A11 · Growth and metabolism: hGH, thyroxine and blood calcium · Worked examples and practice

Name: _____ Date: _____

Worked examples

Read these first. There is one for each kind of question in this lesson.

Example 1 · Predict hormone levels when a loop breaks

The thyroid gland of a patient makes almost no thyroxine. Predict the level of TSH.

1. Step 1: hypothalamus, pituitary gland (TSH), thyroid gland (thyroxine).
2. Step 2: the thyroid gland has failed.
3. Step 3: thyroxine comes after the break, so it is low.
4. Step 4: nothing inhibits the pituitary gland, so TSH rises.

Answer: TSH is high.

Example 2 · Choose between two antagonistic hormones

Blood calcium is too low. Which hormone is released, and from where?

1. The hormone that raises blood calcium is PTH.
2. PTH comes from the parathyroid glands.

Answer: PTH, from the parathyroid glands.

Practice

Questions 1 to 4 are easy. Questions 5 to 8 are medium. Questions 9 and 10 are harder.

EASY

1. State what the letters hGH stand for.

EASY

2. Name the gland that releases thyroxine.

EASY

3. Name the element the thyroid gland needs to make thyroxine.

EASY

4. Name the hormone that lowers blood calcium.

MEDIUM

5. State what thyroxine does to the metabolic rate. Say what happens to body temperature.

MEDIUM

6. Explain the difference between gigantism and dwarfism.

MEDIUM

7. State what TSH does, and name the gland that releases it.

MEDIUM

8. Explain what "antagonistic hormones" means. Give one pair.

HARDER

9. A person takes too many thyroxine pills. Use the loop to predict the level of TSH. Explain.

HARDER

10. A person eats no calcium for a week, yet blood calcium stays normal. Explain how, and name one cost to the body.