

## Chapter 01: Drug Definitions, Standards, and Information Sources

### Willihnganz: Clayton's Basic Pharmacology for Nurses, 19th Edition

#### MULTIPLE CHOICE

1. Which name identifies a drug listed by the US Food and Drug Administration (FDA)?
  - a. Brand
  - b. Nonproprietary
  - c. Official
  - d. Trademark

ANS: C

The official name is the name under which a drug is listed by the FDA. The brand name, or trademark, is the name given to a drug by its manufacturer. The nonproprietary, or generic, name is provided by the United States Adopted Names Council.

DIF: Cognitive Level: Knowledge

REF: p. 9

OBJ: 1NAT: NCLEX Client Needs Category: Safe, Effective Care

Environment TOP: Nursing Process Step: Assessment

CON:

Patient Education

2. Which source contains information specific to nutritional supplements?
  - a. *USP Dictionary of USAN & International Drug Names*
  - b. *Natural Medicines Comprehensive Database*
  - c. *United States Pharmacopoeia/National Formulary (USP NF)*
  - d. *Drug Interaction Facts*

ANS: C

*United States Pharmacopoeia/National Formulary* contains information specific to nutritional supplements. *USP Dictionary of USAN & International Drug Names* is a compilation of drug names, pronunciation guide, and possible future FDA approved drugs; it does not include nutritional supplements. *Natural Medicines Comprehensive Database* contains evidence-based information on herbal medicines and herbal combination products; it does not include information specific to nutritional supplements. *Drug Interaction Facts* contains comprehensive information on drug interaction facts; it does not include nutritional supplements.

DIF: Cognitive Level: Knowledge

REF: p. 4

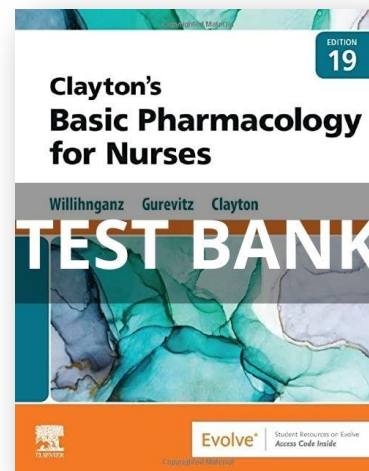
OBJ: 3

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Assessment

CON: Nutrition | Patient Education

3. Which drug reference contains drug monographs that describe all drugs in a therapeutic class?
  - a. *Drug Facts and Comparisons*



- b. *Drug Interaction Facts*
- c. *Handbook on Injectable Drugs*
- d. *Martindale—The Complete Drug Reference*

ANS: A

*Drug Facts and Comparisons* contains drug monographs that describe all drugs in a therapeutic class. Monographs are formatted as tables to allow comparison of similar products, brand names, manufacturers, cost indices, and available dosage forms. Online version is available.

DIF: Cognitive Level: Knowledge REF: p. 4 Table 1.2  
OBJ: 3 NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Assessment CON: Safety | Patient Education | Clinical Judgment

4. Which drug reference contains monographs about virtually every single-entity drug available in the United States and describes therapeutic uses of drugs, including approved and unapproved uses?
- a. *Martindale: The Complete Drug Reference*
  - b. *AHFS Drug Information*
  - c. *Drug Reference*
  - d. *Drug Facts and Comparisons*

ANS: B

*AHFS Drug Information* contains monographs about virtually every single-entity drug available in the United States and describes therapeutic uses of drugs, including approved and unapproved uses.

DIF: Cognitive Level: Knowledge REF: p. 4 Table 1.2  
OBJ: 3 NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Planning CON: Safety | Patient Education | Clinical Judgment

5. Which online drug reference makes available to healthcare providers and the public a standard, comprehensive, up-to-date look up and downloadable resource about medicines?
- a. *American Drug Index*
  - b. *American Hospital Formulary*
  - c. *DailyMed*
  - d. *Drug Reference*

ANS: C

*DailyMed* makes available to healthcare providers and the public a standard, comprehensive, up-to-date look up and downloadable resource about medicines. The *American Drug Index* is not appropriate for patient use. The *American Hospital Formulary* is not appropriate for patient use. The *drug reference* is not appropriate for patient use.

