

REVIEW QUESTIONS

- A school-age child with phenylketonuria is eating lunch. The child has the following foods on the lunch plate. Which of the food choices should the nurse question the child for choosing?

 - Buttered baked potato
 - Salted stringed beans
 - Stewed Bing cherries
 - Fried chicken legs
- A nurse is performing the newborn screen for phenylketonuria. Which of the following actions is the nurse performing?

 - Sending cord blood from delivery to the hospital laboratory
 - Collecting blood from a heel stick on a two-day-old baby
 - Placing a urine collection bag on the one-day-old baby
 - Analyzing a baby's meconium stool under the microscope
- A neonate, 3,377 grams, has been diagnosed with congenital hypothyroidism. The neonatologist has ordered Synthroid (levothyroxine sodium) to be administered orally once each day beginning today. The recommended dosage of the medication is: *infants and neonates birth to 3 months: 10 to 15 mcg/kg PO daily*. Please calculate the safe maximum dosage of the medication for this neonate. If rounding is needed, please round to the nearest hundredths place.

_____ mcg PO daily.
- A nurse is admitting a baby to the newborn nursery who the nurse suspects may have congenital hypothyroidism. Which of the following findings has the nurse observed? Select all that apply.

 - Clubfeet
 - Cleft palate
 - Protruding tongue
 - Umbilical hernia
 - Imperforate anus
- The nurse notes that a girl, 8 years old, is exhibiting signs of precocious puberty. If left untreated, the nurse is aware that the young girl is at high risk for which of the following complications?

 - Plagiocephaly
 - Short stature
 - Infertility
 - Endometriosis
- A young girl is experiencing precocious puberty. Which of the following patient-care goals would be appropriate for the nurse to include in the child's plan of care? The young girl will: Select all that apply.

 - Wear age-appropriate attire.
 - Shave axillary hair, as needed.
 - Not menstruate before age nine.
 - Have normal hormonal levels while receiving medication.
 - State an understanding of the need for daily oral medications.
- A young boy who has been diagnosed with growth hormone deficiency is to receive synthetic growth hormone. When providing medication teaching to the boy and his parents, which of the following information should the nurse include?

 - Educate the boy and his parents regarding the rationale for the administration of the subcutaneous injections.
 - Advise the boy to immediately report signs and symptoms of gynecomastia.
 - Advise the boy that he will reach his desired height if he takes the medication as ordered.
 - Educate the boy that to maintain his height, he will have to take the medication for the rest of his life.
- A nurse is educating a young boy about the assessments required to make a diagnosis of growth hormone deficiency. Which of the following information should the nurse include in his or her teaching?

 - A biopsy of the child's testes will be conducted.
 - An x-ray of the child's wrists will be performed.
 - The child will have an MRI of his hypothalamus.
 - The child will receive IV dye for an adrenal fluoroscopy.
- A child with type 1 diabetes mellitus has been diagnosed with ketoacidosis. Which of the following laboratory findings is consistent with the diagnosis?

 - Hemoglobin A1C: 5.5%
 - Fasting blood glucose: 124 mg/dL
 - Serum pH: 7.24
 - Potassium level: 3.9 mEq/L

10. A 2-year-old child has just been diagnosed with type 1 diabetes. The nurse is providing education to the parents regarding signs of hypoglycemia. Which of the following information should the nurse include in her teaching session?
 1. Child's breath will smell like fruit.
 2. Child will complain of excessive thirst.
 3. Child will complain of sleepiness and will appear fatigued.
 4. Child's behavior will resemble a burst of anger or a temper tantrum.
11. A nurse is providing education to 4 sets of parents whose children have been diagnosed with type 1 diabetes. The nurse should provide follow-up education to the parents who state that they will perform which of the following actions?
 1. Parents of a 2-year-old: "We will have our daughter prick her finger for each glucose testing."
 2. Parents of a 5-year-old: "We will give our daughter a code word that she will say when she feels a hypoglycemic episode developing."
 3. Parents of a 9-year-old: "We will monitor our daughter as she draws up and administers her insulin injections."
 4. Parents of a 17-year-old: "We will allow our daughter to take responsibility for all of her own diabetic care."
12. The nurse advises the parents of a 1½-year-old who is newly diagnosed with type 1 diabetes that the child's blood glucose level before dinner should be between 90 and 140 mg/dL. The mother states, "But that is much higher than I read on an Internet Web site." Which of the following responses by the nurse is appropriate?
 1. "I am sorry, I was thinking of the level for after dinner. The correct before dinner level is 70 to 110 mg/dL."
 2. "The level is higher than what you will usually see because young children's diets are not as predictable as the diets of older children and adults."
 3. "The level before breakfast should be 70 to 100 mg/dL, but the before dinner level should be a higher level."
 4. "You will find that your primary health-care provider will change the level at each visit. The goal starts at a high level and drops as your child responds to the insulin."
13. The school nurse is responsible for caring for a number of school children with type 1 diabetes. Before which of the following activities should the nurse make sure a child consumes a snack? The child who:
 1. sculpts in art class.
 2. plays in the band.
 3. acts in the school play.
 4. plays on the soccer team.
14. A child has recently been diagnosed with type 1 diabetes mellitus. Which of the following factors in his medical and family histories would the nurse expect to see?
 1. Child's grandfather has been diabetic since childhood.
 2. Child's body mass index is 30.
 3. Child rarely engages in aerobic activities.
 4. Child has recently gained 15 pounds.
15. A teenage child has been diagnosed with type 2 diabetes. The nurse determines that the child will likely be administered which of the following medications?
 1. Metformin (Glucophage)
 2. Aspart (Novolog)
 3. Detemir (Levemir)
 4. Glargine (Lantus)
16. Four sick children with type 1 diabetes have been admitted to the hospital. Which child is most at risk of developing hypoglycemia? The child with:
 1. bacterial sepsis.
 2. intussusception.
 3. jaundice.
 4. chickenpox.

