

HORMONAL CONTROL AND COORDINATION



PRIOR LEARNING QUIZ

| NUMBER | STATEMENT | TRUE OR FALSE |
|--------|--|---------------|
| 1. | Blood circulates through the body to carry oxygen to different organs. | |
| 2. | Glands are part of the digestive system only. | |
| 3. | The body needs energy from food to function properly. | |
| 4. | Sweating helps cool the body down when it gets too hot. | |
| 5. | Breathing is controlled by muscles and the lungs. | |

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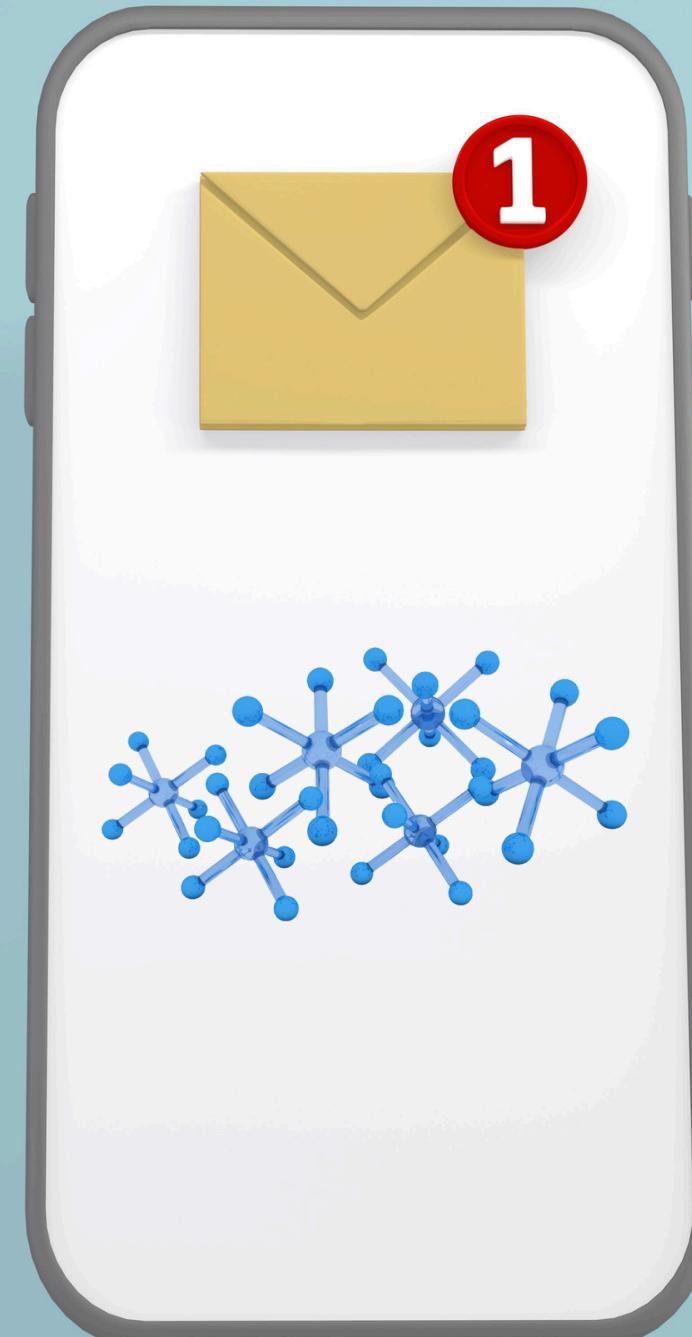
OBJECTIVES

- Understand how hormones control body functions.
- Learn the main glands involved in hormone production.
- Explore how the body uses feedback systems to maintain balance.



