

## Clayton: Basic Pharmacology for Nurses, 15<sup>th</sup> Edition

### Chapter 3: Drug Action Across the Life Span

#### Test Bank

#### MULTIPLE CHOICE

1. What time will the trough blood level need to be drawn if the nurse administers the intravenous medication dose at 9:00 AM?
  - A. 6:30 AM
  - B. 8:30 AM
  - C. 9:30 AM
  - D. 11:30 AM

ANS: B

|   | Feedback  |
|---|---|
| A | Trough blood levels measure the lowest blood level of medicine and are obtained just before the dose is administered. This time is too early to obtain the blood level. |
| B | Trough blood levels are drawn just before the dose is to be administered.   |
| C | Trough blood levels measure the lowest blood level of medicine and are obtained before the dose is administered. This time is after the medication is administered.     |
| D | Trough blood levels measure the lowest blood level of medicine and are obtained before the dose is administered. This time is after the medication is administered.     |

DIF: Cognitive Level: Application REF: 31

TOP: Nursing Process Step: Implementation

MSC: NCLEX Client Needs Category: Physiological Integrity

2. What will the nurse expect the health care provider's order to be when starting an older adult patient on thyroid hormone replacement therapy?
  - A. Administer a loading dose of the drug
  - B. Directions on how to taper the drug
  - C. A dosage that is one third to one half of the regular dosage
  - D. A dosage that is double the regular dosage

ANS: C

|   | Feedback  |
|---|---|
| A | Loading doses of drugs could cause severe toxicity.   |
| B | Tapering off is characteristic of discontinuation of medications and is not appropriate for this situation. |
| C | To prevent toxicity, dosages for new medications in older adults should be one                              |

|          |   |
|----------|---|
|          | third to one half the amount of a standard adult dosage.                    |
| <b>D</b> | Older adults generally need a lower medication dosage than younger patients |

DIF: Cognitive Level: Application REF: 33  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Physiological Integrity

3. Which drugs cause birth defects?  
 A. Teratogens  
 B. Carcinogens  
 C. Metabolites  
 D. Placebos

ANS: A

|          | Feedback  |
|----------|---|
| <b>A</b> | Teratogens are drugs that cause birth defects.          |
| <b>B</b> | Carcinogens cause cancer.                               |
| <b>C</b> | Metabolites are the end product of metabolism.          |
| <b>D</b> | Placebos are drugs that have no pharmacologic activity. |

DIF: Cognitive Level: Knowledge REF: 34  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity

4. Which life-threatening illness may occur as a result of aspirin (salicylate) administration during viral illness to patients younger than 20 years of age?  
 A. Anaphylactic shock  
 B. Reye’s syndrome  
 C. Chickenpox  
 D. Influenza A

ANS: B

|          | Feedback   |
|----------|--|
| <b>A</b> | Anaphylactic shock is caused by a hypersensitivity reaction.   |
| <b>B</b> | Children are susceptible to Reye’s syndrome if they ingest aspirin at the time of or shortly after a viral infection of chickenpox or influenza. |
| <b>C</b> | Chickenpox is the result of being infected with a virus.   |
| <b>D</b> | Influenza A is caused by a pathogen.   |

DIF: Cognitive Level: Knowledge REF: 32  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Physiological Integrity

5. Which classification of medications commonly causes allergic reactions in children?  
 A. Antacids

- B. Analgesics
- C. Antibiotics
- D. Anticonvulsants

ANS: C

|   | Feedback   |
|---|--|
| A | Antacids rarely cause allergic reactions.  |
| B | Children are not particularly allergic to analgesics.  |
| C | Antibiotics, especially penicillins, commonly cause allergic reactions in children. Intravenous antibiotics can cause rapid reactions; therefore, the pediatric patient’s response to a medication should be assessed and monitored closely. |
| D | Children are not particularly allergic to anticonvulsants.   |

DIF: Cognitive Level: Knowledge REF: 32  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity

6. After giving instructions to an expectant mother about taking medications during pregnancy, which patient statement indicates the need for further teaching?
- A. “I will not take herbal medicines during pregnancy.”
  - B. “For morning sickness, I will try crackers instead of taking a drug.”
  - C. “If I get a cold, I will avoid taking nonprescription medications until I check with my physician.”
  - D. “I will limit my alcohol intake to only one glass of wine weekly.”

