

Chapter 03: Lifespan Considerations

Lilley: Pharmacology and the Nursing Process, 9th Edition

MULTIPLE CHOICE

1. Drug transfer to the fetus is more likely during the last trimester of pregnancy for which reason?
 - a. Decreased fetal surface area
 - b. Increased placental surface area
 - c. Enhanced blood flow to the fetus
 - d. Increased amount of protein-bound drug in maternal circulation

ANS: C

Drug transfer to the fetus is more likely during the last trimester of pregnancy as a result of enhanced blood flow to the fetus. The other options are incorrect. Increased fetal surface area, not decreased, is a factor that affects drug transfer to the fetus. The placenta's surface area does not increase during this time. Drug transfer is increased because of an increased amount of free drug, not protein-bound drug, in the mother's circulation.

DIF: Cognitive Level: Understanding (Comprehension) TOP: Nursing Process: General

MSC: NCLEX: Health Promotion and Maintenance

2. The nurse is monitoring a patient who is in the 26th week of pregnancy and has developed gestational diabetes and pneumonia. She is given medications that pose a possible fetal risk, but the potential benefits may warrant the use of the medications in her situation. The nurse recognizes that these medications are in which U.S. Food and Drug Administration pregnancy safety category?
 - a. Category X
 - b. Category B
 - c. Category C
 - d. Category D

ANS: D

Pregnancy category D fits the description given. Category B indicates no risk to animal fetus; information for humans is not available. Category C indicates adverse effects reported in animal fetus; information for humans is not available. Category X consists of drugs that should not be used in pregnant women because of reports of fetal abnormalities and positive evidence of fetal risk in humans.

DIF: Cognitive Level: Understanding (Comprehension)

TOP: Nursing Process: Assessment

MSC: NCLEX: Safe and Effective Care Environment: Safety and Infection Control

3. When discussing dosage calculation for pediatric patients with a clinical pharmacist, the nurse notes that which type of dosage calculation is used most commonly in pediatric calculations?
 - a. West nomogram
 - b. Clark rule
 - c. Height-to-weight ratio

d. Milligram per kilogram of body weight formula

ANS: D

The milligram per kilogram formula, based on body weight, is the most common method of calculating doses for pediatric patients. The other options are available methods but are not the most commonly used. Height-to-weight ratio is not used.

DIF: Cognitive Level: Remembering (Knowledge)

TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

4. The nurse is assessing a newly admitted 83-year-old patient and determines that the patient is experiencing polypharmacy. Which statement most accurately illustrates polypharmacy?
- The patient is experiencing multiple illnesses.
 - The patient uses one medication for an illness several times per day.
 - The patient uses over-the-counter drugs for an illness.
 - The patient uses multiple medications simultaneously.

ANS: D

Polypharmacy usually occurs when a patient has several illnesses and takes medications for each of them, possibly prescribed by different specialists who may be unaware of other treatments the patient is undergoing. The other options are incorrect. Polypharmacy addresses the medications taken, not just the illnesses. Polypharmacy means the patient is taking several different medications, not just one, and can include prescription drugs, over-the-counter medications, and herbal products.

DIF: Cognitive Level: Understanding (Comprehension)

TOP: Nursing Process: Assessment

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

5. The nurse is aware that confusion, forgetfulness, and increased risk for falls are common responses in an elderly patient who is taking which type of drug?
- Laxatives
 - Anticoagulants
 - Sedatives
 - Antidepressants

ANS: C

Sedatives and hypnotics often cause confusion, daytime sedation, ataxia, lethargy, forgetfulness, and increased risk for falls in the elderly. Laxatives, anticoagulants, and antidepressants may cause adverse effects in the elderly, but not the ones specified in the question.

DIF: Cognitive Level: Understanding (Comprehension)

TOP: Nursing Process: Implementation

MSC: NCLEX: Safe and Effective Care Environment: Safety and Infection Control

6. For accurate medication administration to pediatric patients, the nurse must take into account which criteria?
- Organ maturity
 - Renal output
 - Body temperature
 - Height

ANS: A

To administer medications to pediatric patients accurately, one must take into account organ maturity, body surface area, age, and weight. The other options are incorrect; renal output and body temperature are not considerations, and height alone is not sufficient.

DIF: Cognitive Level: Understanding (Comprehension)

TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

7. The nurse recognizes that an elderly patient may experience a reduction in the stomach's ability to produce hydrochloric acid. This change may result in which effect?
- Delayed gastric emptying
 - Increased gastric acidity
 - Decreased intestinal absorption of medications
 - Altered absorption of some drugs

ANS: D

Reduction in the stomach's ability to produce hydrochloric acid is an aging-related change that results in a decrease in gastric acidity and may alter the absorption of some drugs. The other options are not results of reduced hydrochloric acid production.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Assessment MSC: NCLEX: Health Promotion and Maintenance

8. The nurse is administering drugs to neonates and will consider which factor may contribute the most to drug toxicity?
- The lungs are immature.
 - The kidneys are small.
 - The liver is not fully developed.
 - Excretion of the drug occurs quickly.

ANS: C

A neonate's liver is not fully developed and cannot detoxify many drugs. The other options are incorrect. The lungs and kidneys do not play major roles in drug metabolism. Renal excretion is slow, not fast, because of organ immaturity, but this is not the factor that contributes the most to drug toxicity.

