

HORMONAL CONTROL AND COORDINATION



PRIOR LEARNING QUIZ

NUMBER	STATEMENT	TRUE OR FALSE
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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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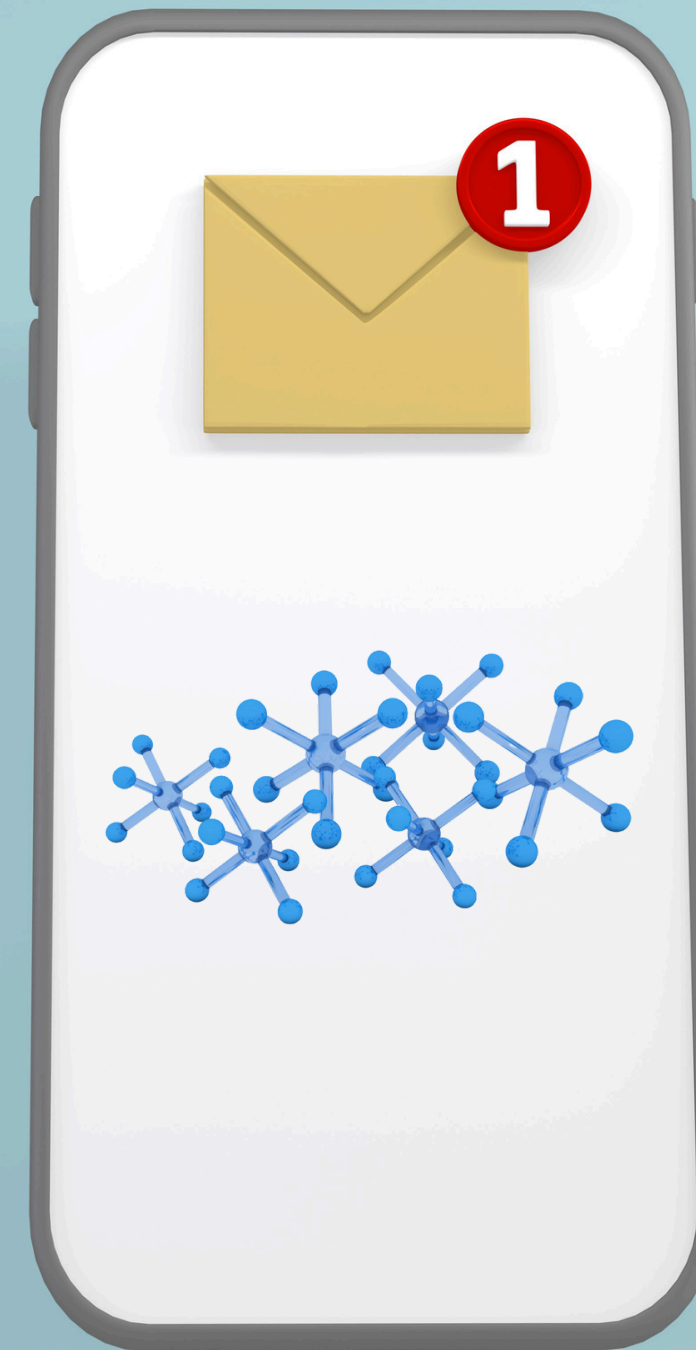
OBJECTIVES