ANS: D

|   | Feedback  |
|---|---|
| A | Limited studies are available regarding the use of herbal medications in general, and thus they should be avoided during pregnancy.   |
| B | Alternative nonpharmacologic treatments are appropriate to use during morning sickness. The pregnant woman should also avoid using nonprescription drugs because few data are available about safe use in pregnancy |
| C | Because few medicines can be considered completely safe for use in pregnancy, the physician needs to approve and recommend the use of nonprescription drugs.  |
| D | Alcohol needs to be eliminated during pregnancy and for 2 to 3 months prior to conception.  |

DIF: Cognitive Level: Application REF: 35  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Health Promotion and Maintenance

7. When is the ideal time for a nursing mother to take her own medications?
- A. Before the infant latches on to begin to breast-feed
  - B. As soon as the mother wakes up in the morning

- C. Right before the mother goes to sleep at night
- D. As soon as the infant finishes breast-feeding

ANS: D

| Feedback |  |
|----------|--|
| <b>A</b> | Medications taken directly before breast-feeding may have a high concentration in the milk and possibly pass on to the baby.   |
| <b>B</b> | The mother must take into consideration when her medications are ordered to be taken, and schedule them around breast-feeding. |
| <b>C</b> | The mother must take into consideration when her medications are ordered to be taken, and schedule them around breast-feeding. |
| <b>D</b> | Taking medications after breast-feeding reduces the amount of the medication that will reach the baby.                         |

DIF: Cognitive Level: Comprehension REF: 35  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Health Promotion and Maintenance

8. Which age-related change would most affect transdermal drug absorption in geriatric patients the most?
- A. Difficulty swallowing
  - B. Diminished kidney function
  - C. Changes in pigmentation
  - D. Altered circulatory status

ANS: D

| Feedback |   |
|----------|---|
| <b>A</b> | Difficulty swallowing would not affect transdermal drugs being absorbed.                  |
| <b>B</b> | Kidney function affect drug excretion.  |
| <b>C</b> | Changes in pigmentation would not affect transdermal drug absorption.                     |
| <b>D</b> | The decreased circulation that occurs with aging will affect transdermal drug absorption. |

DIF: Cognitive Level: Application REF: 28  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity

9. Which would be considered to reduce accumulation of a drug in a patient who has decreased liver function?
- A. Decreasing the time interval between dosages
  - B. Reducing the dosage
  - C. Administering the medication intravenously
  - D. Changing the drug to one that has a longer half-life

ANS: B

| Feedback |   |
|----------|---|
| <b>A</b> | Decreasing the time interval between dosages would increase the accumulation of the drug.   |
| <b>B</b> | Dosages must be reduced to prevent accumulation.  |
| <b>C</b> | The intravenous route has the fastest absorption and with liver dysfunction would increase the accumulation of the drug.                          |
| <b>D</b> | A similar drug with a longer half-life would stay in the system longer; with impaired liver function, the result would be increased accumulation. |

DIF: Cognitive Level: Comprehension REF: 29  
 TOP: Nursing Process Step: Planning  
 MSC: NCLEX Client Needs Category: Physiological Integrity

10. The nurse is teaching an elderly patient with difficulty swallowing about his medications. Which explanation by the nurse is most helpful?
- A. "Enteric-coated tablets can be crushed and taken with applesauce."
  - B. "Tablets that are scored can be broken in half."
  - C. "Medications labeled 'SR' can be crushed."
  - D. "Avoid taking medications in liquid form."