REVIEW ANSWERS**1. ANSWER: 4****Rationale:**

1. Children with PKU may eat starches and fats.
2. Children with PKU may eat vegetables.
3. Children with PKU may eat fruits.
4. Children with PKU may not consume animal proteins.

TEST-TAKING TIP: Children with PKU are unable to digest phenylalanine, an essential amino acid. The amino acid primarily is found in animal protein. Because the amino acid is essential, the children must consume some phenylalanine, but the children's serum levels are monitored to make sure that the levels do not become dangerous. If children's levels do exceed safe levels, the children would experience cognitive deficits as well as other signs/symptoms.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation

Client Need: Physiological Integrity: Reduction of Risk

Potential: Potential for Alterations in Body Systems

Cognitive Level: Application

2. ANSWER: 2**Rationale:**

1. Cord blood is sent for blood typing and Coombs' testing. It should not, however, be sent for newborn screening.
2. Blood collected by heel stick on a 2-day-old baby would be sent for newborn screening.
3. Urine may be collected to assess for pathology in the baby (e.g., the presence of toxic substances). Urine is not sent for newborn screening.
4. Meconium is not sent for newborn screening.

TEST-TAKING TIP: Blood is sent for newborn screening in all 50 states, although the list of diseases assessed is not consistent from state to state. One disease that newborn blood is assessed for in all states is PKU. Because a child with PKU does not possess the enzyme needed to digest phenylalanine, the amino acid remains in the baby's bloodstream. The amino acid is found in formula and in breast milk. In order for the test to be accurate, the baby must have consumed the protein for 24 hr. Babies should, therefore, be at least 24 hr old before their blood is sent for analysis.

Content Area: Child Health

Integrated Processes: Nursing Process: Implementation

Client Need: Health Promotion and Maintenance: Health Screening

Cognitive Level: Application

3. ANSWER: 50.66 mcg PO daily**Rationale:**

Ratio and proportion method:

3,377 grams equals 3.377 kg because:

$$1 \text{ kg} : 1,000 \text{ g} = x \text{ kg} : 3,377 \text{ g}$$

$$x = 3.377$$

If the maximum safe dosage of Synthroid is 15 mcg/kg/day, then a baby whose weight is 3.377 kg would require a medicine that is 15 times the baby's weight = 50.655.

$$15 \text{ mcg}/1 \text{ kg} = x \text{ mcg}/3.377 \text{ kg}$$

$$x = 50.655 \text{ mcg}$$

When rounded to the second place to the right of the decimal, the maximum safe dosage becomes 50.66 mcg PO daily.

Dimensional analysis method:

$$\frac{15 \text{ mcg}}{1 \text{ kg/day}} \times \frac{1 \text{ kg}}{1,000 \text{ g}} \times 3,377 \text{ g} = 50.655, \text{ or } 50.66 \text{ mcg/day}$$

TEST-TAKING TIP: The recommended safe dosage for this medication is quoted as a range—from 10 to 15 mcg/kg. Because the question asked for the "safe maximum dosage," only the higher recommended dosage needs to be calculated.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation

Client Need: Physiological Integrity: Pharmacological and Parenteral Therapies: Dosage Calculation

Cognitive Level: Synthesis

4. ANSWER: 3 and 4**Rationale:**

1. Clubfeet are not associated with congenital hypothyroidism (CHT).
2. Cleft palate is not associated with CHT.
3. Protruding tongue is associated with CHT.
4. Umbilical hernia is associated with CHT.
5. Imperforate anus is not associated with CHT.