DIF: Cognitive Level: Knowledge REF: p. 3 | p. 4 OBJ: 3  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Implementation  
CON: Safety | Patient Education | Clinical Judgment

6. Which legislation authorizes the FDA to determine the safety of a drug before its marketing?
- a. Federal Food, Drug, and Cosmetic Act (1938)
  - b. Durham Humphrey Amendment (1952)

- c. Controlled Substances Act (1970)
- d. Kefauver Harris Drug Amendment (1962)

ANS: A

The Federal Food, Drug, and Cosmetic Act of 1938 authorized the FDA to determine the safety of all drugs before marketing. Later amendments and acts helped tighten FDA control and ensure drug safety. The Durham Humphrey Amendment defines the kinds of drugs that cannot be used safely without medical supervision and restricts their sale to prescription by a licensed practitioner. The Controlled Substances Act addresses only controlled substances and their categorization. The Kefauver Harris Drug Amendment ensures drug efficacy and greater drug safety. Drug manufacturers are required to prove to the FDA the effectiveness of their products before marketing them.

DIF: Cognitive Level: Knowledge REF: p. 5 Table 1.3  
OBJ: 5 NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Assessment  
CON: Safety | Patient Education | Evidence | Health Care Law

7. Which classification does meperidine (Demerol) fall under?
- a. I
  - b. II
  - c. III
  - d. IV

ANS: B

Meperidine (Demerol) is a Schedule II drug; it has a high potential for abuse and may lead to severe psychological and physical dependence. Schedule I drugs have high potential for abuse and no recognized medical use. Schedule III drugs have some potential for abuse. Use may lead to low to moderate physical dependence or high psychological dependence. Schedule IV drugs have low potential for abuse. Use may lead to limited physical or psychological dependence.

DIF: Cognitive Level: Knowledge REF: p. 10 OBJ: 2  
NAT: NCLEX Client Needs Category: Safe, Effective Care Environment  
TOP: Nursing Process Step: Assessment CON: Patient Education | Addiction | Pain

8. Which action would the FDA take to expedite drug development and approval for an outbreak of smallpox?
- a. List smallpox as a health orphan disease.
  - b. Omit the preclinical research phase.
  - c. Extend the clinical research phase.
  - d. Fast track the investigational drug.

ANS: D

Once the Investigational New Drug Application has been approved, the drug can receive highest priority within the agency, which is called fast tracking. A smallpox outbreak would become a priority concern in the world. Orphan diseases are not researched in a priority manner. Preclinical research is not omitted. Extending any phase of the research would mean a longer time to develop a vaccine. The FDA must ensure that all phases of the preclinical and clinical research phase have been completed in a safe manner.

DIF: Cognitive Level: Knowledge REF: p. 7 OBJ: 5

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NAT: NCLEX Client Needs Category: Safe, Effective Care Environment  
TOP: Nursing Process Step: Assessment  
CON: Health Care Law | Health Care Policy | Infection | Care Coordination

9. Which statement is true about over-the-counter (OTC) drugs?
- They are not listed in the *USP NF*.
  - A prescription from a healthcare provider is needed.
  - They are sold without a prescription.
  - They are known only by their brand names.

ANS: C

OTC medications do not require a prescription. A variety of names, both generic and trade, can be used for individual drugs sold OTC. OTC drugs are listed in the *USP NF*. Prescription drugs require an order by a health professional who is licensed to prescribe, such as a physician, nurse practitioner, physician assistant, or dentist.

DIF: Cognitive Level: Comprehension REF: p. 2 OBJ: 2  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Planning CON: Patient Education

10. Which is the most authoritative reference for medications that are injected?
- Martindale: The Complete*
  - Handbook on Injectable Drugs*
  - DailyMed
  - Handbook of Nonprescription Drugs*

ANS: B

The *Handbook on Injectable Drugs* is the most comprehensive reference available on the topic of compatibility of injectable drugs. It is a collection of monographs for more than 300 injectable drugs that are listed alphabetically by generic name.

DIF: Cognitive Level: Knowledge REF: p. 4 OBJ: 3  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Assessment CON: Clinical Judgment | Safety

11. Which statement is true about Lomotil?
- Abuse potential for this drug is low.
  - Psychological dependency is likely.
  - There is a high potential for abuse.
  - This drug is not a controlled substance.

