

Medicine in the Body

VIEWING

Watch the video “*How Your Body Processes Medicine*.” Then, complete the assignments that follow.

Task 1. Sequence the events (1–6)

(Write 1–6 in the boxes.)

- [] The Ibuprofen tablet begins to disintegrate in the stomach’s acidic environment.
- [] Remaining active molecules circulate through the body and reach pain-affected tissues.
- [] The dissolved drug crosses the intestinal wall and enters nearby blood vessels.
- [] The person swallows an Ibuprofen tablet for a sore ankle.
- [] Blood carrying the drug passes through the liver, where enzymes react with part of it.
- [] The neutralized or inactive fraction is excreted by the kidneys in the urine.

Task 2. Multiple-choice comprehension

1. The central purpose of the video is to explain
 - A. why all drugs act in identical ways.
 - B. how a swallowed medicine is distributed, metabolized, and eliminated by the body.
 - C. how Ibuprofen is chemically manufactured.
 - D. why painkillers immediately remove pain upon contact with the stomach.
2. Once the tablet reaches the stomach, the first key process is
 - A. absorption through the tongue.
 - B. filtration through the kidneys.
 - C. disintegration and dissolution in acidic gastric fluid.
 - D. enzymatic neutralization by the liver.
3. Absorption primarily occurs when
 - A. bile acids trap the medicine in the liver.
 - B. the tablet remains intact in the stomach.
 - C. enzymes destroy the drug before circulation.
 - D. the dissolved drug diffuses through the intestinal wall into blood vessels.

4. During the liver's first-pass metabolism,

- A.** the drug is converted into stomach acid.
- B.** the organ stores the medicine for future release.
- C.** no chemical changes occur.
- D.** enzymes attempt to modify or neutralize part of the drug.

5. Molecules that have been chemically altered and lost therapeutic activity are known as

- A.** hormones.
- B.** metabolites.
- C.** antibodies.
- D.** catalysts.

6. Roughly thirty minutes after ingestion,

- A.** all active molecules have been expelled.
- B.** part of the dose has already entered the systemic bloodstream.
- C.** the liver ceases to function.
- D.** pain receptors are fully restored.

7. Ibuprofen relieves pain because it

- A.** produces new pain-receptor proteins.
- B.** increases neural activity in inflamed tissues.
- C.** suppresses circulation in the affected limb.
- D.** blocks the synthesis of compounds involved in transmitting pain signals.

8. According to the text, the half-life of Ibuprofen means that

- A.** the drug's concentration in the blood decreases by half every two hours.
- B.** the medicine becomes twice as strong over time.
- C.** the kidneys stop filtering after two hours.
- D.** half the drug remains permanently stored in the body.

9. After detaching from their targets, Ibuprofen molecules

- A.** transform into nutrients.
- B.** re-enter circulation and are processed again by the liver before excretion.
- C.** evaporate through the skin.
- D.** remain bound to receptors indefinitely.

10. The repeated passage of blood from liver to body to kidneys occurs

- A.** about once per minute.
- B.** unpredictably.
- C.** once per hour.
- D.** every half-day.

11. The video states that these pharmacokinetic steps are

- A.** relevant only to intravenous therapy.
- B.** determined solely by stomach acidity.
- C.** generally the same for all orally administered drugs.
- D.** unique to painkillers only.

12. Variations in absorption and elimination depend on

- A.** whether the user is right- or left-handed.
- B.** the color or flavor of the pill.
- C.** temperature and packaging.
- D.** the drug itself, the individual person, and the route of administration.

13. Dosage precision is critical because

- A.** timing has no clinical relevance.
- B.** an insufficient dose may fail therapeutically, while an excessive one can be toxic.
- C.** overdosing always increases drug effectiveness.
- D.** toxicity never depends on concentration.

14. The group for whom accurate dosing is most challenging consists of

- A.** elderly adults with stable liver function.
- B.** athletes, due to higher blood oxygen.
- C.** children, since their enzyme levels and metabolism fluctuate rapidly.
- D.** patients with perfect genetic balance.

15. Future personalized medicine may rely on

- A.** replacing pharmacists with computers.
- B.** routine DNA testing to determine an individual's optimal drug dose.
- C.** complete elimination of medical supervision.
- D.** universal tablets identical for everyone.