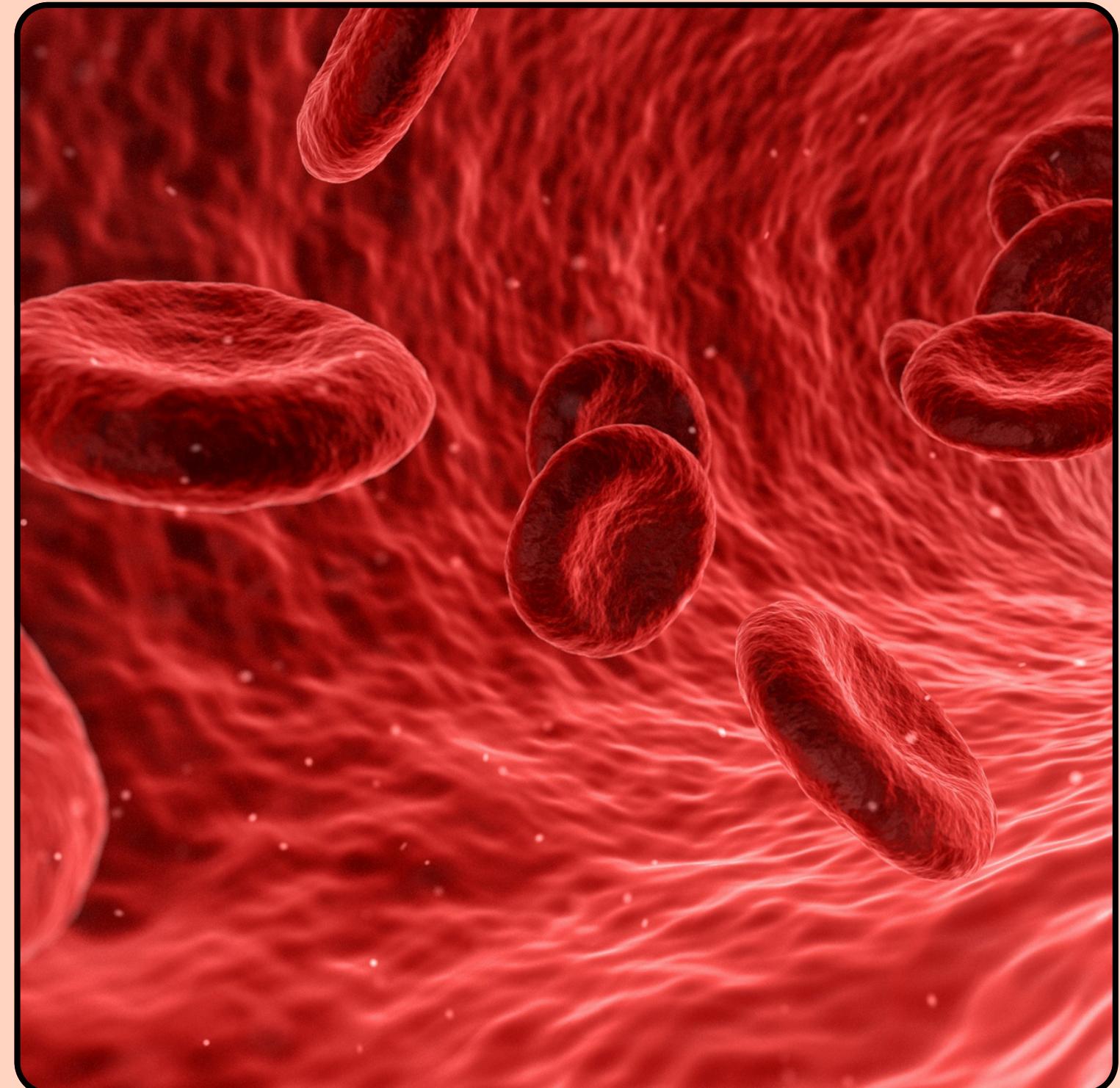
INTRODUCTION

- The **endocrine system** is a network of **glands** that produce and release hormones.
- Hormones are chemical messengers that travel through the bloodstream to organs and tissues, telling them how to function.
- Understanding the endocrine system helps us see how the body stays balanced and responds to changes.