ANS: A

Lomotil, a Schedule V drug, has an abuse potential of limited physical or psychological dependence liability compared with drugs in Schedule IV. Because abuse potential is low with a Schedule V drug, a prescription may not be required. Psychological dependency is not likely with a Schedule V drug. Schedule V drugs are classified as controlled substances.

DIF: Cognitive Level: Knowledge REF: p. 5 Box 1.1 OBJ: 2  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Assessment CON: Clinical Judgment | Safety | Patient Education

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12. Which medication ordered for a patient with a substance abuse history has the greatest risk for abuse?
- Lomotil
  - Diazepam
  - Phenobarbital
  - Lortab

ANS: D

Lortab is a Schedule III drug with a high potential for abuse but less so than drugs in Schedules I and II. Lomotil is a Schedule V drug with a low potential for abuse compared with those in Schedule V. Diazepam is a Schedule IV drug with a low potential for abuse compared with those in schedule III. Phenobarbital is a Schedule IV drug with a low potential for abuse compared with those in Schedule III.

DIF: Cognitive Level: Application

REF: p. 5 Box 1.1

OBJ: 2

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Assessment CON: Addiction | Patient Education | Safety

13. An older adult experiencing shortness of breath is brought to the hospital by her daughter. While obtaining the medication history from the patient and her daughter, the nurse discovers that neither has a list of the patient's current medications or prescriptions. The patient has a weekly pill dispenser that contains four different pills. The prescriptions are filled through the local pharmacy. Which resource would be appropriate to use in determining the medication names and doses?
- Martindale—The Complete Drug Reference*
  - Drugs and Facts Comparisons*
  - Senior citizens' center
  - Patient's home pharmacy

ANS: D

The patient's pharmacy would have an accurate account of all the medications the client is currently taking. *Martindale—The Complete Drug Reference* has written information on medications and would not be an appropriate resource. *Drugs and Facts Comparisons* contains drug monographs that describe all drugs in a therapeutic class but would not help identify medications by photograph. The senior citizens' center is not likely to have specific patient medication information.

DIF: Cognitive Level: Application

REF: p. 2

OBJ: 3

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Assessment

CON: Care Coordination | Safety | Patient Education | Clinical Judgment

### MULTIPLE RESPONSE

1. Which statement(s) will be included when planning patient teaching regarding drug names? (*Select all that apply.*)
- Most drug companies place their products on the market under generic names.
  - The official name is the name under which the drug is listed by the US Food and Drug Administration (FDA).
  - Brand names are easier to pronounce, spell, and remember.
  - The first letter of the generic name is not capitalized.

- e. The chemical name is most meaningful to the patient.

ANS: B, C, D

The official name is the name under which the drug is listed by the FDA. Brand names are easier to pronounce, spell, and remember. The first letter of the generic name is not capitalized. Most drug companies place their products on the market under brand names instead of generic names. The chemical name is most meaningful to the chemist.

DIF: Cognitive Level: Comprehension REF: p. 2 | p. 9 OBJ: 1

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Planning CON: Patient Education | Clinical Judgment | Safety

2. Which drug(s) would be considered to be in the category Schedule II? (*Select all that apply.*)
- Marijuana
  - Percodan
  - Amphetamines
  - Fiorinal
  - Flurazepam

ANS: B, C

Schedule II drugs have a high potential for abuse, they are currently accepted in the United States, and use may lead to severe psychological or physical dependence. Percodan and amphetamines are considered Schedule II drugs. Marijuana is a Schedule I drug. Fiorinal is a Schedule III drug. Flurazepam is a Schedule IV drug.

DIF: Cognitive Level: Comprehension REF: p. 5 Box 1.1 OBJ: 2

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Assessment CON: Addiction | Clinical Judgment | Patient Education

## Chapter 02: Basic Principles of Drug Action and Drug Interactions

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#### MULTIPLE CHOICE

1. Which priority action should be implemented when hives are assessed on a patient started on a new medication?
- Notify physician of allergic reaction.
  - Notify physician of idiosyncratic reaction.
  - Notify physician of potential teratogenicity.
  - Notify physician of potential tolerance.

ANS: A

An allergic reaction is indicative of hypersensitivity and manifests with hives and/or urticaria, which are easily identified. An idiosyncratic reaction occurs when something unusual or abnormal happens when a drug is first administered. A teratogenic reaction refers to the occurrence of birth defects related to administration of the drug. Tolerance refers to the body's requirement for increasing dosages to achieve the same effects that a lower dose once did.

