleep state**
  - B. Active alert state**
  - C. Quiet alert state**
  - D. Sleepy state**
- 9. What is NOT part of the mechanism of labor in the vertex position?**
- A. Flexion**
  - B. Descent**
  - C. Contraction**
  - D. Extension**
- 10. How can one differentiate jitteriness from seizure activity in a newborn?**
- A. Jitteriness is always initiated by stimuli**
  - B. Seizures can be stopped by flexing extremities**
  - C. Jitteriness can be stopped by holding**
  - D. Seizures involve changes in vital signs**

## **Answers**

SAMPLE

1. B
2. C
3. A
4. C
5. C
6. B
7. C
8. B
9. C
10. C

SAMPLE

## **Explanations**

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**1. Edema of the genitalia in newborn males generally dissipates after how many days?**

- A. 1 day
- B. 3 days**
- C. 5 days
- D. 7 days

The correct answer is that edema of the genitalia in newborn males generally dissipates after 3 days. This is due to the normal physiological changes that occur in neonates, particularly in response to hormonal shifts after birth. Newborn males may experience transient scrotal swelling due to fluid accumulation, which is usually a result of the process of labor, delivery, and the effects of maternal hormones. Typically, this edema resolves within a few days as the body adjusts to the new environment outside the womb and excess fluid is reabsorbed. Monitoring for excessive edema is important, but in most cases, this swelling is benign and self-limiting. The other timeframes presented, such as 1 day, 5 days, and 7 days, do not align with the common clinical observations regarding the timing of edema resolution in this population. Initial observations may indicate some reduction in swelling within the first day, but it is on the third day that a significant resolution is usually noted. After five to seven days, any persistent edema would warrant further evaluation to rule out underlying concerns.

**2. In utero, the ductus arteriosus functions to shunt blood from where?**

- A. Right atrium to left atrium
- B. Left ventricle to aorta
- C. Pulmonary trunk to descending aorta**
- D. Aorta to systemic circulation

In utero, the ductus arteriosus plays a crucial role in fetal circulation by shunting blood from the pulmonary trunk to the descending aorta. This unique structure connects these two vessels and allows most of the blood that would otherwise flow into the lungs (which are not yet functioning in gas exchange) to bypass them, as the fetus receives oxygenated blood via the placenta. Instead of going through the lungs, which are filled with fluid and not oxygenating blood, the ductus arteriosus directs the blood into the aorta, ensuring that it can then be distributed to the rest of the body. This allows the developing fetus to efficiently manage its oxygen needs and maintain optimal circulation during gestation. The other options, while involving important elements of fetal circulation, do not accurately describe the specific function of the ductus arteriosus. The right atrium to left atrium connection is facilitated by the foramen ovale, while the left ventricle to aorta is a typical route in postnatal circulation, and the aorta to systemic circulation is characteristic of a norm functioning cardiovascular system after birth, not during fetal development.

**3. What condition may result from G6PD deficiency in a newborn?**

- A. Hemolytic anemia**
- B. Neurological impairment**
- C. Respiratory distress**
- D. Congenital heart defects**

G6PD deficiency, or glucose-6-phosphate dehydrogenase deficiency, is a genetic condition that affects the red blood cells and can lead to hemolytic anemia, particularly in newborns. This enzymatic disorder impairs the red blood cells' ability to handle oxidative stress, making them more susceptible to damage and subsequent destruction, especially when exposed to certain triggers such as infections, certain medications, or consumption of fava beans. In a newborn, oxidative stress can be encountered naturally through factors such as hypoxia or infections. When the red blood cells cannot adequately cope with this stress due to insufficient G6PD enzyme activity, they undergo hemolysis, leading to a drop in red blood cell count and resulting in symptoms of hemolytic anemia, including jaundice, pallor, and in severe cases, lethargy or even shock. Therefore, the direct association between G6PD deficiency and hemolytic anemia makes this condition the most relevant outcome for newborns affected by this deficiency. Other options, such as neurological impairment, respiratory distress, and congenital heart defects do not have a direct causal relationship with G6PD deficiency, making them less relevant in the context of this specific condition.

**4. Which vaccine should be avoided during the postpartum period for breastfeeding mothers?**

- A. MMR vaccine**
- B. Tetanus toxoid vaccine**
- C. Smallpox vaccine**
- D. Varicella vaccine**

During the postpartum period, breastfeeding mothers should avoid the smallpox vaccine. This vaccine contains a live virus that can pose a risk to both the mother and the breastfed infant. Although the risk of transmission through breastfeeding is low, the potential complications arising from the live virus make it advisable for nursing mothers to refrain from receiving this vaccine. In contrast, the MMR (measles, mumps, rubella) vaccine and the varicella (chickenpox) vaccine are both live vaccines but are considered safe for breastfeeding mothers. This is because the live attenuated viruses in these vaccines do not seem to pose a risk to an infant through breast milk. The tetanus toxoid vaccine is an inactivated vaccine and is also safe during breastfeeding, so it can be administered without concern. Thus, the smallpox vaccine is the only one among the listed options that should be avoided by breastfeeding mothers due to the associated risks with its live viral content.

**5. Which hormone injections are sometimes used to treat undescended testicles?**

- A. Estrogen**
- B. Progesterone**
- C. B-HCG**
- D. Oxytocin**

The use of B-HCG, or beta-human chorionic gonadotropin, is recognized in some cases for treating undescended testicles, a condition known as cryptorchidism. B-HCG functions similarly to luteinizing hormone (LH), stimulating the Leydig cells in the testes to produce testosterone. This testosterone can assist in the descent of the testicles into the scrotum, particularly when surgery may not be immediately indicated or as a preparatory step for surgical intervention. By promoting the natural processes involved in testicular descent, B-HCG can help in managing this condition effectively, making it a relevant treatment option. Other hormones mentioned in the options do not have a similar role in this context. Estrogen and progesterone, known primarily for their roles in the female reproductive system, do not play a direct therapeutic function in inducing testicular descent. Oxytocin, while important in various physiological processes like childbirth and lactation, does not have any established role in the treatment of undescended testicles. Thus, B-HCG stands out as the hormone injection sometimes utilized for this specific condition.

