# Endocrine System

# What is the Endocrine System?

The endocrine system releases chemical messengers called hormones into the blood to act on distant target cells - Hormones only act on the cells with a

### specific receptor

The endocrine system works at the same time with the nervous system to maintain balance - Hormones initiate slower responses (proger

- Hormones inicio durations)

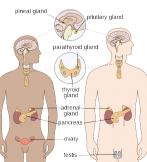
# Nervous System vs Endocrine System

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| Comparison                       | Nervous system   | Endocrine system  |
|----------------------------------|--|---|
| Speed of the action              | Very rapid   | Can be slow   |
| Nature of the message            | Electrical impulses,<br>travelling along nerves                      | Chemical messages,<br>travelling in the<br>bloodstream        |
| Duration of the response         | Usually completed<br>within seconds                                  | May take years before<br>completed                            |
| Area of response                 | Often confined to one<br>area of the body -<br>response is localised | Usually noticed in many<br>organs - response is<br>widespread |
| Examples of processes controlled | Reflexes such as<br>blinking; movement of<br>the limbs               | Growth; development of reproductive system                    |

# The endocrine system contains 9 major glands ¢ organs that produce, store ¢ secrete hormones

I Hypothalamus Maintains the body's balance & regulates body temperature, heart rate and blood pressure



2 Pituitary Gland Exitatory Composed of 2 lobes the anterior which secretes hormones involved in the body's growth & development, and the posterior, which secretes hormones that incres (2) the reabsorphon of wold for the Kidneys altimate bormones that control atter plaines 3 Pince Gran

It Checkes a hormone called melatonin

that causes you to feel sleepy

## 4 Thyroid

Produces hormones that regulate the body's metabolism (how the body uses energy) 4 Parathyroid glands Regulate the absorption of calcium

### 5 Thymus

Controls the production of white blood cells \$ plays a role in the body's ability to fight diseases

# 6 Adrenal Gland Control metabolism, blood pressure,

sexual development and response to stress

### Pancreas

It makes a hormone called insulin that controls the level of sugar in the blood