DIF: Cognitive Level: Application

REF: p. 17

OBJ: 4

NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Assessment CON: Clinical Judgment | Safety

2. The nurse administers an initial dose of a steroid to a patient with asthma. Thirty minutes after administration, the nurse finds the patient agitated and stating that –everyone is out to get me. Which term is used for this unusual reaction?
- Desired action
  - Adverse effect
  - Idiosyncratic reaction
  - Allergic reaction

ANS: C

Idiosyncratic reactions are unusual, abnormal reactions that occur when a drug is first administered. Patients typically exhibit an overresponsiveness to a medication related to diminished metabolism. These reactions are believed to be related to genetic enzyme deficiencies. Desired actions are expected responses to a medication. Adverse effects are reactions that occur in another system of the body; they are usually predictable. Allergic reactions appear after repeated medication dosages.

DIF: Cognitive Level: Knowledge REF: p. 18 OBJ: 4  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Evaluation  
CON: Patient Education | Clinical Judgment | Caregiving | Safety | Sensory Perception

3. Which is the best description of when drug interactions occur?
- On administration of toxic dosages of a drug
  - On an increase in the pharmacodynamics of bound drugs
  - On the alteration of the effect of one drug by another drug
  - On increase of drug excretion

ANS: C

Drug interactions may be characterized by an increase or decrease in the effectiveness of one or both of the drugs. Toxicity of one drug may or may not affect the metabolism of another one. Drug interactions may result from either increased or decreased pharmacodynamics. Drug interactions may result from either increased or decreased excretion.

DIF: Cognitive Level: Comprehension REF: p. 18 OBJ: 5  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Assessment CON: Safety | Patient Education | Clinical Judgment

4. Which term describes when two drugs compete for the same receptor site, resulting in increased activity of the first drug?
- Desired action
  - Synergistic effect
  - Carcinogenicity
  - Displacement

ANS: D

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The displacement of the first drug from receptor sites by a second drug increases the amount of the first drug because more unbound drug is available. An expected response of a drug is the desired action. A synergistic effect is the effect of two drugs being greater than the effect of each chemical individually or the sum of the individual effects. Carcinogenicity is the ability of a drug to cause cells to mutate and become cancerous.

DIF: Cognitive Level: Knowledge

REF: p. 19

OBJ: 6

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Implementation

CON: Safety | Patient Education

5. What do drug blood levels indicate?

- a. They confirm if the patient is taking a generic form of a drug.
- b. They determine if the patient has sufficient body fat to metabolize the drug.
- c. They verify if the patient is taking someone else's medications.
- d. They determine if the amount of drug in the body is in a therapeutic range.

ANS: D

The amount of drug present may vary over time and the blood level must remain in a therapeutic range in order to obtain the desired result. Generic drugs do not necessarily produce a different drug blood level than proprietary medications. Body fat is not measured by drug blood levels. Drug blood levels only measure the amount of drug in the body; they do not determine the source of the medication.

DIF: Cognitive Level: Comprehension

REF: p. 17

OBJ: 3

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Evaluation

CON: Clinical Judgment | Safety

6. What is the process by which a drug is transported by circulating body fluids to receptor sites?

- a. Osmosis
- b. Distribution
- c. Absorption
- d. Biotransformation

ANS: B

Distribution refers to the ways in which drugs are transported by the circulating body fluids to the sites of action (receptors), metabolism, and excretion. Osmosis is the process of moving solution across a semipermeable membrane to equalize the dilution on each side. Absorption is the process by which a drug is transferred from its site of entry into the body to the circulating fluids for distribution. Biotransformation, also called metabolism, is the process by which the body inactivates drugs.

DIF: Cognitive Level: Knowledge

REF: p. 15

OBJ: 3

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Planning

CON: Patient Education | Clinical Judgment | Safety

7. Which blood level is assessed to determine the amount of circulating medication in a patient?

- a. Peak
- b. Trough
- c. Drug
- d. Therapeutic

ANS: C

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When a drug is circulating in the blood, a blood sample may be drawn and assayed to determine the amount of drug present; this is known as the drug blood level. Peak levels are only those drug blood levels that are at their maximum before metabolism starts to decrease the amount of circulating drug. Trough levels are only those drug blood levels that are at their minimum when metabolism has decreased the amount of circulating drug and before an increase caused by a subsequent dose of the medication. Therapeutic levels are only those within a prescribed range of blood levels determined to bring about effective action of the medication.