TEST-TAKING TIP: The appearance of newborns with CHT is quite distinctive: large fontanels, protruding tongue, and umbilical hernia. In addition, the nurse will likely note a baby who eats very poorly because of marked lethargy and a baby with jaundice that lasts longer than expected.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Assessment

Client Need: Physiological Integrity: Physiological

Adaptation: Alterations in Body Systems

Cognitive Level: Application

5. ANSWER: 2**Rationale:**

1. Plagiocephaly, or flat head syndrome, is seen in neonates who are placed on their backs all day as well as for sleep.
2. Short stature is seen in children with precocious puberty.
3. Infertility is not associated with precocious puberty.
4. Endometriosis is not associated with precocious puberty.

TEST-TAKING TIP: When children mature early, their growth plates will close prematurely. As a result, their statures are lower than their genetically expected height.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Analysis

Client Need: Physiological Integrity: Reduction of Risk Potential: Potential for Alterations in Body Systems
Cognitive Level: Application

6. ANSWER: 1, 3, and 4

Rationale:

1. The nurse would expect the child to wear age-appropriate attire.
2. The nurse would not expect the child to shave her axillary hair.
3. The nurse would expect the child not to menstruate before age 9.
4. The nurse would expect the child to have normal hormonal levels while receiving medication.
5. The medications are administered intramuscularly, usually once per month.

TEST-TAKING TIP: Girls who are experiencing precocious puberty are maturing much earlier than expected. Even though the girls may appear to be older than their years, they are still young children. The nurse, therefore, would expect the children's behavior to be consistent with their age.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Planning

Client Need: Physiological Integrity: Reduction of Risk

Potential: Potential for Alterations in Body Systems

Cognitive Level: Application

7. ANSWER: 1

Rationale:

1. This statement is correct. The child will receive growth hormone (GH) subcutaneous injections at bedtime six to seven times each week.
2. Gynecomastia is not seen with GH injections.
3. This statement is untrue. Even with the injections, the boy may not reach his desired height.
4. The medication is taken until either the child reaches his desired height or the growth plates fuse.

TEST-TAKING TIP: Because GH is naturally produced by the anterior pituitary gland during periods of sleep, the injections of GH for those children who produce deficient supplies is administered at bedtime. The vast majority of children who are treated for GH deficiency are male.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation

Client Need: Physiological Integrity: Pharmacological and Parenteral Therapies: Expected Actions/Outcomes

Cognitive Level: Application

8. ANSWER: 2

Rationale:

1. A biopsy of the child's testes is not conducted.
2. An x-ray of the child's wrists will be performed.
3. An MRI of the hypothalamus will not be performed.
4. An adrenal fluoroscopy will not be performed.

TEST-TAKING TIP: To determine whether the child's growth is complete, the endocrinologist will x-ray the child's wrists. The growth plate will be measured to determine whether the child has reached his or her maximum height.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation; Teaching/Learning

Client Need: Physiological Integrity: Reduction of Risk

Potential: Diagnostic Tests

Cognitive Level: Application

9. ANSWER: 3

Rationale:

1. Hemoglobin A1C of 5.5% is a normal finding.
2. Fasting blood glucose of 124 mg/dL is a normal finding.
3. Serum pH of 7.24 is indicative of ketoacidosis.
4. Potassium of 3.9 mEq/L is a normal finding.

TEST-TAKING TIP: Ketoacidosis results when the body is devoid of circulating glucose and, as a result, goes into fat catabolism. When ketones, the by-product of fat catabolism, rise in the bloodstream, the pH of the blood drops precipitously.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Assessment

Client Need: Physiological Integrity: Physiological

Alterations: Alterations in Body Systems

Cognitive Level: Application

10. ANSWER: 4

Rationale:

1. The child's breath will smell like fruit if the child is hyperglycemic.
2. The child will complain of excessive thirst if the child is hyperglycemic.
3. The child will complain of sleepiness and will appear fatigued if he or she is hyperglycemic.
4. The child's behavior will resemble a burst of anger or a temper tantrum if the child is hypoglycemic.

TEST-TAKING TIP: Caring for toddlers with type 1 diabetes can be difficult because the children's daily behaviors often mimic signs of hypoglycemia. For that reason, parents must be forewarned to consider hypoglycemia as the reason for a child's aberrant behavior rather than simply as a "phase that the child is going through."