**6. After the umbilical cord stops providing nutrients, what causes a decrease in the neonate's plasma insulin levels?**

- A. Umbilical cord constriction**
- B. Activation of hypothalamic-pituitary-adrenal axis**
- C. Maternal hormone release**
- D. Increased blood glucose levels**

The decrease in the neonate's plasma insulin levels after the umbilical cord stops providing nutrients is primarily linked to the activation of the hypothalamic-pituitary-adrenal (HPA) axis. Once the newborn is separated from the maternal blood supply, the immediate need for insulin diminishes as the source of glucose (from maternal circulation) is no longer available. The body responds by activating the HPA axis, which plays a critical role in regulating various physiological processes, including stress response and metabolism. This activation leads to the secretion of stress hormones such as cortisol, which has an antagonistic effect on insulin and contributes to increased glucose production by the liver, helping to stabilize blood glucose levels in the absence of maternal nutrients. Consequently, as plasma glucose levels decrease without the umbilical supply, insulin production reduces, allowing the neonate to adapt to life outside the womb and begin to manage its own glucose homeostasis. In contrast, other options do not directly correlate with the physiological mechanisms responsible for the decrease in plasma insulin levels in this scenario. For instance, the constriction of the umbilical cord does not inherently affect insulin levels since it is the cord's separation from maternal circulation that initiates these hormonal changes. Maternal hormone release has

**7. How many additional calories does a breastfeeding woman require per day compared to a non-breastfeeding woman?**

- A. 150 calories**
- B. 250 calories**
- C. 330 calories**
- D. 500 calories**

A breastfeeding woman requires approximately 330 additional calories per day compared to a non-breastfeeding woman. This increased caloric need is essential to support the production of breast milk, which is a nutrient-dense substance necessary for the growth and development of the infant. During lactation, a woman's body undergoes significant physiological changes that require increased energy intake. The calories are utilized not just for milk production but also for the woman's overall energy needs as she is nurturing and caring for her newborn. Research has shown that an increase of around 330 calories daily is optimal to meet these demands and ensure both maternal health and adequate milk supply. The additional calorie requirement is also important to help maintain the mother's energy levels, which may be otherwise impacted by the physical demands of breastfeeding and caring for an infant. Proper nutrition and adequate calorie intake are crucial for a breastfeeding woman to support her own health as well as her baby's nutritional needs.

**8. In the newborn behavioral states described by Brazelton, which state is characterized by inactivity and mild vocalizations?**

- A. Quiet sleep state**
- B. Active alert state**
- C. Quiet alert state**
- D. Sleepy state**

The correct answer is the quiet alert state, which is characterized by the newborn being relatively inactive yet awake, displaying some mild vocalizations and movements. During this state, the infant shows a keen interest in the surrounding environment and is responsive to stimuli, allowing for optimal interaction with caregivers. This state is crucial for developing early social skills and bonding as infants are more observant and engaged during these moments. Other behavioral states described by Brazelton have different characteristics; for instance, the quiet sleep state is marked by the baby being in a deep sleep with no movements or vocalizations. The active alert state involves more intense physical activity and increased alertness, while the sleepy state indicates that the baby is drowsy and may drift in and out of awareness. Understanding these states is vital for nurses and caregivers to provide appropriate care and interactions that support the infant's developmental needs.

**9. What is NOT part of the mechanism of labor in the vertex position?**

- A. Flexion**
- B. Descent**
- C. Contraction**
- D. Extension**

The mechanism of labor in the vertex position involves a series of movements that help facilitate the delivery of the fetus through the birth canal. The primary mechanisms include flexion, descent, internal rotation, extension, and restitution. In this context, contraction refers to the physiological process of uterine muscle contractions that occur during labor; while crucial for initiating labor and signaling movement, contraction itself is not classified as a movement of the fetus in relation to the pelvis. Rather, it provides the force necessary for the other movements to take place, such as descent and flexion. Flexion involves the chin of the fetus moving toward the chest, allowing the smallest diameters of the fetal head to engage with the pelvic inlet. Descent refers to the downward movement of the fetal presenting part into the pelvis. Extension occurs during the actual delivery, as the fetal head moves out from under the pubic symphysis after crowning. Since it does not represent a specific movement undertaken by the fetus in the vertex position during the mechanism of labor, contraction is appropriately identified as the correct answer in relation to the question posed.

**10. How can one differentiate jitteriness from seizure activity in a newborn?**

- A. Jitteriness is always initiated by stimuli**
- B. Seizures can be stopped by flexing extremities**
- C. Jitteriness can be stopped by holding**
- D. Seizures involve changes in vital signs**

Jitteriness in newborns is characterized by rhythmic, oscillatory movements that are often linked to external stimuli such as handling or environmental factors. It typically occurs in response to stimuli and can be mitigated by physical interaction, such as holding the baby, which provides comfort and can disrupt the jittery movements. This responsiveness to holding differentiates jitteriness from seizure activity, as seizures do not usually cease with gentle handling. In contrast, seizures are more complex, potentially indicating underlying neurological issues. They often occur spontaneously and are not easily responsive to external interventions like holding. They can sometimes provoke other responses, including changes in vital signs such as heart rate or oxygen saturation, further distinguishing them from jitteriness. Understanding these differences is crucial for proper assessment and management in neonatal care.