DIF: Cognitive Level: Knowledge REF: p. 17 OBJ: 3  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Evaluation CON: Patient Education | Clinical Judgment | Safety

8. The nurse administers 50 mg of a drug at 6:00 AM that has a half-life of 8 hours. What time will it be when 25 mg of the drug has been eliminated from the body?
- 8:00 AM
  - 11:00 AM
  - 2:00 PM
  - 6:00 PM

ANS: C

Fifty percent of the medication, or 25 mg, will be eliminated in 8 hours, or at 2:00 PM. 8:00 AM is 2 hours after administration; the half-life is 8 hours. 11:00 AM is 4 hours after administration; the half-life is 8 hours. 6:00 PM is 12 hours after administration; the half-life is 8 hours.

DIF: Cognitive Level: Analysis REF: p. 16 OBJ: 2  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Evaluation  
CON: Clinical Judgment | Safety | Elimination | Health Promotion

9. What will the nurse need to determine first in order to mix two drugs in the same syringe?
- Absorption rate of the drugs
  - Compatibility of the drugs
  - Drug blood level of each drug
  - Medication adverse effects

ANS: B

Knowledge of absorption is important but not in order to mix drugs. In order to mix two drugs, compatibility is determined so there is no deterioration when the drugs are mixed in the same syringe. Drug level does not indicate if it is acceptable to mix medications in the same syringe. Adverse effects are important for the nurse to know but not in order to mix drugs.

DIF: Cognitive Level: Application REF: p. 19 OBJ: 5  
NAT: NCLEX Client Needs Category: Physiological Integrity  
TOP: Nursing Process Step: Implementation CON: Clinical Judgment | Safety

10. A patient developed hives and itching after receiving a drug for the first time. Which instruction by the nurse is accurate?
- Stop the medication and encourage the patient to wear a medical alert bracelet that explains the allergy.

- b. Explain to the patient that these are signs and symptoms of an anaphylactic reaction.
- c. Emphasize to the patient the importance to inform medical personnel that in the future a lower dosage of this drug is necessary.
- d. Instruct the patient that it would be safe to take the drug again because this instance was a mild reaction.

ANS: A

This initial allergic reaction is mild, and the patient is more likely to have an anaphylactic reaction at the next exposure; a medical alert bracelet is necessary to explain the reaction. Signs and symptoms of an anaphylactic reaction are respiratory distress and cardiovascular collapse. A more severe reaction will occur at the next exposure, and the patient should not receive the drug again.

DIF: Cognitive Level: Application

REF: p. 18

OBJ: 4

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Implementation

CON: Patient Education | Clinical Judgment | Safety

11. Which assessment data would the nurse identify as having the most effect on drug metabolism?
- a. History of liver disease
  - b. Intake of a vegetarian diet
  - c. Sedentary lifestyle
  - d. Teacher as an occupation

ANS: A

Liver enzyme systems are the primary site for metabolism of drugs. Intake of a vegetarian diet may affect absorption but not metabolism. Sedentary lifestyle and occupations could affect metabolism (exposure to environmental pollutants), but these do not have the most significant effect on metabolism.

DIF: Cognitive Level: Comprehension

REF: p. 15

OBJ: 3

NAT: NCLEX Client Needs Category: Physiological Integrity

TOP: Nursing Process Step: Assessment

CON: Patient Education | Clinical Judgment | Safety

12. A physician's order indicates to administer a medication to the patient via the percutaneous route. Which route will the nurse anticipate the patient will receive this medication?
- a. Intramuscularly
  - b. Subcutaneously
  - c. Topically
  - d. Rectally

ANS: C

The percutaneous route refers to drugs that are absorbed through the skin and mucous membranes. Methods of the percutaneous route include inhalation, sublingual (under the tongue), or topical (on the skin) administration. The parenteral route bypasses the gastrointestinal (GI) tract by using subcutaneous (subcut), intramuscular (IM), or intravenous (IV) injection. The parenteral route bypasses the GI tract by using subcut, IM, or IV injection. In the enteral route, the drug is administered directly into the GI tract by the oral, rectal, or nasogastric route.