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation; Teaching/Learning

Client Need: Physiological Integrity: Physiological

Alterations: Alterations in Body Systems

Cognitive Level: Application

11. ANSWER: 1

Rationale:

1. Two-year-old children are too young to prick their own fingers for glucose testing.
2. This statement is appropriate. Five-year-old children often are able to predict a hypoglycemic episode. To assist the child to communicate the information to his or her parents, a short code word should be decided on.
3. This statement is appropriate. Nine-year-old children are able to draw up and inject their own insulin. The procedure, however, should be monitored by the parents.

4. This statement is appropriate. Although 17-year-old children may not be 100% reliable, by the time they are that age, they should be fully responsible for their own diabetic care.

TEST-TAKING TIP: Even though the disease state referenced in this question is diabetes mellitus, the question really relates to growth and development issues. The nurse should be familiar with the abilities of children at different ages.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation; Teaching/Learning

Client Need: Physiological Integrity: Reduction of Risk Potential: Potential for Complications of Diagnostic Tests/Treatments/Procedures

Cognitive Level: Application

12. ANSWER: 2

Rationale:

1. This statement is false.
2. This statement is correct. Toddlers often go through a stage when they are finicky eaters. They are, therefore, at high risk for becoming hypoglycemic. The higher preprandial blood glucose level helps to reduce the risk of developing low blood glucose levels.
3. This statement is false.
4. This statement is false. Each child's therapeutic regimen is individualized to his or her physiological condition and response.

TEST-TAKING TIP: If a child's glucose levels are markedly elevated over a number of days, the parents should be advised to report the results to the child's diabetic care provider. In response, it is likely that the practitioner will increase the child's insulin dosages.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation

Client Need: Physiological Integrity: Reduction of Risk

Potential: System Specific Assessments

Cognitive Level: Application

13. ANSWER: 4

Rationale:

1. The child will likely not need an extra snack before sculpting in art class.
2. The child will likely not need an extra snack before playing in the band.
3. The child will likely not need an extra snack before acting in the school play.
4. The child will need an extra snack before playing on the soccer team.

TEST-TAKING TIP: Aerobic exercise improves the utilization of glucose by the cells of the body. As a result, during active exercise, children's insulin needs drop. To compensate for the reduced insulin demand, the child should consume an extra snack.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation

Client Need: Physiological Integrity: Reduction of Risk

Potential: Potential for Alterations in Body Systems

Cognitive Level: Application

14. ANSWER: 1

Rationale:

1. The nurse would expect to see that the child has a direct relative who is (or was) a type 1 diabetic.
2. Children with a variety of body structures develop type 1 diabetes.
3. Both active and sedentary children develop type 1 diabetes.
4. Type 1 diabetes may occur after a recent weight loss or when the child's weight is stable.

TEST-TAKING TIP: Type 1 diabetes is an autoimmune disease with a strong genetic etiology. Although no direct genetic inheritance has been identified, the influence of a variety of factors, one of which is genetics, is known to be the etiology of the disease.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Assessment

Client Need: Physiological Integrity: Physiological

Adaptation: Alterations in Body Systems

Cognitive Level: Application

15. ANSWER: 1

Rationale:

1. Metformin (Glucophage) is usually the first-line drug for patients with type 2 diabetes.
2. Aspart (Novolog) is an injectable, short-acting insulin. It is administered to those with type 1 diabetes.
3. Detemir (Levemir) is an injectable, intermediate-acting insulin. It is administered to those with type 1 diabetes.
4. Glargine (Lantus) is an injectable, intermediate-acting insulin. It is administered to those with type 1 diabetes.

TEST-TAKING TIP: The nurse must be familiar with the medications administered to those with diabetes. Because those with type 1 diabetes secrete no insulin, and because insulin is digested when taken orally, type 1 diabetics must receive injectable insulin. In contrast, those with type 2 diabetes do produce insulin, but their bodies utilize the insulin poorly. They usually are controlled while taking an oral hypoglycemic agent.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Analysis

Client Need: Physiological Integrity: Pharmacological and

Parenteral Therapies: Expected Actions/Outcomes

Cognitive Level: Application

16. ANSWER: 1

Rationale:

1. The child with bacterial sepsis is most at high risk for developing hypoglycemia.
2. The child with intussusception is not especially at high risk for developing hypoglycemia.
3. The child with jaundice is not especially at high risk for developing hypoglycemia.
4. The child with chickenpox is not especially at high risk for developing hypoglycemia.

TEST-TAKING TIP: Those with bacterial sepsis have bacteria in their bloodstream. Most bacteria utilize glucose for fuel. Because the bacteria would be consuming much of the glucose in the child's bloodstream, he or she would be at most high risk for developing hypoglycemia.

Content Area: Pediatrics

Integrated Processes: Nursing Process: Implementation

Client Need: Physiological Integrity: Reduction of Risk

Potential: Potential for Alterations in Body Systems

Cognitive Level: Analysis