DIF: Cognitive Level: Understanding (Comprehension)

TOP: Nursing Process: Planning dosage has been double-checked and updated

MSC: NCLEX: Health Promotion and Maintenance

9. An 83-year-old woman has been given a thiazide diuretic to treat heart failure. She and her daughter should be told to watch for which problems?
- Constipation and anorexia
 - Fatigue, leg cramps, and dehydration
 - Daytime sedation and lethargy
 - Edema, nausea, and blurred vision

ANS: B

Electrolyte imbalance, leg cramps, fatigue, and dehydration are common complications when thiazide diuretics are given to elderly patients. The other options do not describe complications that occur when these drugs are given to the elderly.

DIF: Cognitive Level: Understanding (Comprehension)
Planning

TOP: Nursing Process:

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

10. An elderly patient with a new diagnosis of hypertension will be receiving a new prescription for an antihypertensive drug. The nurse expects which type of dosing to occur with this drug therapy?
- Drug therapy will be based on the patient's weight.
 - Drug therapy will be based on the patient's age.
 - The patient will receive the maximum dose that is expected to reduce the blood pressure.
 - The patient will receive the lowest possible dose at first, and then the dose will be increased as needed.

ANS: D

As a general rule, dosing for elderly patients should follow the admonition, "Start low, and go slow," which means to start with the lowest possible dose (often less than an average adult dose) and increase the dose slowly, if needed, based on patient response. The other responses are incorrect.

DIF: Cognitive Level: Understanding (Comprehension)
Planning

TOP: Nursing Process:

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

11. The nurse is trying to give a liquid medication to a $2\frac{1}{2}$ -year-old child and notes that the medication has a strong taste. Which technique is the best way for the nurse to give the medication to this child?
- Give the medication with a spoonful of ice cream.
 - Add the medication to the child's bottle.
 - Tell the child you have candy for him.
 - Add the medication to a cup of milk.

ANS: A

Ice cream or another nonessential food disguises the taste of the medication. The other options are incorrect. If the child does not drink the entire contents of the bottle, medication is wasted and the full dose is not administered. Using the word *candy* with drugs may lead to the child thinking that drugs are actually candy. If the medication is mixed with a cup of milk, the child may not drink the entire cup of milk, and the distasteful drug may cause the child to refuse milk in the future.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Implementation

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies

12. The nurse is preparing to give an injection to a 4-year-old child. Which intervention is age appropriate for this child?
- Give the injection without any advanced preparation.
 - Give the injection, and then explain the reason for the procedure afterward.
 - Offer a brief, concrete explanation of the procedure at the patient's level and with the parent or caregiver present.

- d. Prepare the child in advance with details about the procedure without the parent or caregiver present.

ANS: C

For a 4-year-old child, offering a brief, concrete explanation about a procedure just beforehand, with the parent or caregiver present, is appropriate. The other options are incorrect for any age group.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Implementation MSC: NCLEX: Psychosocial Integrity

MULTIPLE RESPONSE

1. Which statements are true regarding pediatric patients and pharmacokinetics? (*Select all that apply.*)
- The levels of microsomal enzymes are decreased.
 - Perfusion to the kidneys may be decreased and may result in reduced renal function.
 - First-pass elimination is increased because of higher portal circulation.
 - First-pass elimination is reduced because of the immaturity of the liver.
 - Total body water content is much less than in adults.
 - Gastric emptying is slowed because of slow or irregular peristalsis.
 - Gastric emptying is more rapid because of increased peristaltic activity.

ANS: A, B, D, F

In children, first-pass elimination by the liver is reduced because of the immaturity of the liver, and microsomal enzymes are decreased. In addition, gastric emptying is reduced because of slow or irregular peristalsis. Perfusion to the kidneys may be decreased, resulting in reduced renal function. The other options are incorrect. In addition, remember that total body water content is greater in children than in adults.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Assessment MSC: NCLEX: Health Promotion and Maintenance

2. Which statements are true regarding the elderly and pharmacokinetics? (*Select all that apply.*)
- The levels of microsomal enzymes are decreased.
 - Fat content is increased because of decreased lean body mass.
 - Fat content is decreased because of increased lean body mass.
 - The number of intact nephrons is increased.
 - The number of intact nephrons is decreased.
 - Gastric pH is less acidic.
 - Gastric pH is more acidic.

ANS: A, B, E, F

In the elderly, levels of microsomal enzymes are decreased because the aging liver is less able to produce them; fat content is increased because of decreased lean body mass; the number of intact nephrons is decreased as the result of aging; and gastric pH is less acidic because of a gradual reduction of the production of hydrochloric acid. The other options are incorrect statements.

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Assessment

MSC: NCLEX: Health Promotion and Maintenance

COMPLETION

1. A 7-year-old child will be receiving amoxicillin (Amoxil) 50 mg/kg/day in two divided doses. The child weighs 55 pounds. The medication, once reconstituted, is available as an oral suspension of 125 mg/5 mL. Identify how many milliliters will the child receive per dose. _____

ANS:

25 mL per dose

Convert pounds to kilograms: 55 pounds = 25 kg.

$25 \text{ kg} \times 50 \text{ mg/kg/day} = 1250 \text{ mg/day}$

To get the amount per dose, divide 1250 by 2, which equals 625 mg/dose.

To calculate the milliliters:

$125 \text{ mg}:5 \text{ mL} :: 625 \text{ mg}:x \text{ mL}$

$(125 \times x) = (5 \times 625); 125x = 3125; x = 25 \text{ mL/dose}$

DIF: Cognitive Level: Applying (Application)

TOP: Nursing Process: Implementation

MSC: NCLEX: Physiological Integrity: Pharmacological and Parenteral Therapies