ANS: B

| Feedback |   |
|----------|---|
| <b>A</b> | Enteric-coated tables should never be crushed because of the effect on the absorption rate and potential for toxicity.        |
| <b>B</b> | It is acceptable to break scored tablets in half to facilitate swallowing of the medication.                                  |
| <b>C</b> | Medications labeled "SR" indicate "sustained release" and should not be crushed because of the effect on the absorption rate. |
| <b>D</b> | Medication in liquid form may be easier to swallow.   |

DIF: Cognitive Level: Application REF: 34  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Health Promotion and Maintenance

11. The nurse is administering an antibiotic intravenously. Which blood level determines the lowest amount of medication present in the patient?
- A. Peak
  - B. Serum
  - C. Therapeutic
  - D. Trough

ANS: D

| Feedback |   |
|----------|---|
| <b>A</b> | The peak is the highest amount of medication in the blood |

|          |  |
|----------|--|
| <b>B</b> | Serum level identifies the amount of medication present.                 |
| <b>C</b> | Therapeutic levels identify the range in which a medication is effective |
| <b>D</b> | The lowest amount of a medication in the blood is the trough.            |

DIF: Cognitive Level: Knowledge REF: 31  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity

12. Which patient would the nurse identify as having the lowest rate of absorption of enteral medications?
- A. 5-year-old boy
  - B. 18-year-old woman
  - C. 55-year-old man
  - D. 85-year-old woman

ANS: A

| Feedback |   |
|----------|---|
| <b>A</b> | Males' stomachs empty more rapidly; children have increased motility resulting in decreased absorption time.  |
| <b>B</b> | As one gets older, gastrointestinal motility is decreased, allowing for increased absorption time; women have slower gastric emptying, resulting in more time for absorption. |
| <b>C</b> | Males' stomachs empty more rapidly; however, as one gets older, gastrointestinal motility is decreased, resulting in an increase in absorption time.                          |
| <b>D</b> | As one gets older, gastrointestinal motility is decreased, allowing for increased absorption time; women have slower gastric emptying, resulting in more time for absorption. |

DIF: Cognitive Level: Application REF: 28  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity

**MULTIPLE RESPONSE**

1. One of the prescribed medications for a 36-week-gestational-age baby girl is a topical water-soluble medication to be applied to the perineum daily to treat an inflammatory rash. What considerations is the nurse aware of before medication administration? (Select all that apply.)
- A. Age of the client
  - B. Location of topical application
  - C. Increased intestinal transit rate
  - D. Condition of the skin
  - E. Gastric pH of 8

ANS: A, B, D

|                  | Feedback   |
|------------------|--|
| <b>Correct</b>   | The premature infant’s outer layer of skin is not fully developed, although it is more hydrated, which will enhance the absorption of the topical water-soluble medication.<br>Neonates often wear diapers, which will act as an occlusive dressing, thereby increasing absorption.<br>The client’s inflammatory condition will increase the absorption of medication. |
| <b>Incorrect</b> | The intestinal transit rate increases as the newborn matures. This is irrelevant when a medication is applied topically.<br>Gastric pH would not factor into metabolism of a medication that is applied topically.   |

DIF: Cognitive Level: Application REF: 27  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Physiological Integrity

2. The nurse is caring for a 4-month-old child who is on a water-soluble medication for seizures. The child’s mother voices concern that the dosage seems “too much” for the child’s age and would like the dosage verified. What actions will the nurse take? (Select all that apply.)
- A. Verify dosage requirements in the *PDR* in mg/kg.
  - B. Compare the water composition requirements of adults and children.
  - C. Evaluate lean body mass and total fat content in adults and infants.
  - D. Chart “refused per mother” on the MAR and do not administer.
  - E. Compare transportation in the circulation of plasma-bound proteins between adults and children.