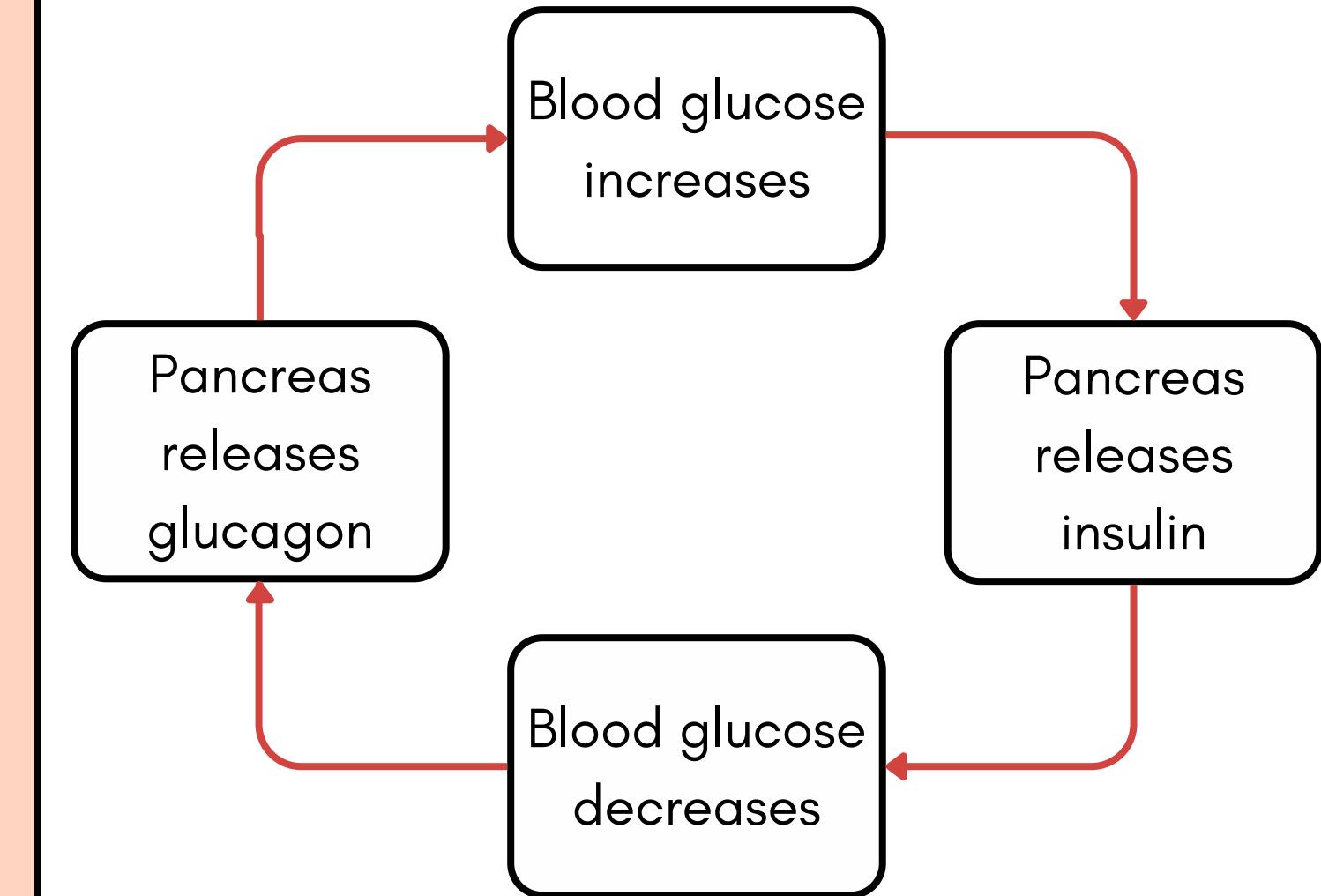
WHAT ARE GLANDS?

- Glands are special organs in the body that produce and release substances, such as hormones.
- Glands in the endocrine system release hormones directly into the bloodstream, allowing them to travel to the organs that need them.
- Major glands in the body include the pituitary gland, thyroid, adrenal glands, and pancreas.



NEGATIVE FEEDBACK IN HORMONAL CONTROL

- The body uses feedback systems to keep hormone levels balanced.
- For example, when blood sugar gets too high, the **pancreas** releases **insulin** to lower it.
- When blood sugar gets too low, the pancreas releases **glucagon**, which tells the liver to release stored sugar, raising blood sugar levels.



Once balance is restored, insulin or glucagon production slows down.

THE THYROID GLAND

- The thyroid gland produces hormones like **thyroxine**, which control how fast your body uses energy (metabolism).
- If the thyroid produces too much hormone (hyperthyroidism), you may feel anxious and lose weight quickly.
- If it produces too little (hypothyroidism), you may feel tired and gain weight.



THE ADRENAL GLANDS AND STRESS

- The adrenal glands release hormones like **adrenaline** and **cortisol** in response to stress.
- These hormones prepare the body for a “fight or flight” reaction by increasing heart rate, boosting energy, and making you more alert.
- Cortisol also helps the body manage long-term stress by controlling blood sugar levels and reducing inflammation.



GLOSSARY

- **Adrenal Glands:** Glands above the kidneys that produce hormones to manage stress.
- **Endocrine System:** A network of glands that produce hormones to control certain body functions.
- **Feedback System:** A process where the body maintains balance by adjusting hormone levels.
- **Glucagon:** A hormone released by the pancreas that raises blood sugar levels when they are too low.
- **Glands:** Special organs that produce and release substances like hormones.
- **Hormones:** Chemical messengers produced by glands that regulate body functions.
- **Insulin:** A hormone produced by the pancreas that lowers blood sugar by helping cells absorb sugar.
- **Pancreas:** A gland that controls blood sugar by releasing insulin and glucagon.
- **Thyroid Gland:** A gland in the neck that produces hormones controlling metabolism.

LESSON REFLECTION...I CAN...

- Understand how hormones control body functions.
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