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



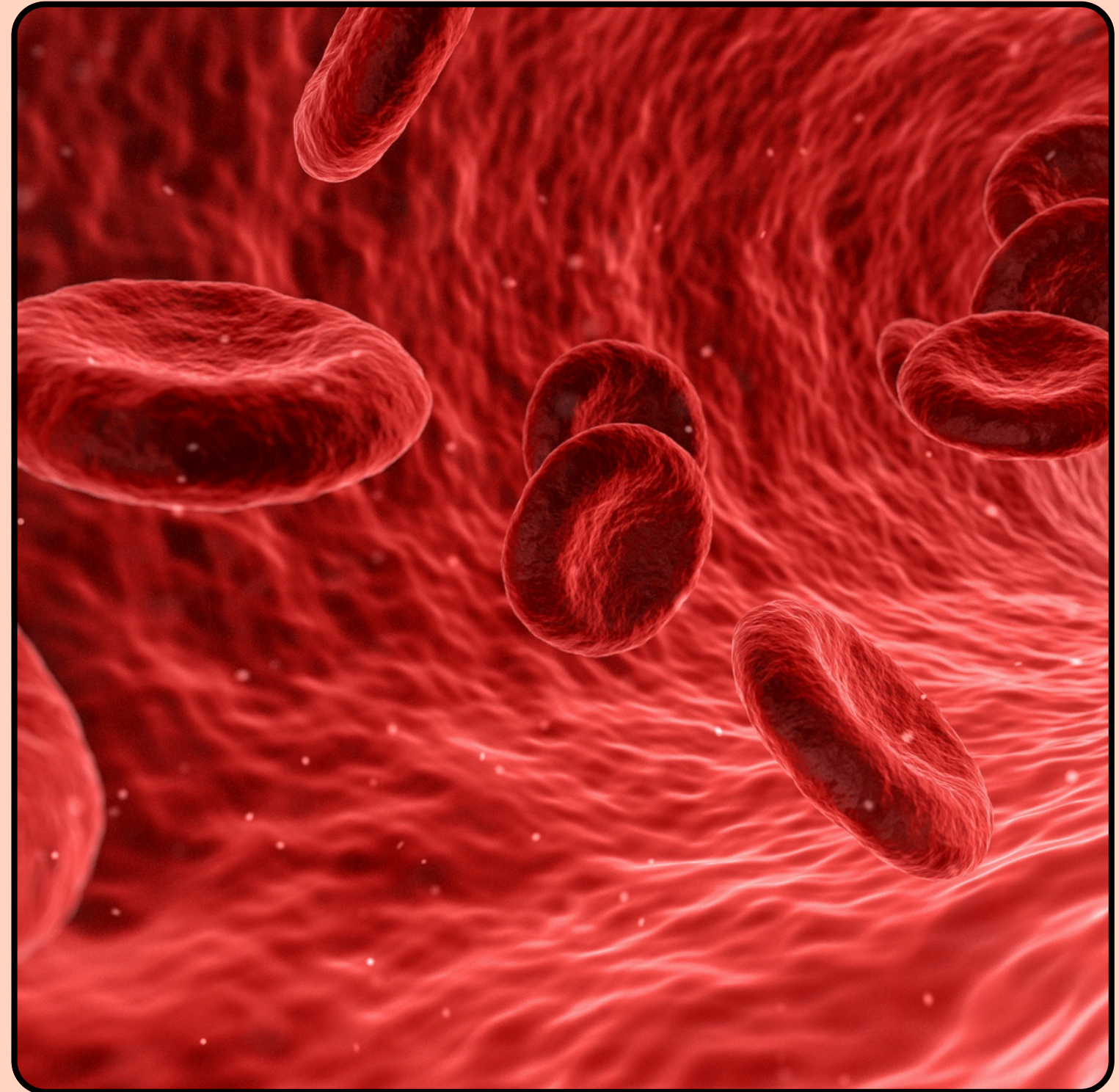
INTRODUCTION

- 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.



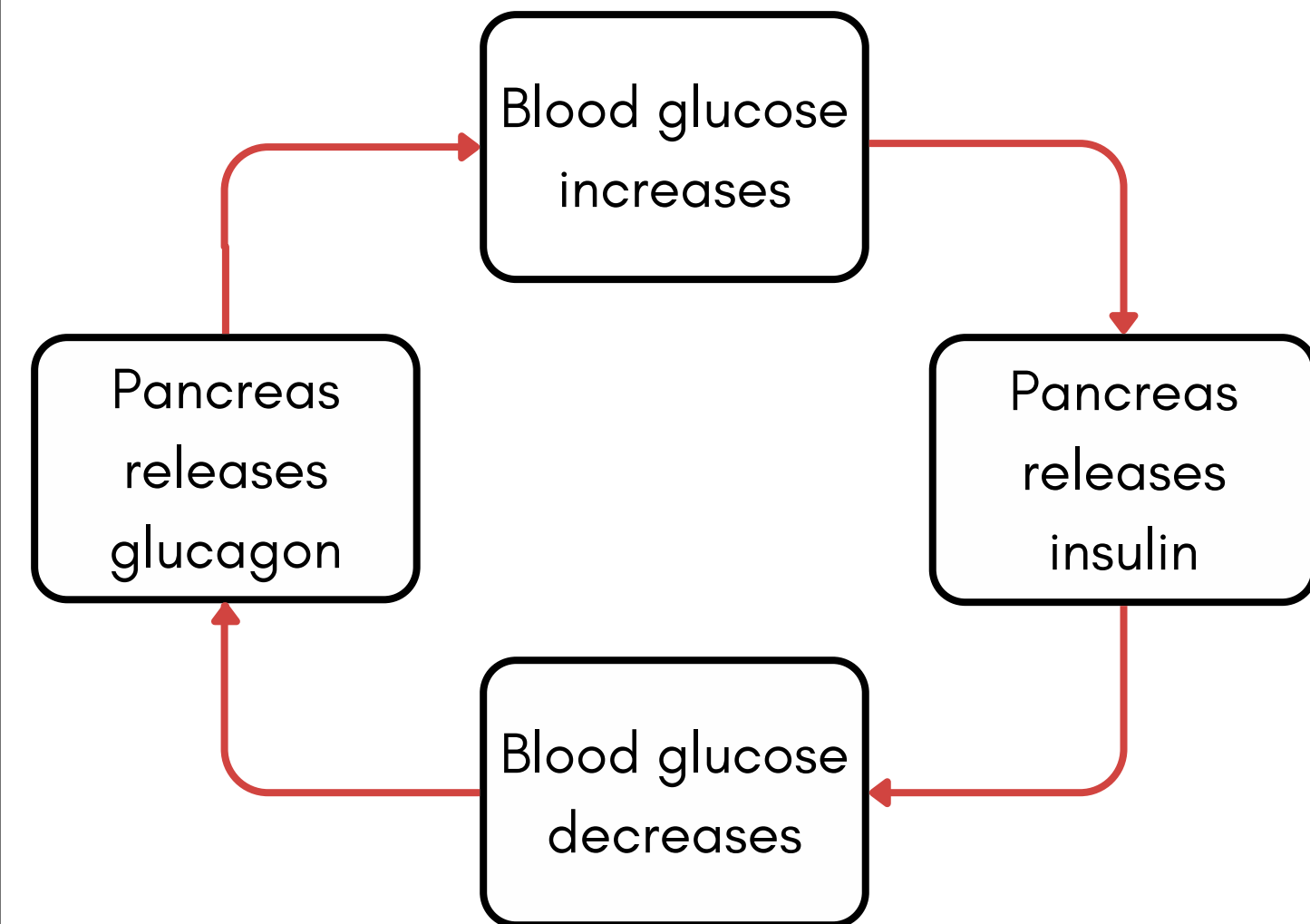
WHAT ARE GLANDS?

- 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...

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