ANS: A, B

|                  | Feedback  |
|------------------|---|
| <b>Correct</b>   | The <i>PDR</i> lists the recommended dosages for all age groups.<br>Because dilution may vary among age groups, the water concentration should be verified prior to administration.   |
| <b>Incorrect</b> | As we age, lean body mass and total body water decrease while total fat content increases; however, this drug is not fat-soluble.<br>The nurse is responsible for administering the medication as ordered after verifying that it is correct; the mother is asking for verification, not refusal of administration.<br>Drugs that are relatively insoluble are transported in the circulation by being bound to plasma proteins; however, this drug is water-soluble. |

DIF: Cognitive Level: Application REF: 29  
 TOP: Nursing Process Step: Implementation  
 MSC: NCLEX Client Needs Category: Physiological Integrity

3. Why are elderly patients at increased risk for drug interactions and toxicity? (Select all that apply.)
- A. They have a higher incidence of malnourishment.
  - B. Their renal function is enhanced.
  - C. They have increased use of multiple medications.
  - D. Hepatic function is reduced.
  - E. There are often issues with swallowing.

ANS: A, C, D

|                  | Feedback  |
|------------------|---|
| <b>Correct</b>   | Older adult patients have an increased incidence of malnourishment, which puts them at increased risk for drug interactions and toxicity.<br>Older adult patients are often on multiple medications, which puts them at increased risk for drug interactions and toxicity.<br>Older adult patients have reduced hepatic function, which puts them at increased risk for drug interactions and toxicity. |
| <b>Incorrect</b> | Renal function diminishes in the elderly as a result of decreased renal blood flow, reduced cardiac output, loss of glomeruli, and diminished tubular function and concentrating ability.<br>Older adults have swallowing difficulties, leading to compliance issues, but taking drugs less often would not result in toxicity.   |

DIF: Cognitive Level: Comprehension REF: 33  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity

4. Which patients require special considerations for medication administration? (Select all that apply.)
- A. 29-year-old pregnant woman
  - B. 2-month-old baby
  - C. 18-year-old college student
  - D. 45-year-old farmer
  - E. 82-year-old retired nurse

ANS: A, B, E

|                  | Feedback  |
|------------------|---|
| <b>Correct</b>   | Drug therapy during pregnancy should be avoided. Recommendations by the provider are necessary during any stage of pregnancy.<br>Pediatric patients are affected by differences in muscle mass, blood flow to muscles, as well as other physiological systems.<br>Elderly patients are affected by differences in muscle mass, blood flow to muscles, as well as other physiological systems. |
| <b>Incorrect</b> | Teenagers do not typically require special considerations for medication administration.<br>Adult patients do not typically require special considerations for  |



|  |                            |
|--|----------------------------|
|  | medication administration. |
|--|----------------------------|

DIF: Cognitive Level: Application REF: 31-33  
 TOP: Nursing Process Step: Planning  
 MSC: NCLEX Client Needs Category: Physiological Integrity

5. Which factors in a patient would influence gastrointestinal absorption of medications? (Select all that apply.)
- A. Stomach pH
  - B. Level of consciousness
  - C. Fever
  - D. Blood flow to gastric mucosa
  - E. Weight
  - F. Body surface area

ANS: A, D

|                  | Feedback   |
|------------------|--|
| <b>Correct</b>   | Absorption by passive diffusion across the membranes depends on the pH of the environment.<br>Increased blood flow to gastric mucosa increases absorption of medication and decreases time of absorption.  |
| <b>Incorrect</b> | Drug absorption does not depend on the mental status of the patient.<br>Fever does not affect drug absorption.<br>The patient's absolute weight does not affect drug absorption, although problems associated with weight greater than or less than normal may be a factor in the process.<br>Body surface area does not affect drug absorption. |

DIF: Cognitive Level: Application REF: 28  
 TOP: Nursing Process Step: Assessment  
 MSC: NCLEX Client Needs Category: Physiological Integrity