

2.5 How does the human endocrine system work?

Lesson outcomes

At the end of this activity students will be able to:

- research and present to the class the role of a gland in the endocrine system
- describe and explain the functions of the endocrine system.

What ideas might your students already have?

Students may only be aware of hormones in relation to puberty.

Key vocabulary:

adrenal glands, endocrine gland, exoskeleton, fight-flight response, gland, hormone, hypothalamus, moulting, ovaries, pancreas, parathyroid gland, pineal gland, pituitary gland, spleen, target organ, testes, thymus, thyroid gland.

Equipment list:

The CLASS will require:

- **Activity sheet 2.5 The Walk** (in *Teacher Guide*)

Each GROUP will require:

- labelled picture showing their gland from **Activity sheet 2.5 Endocrine glands** (in *Teacher Guide*)
- butcher paper and markers

Each STUDENT will require:

- **e-Notebook**
- internet access

Things to consider:

- Consider running this activity over two lessons; one to research and prepare and another for presentations and discussions.
- Not all endocrine glands need to be researched. Suggested glands include: the pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, testes and ovaries.
- The digital activity *Body parts: endocrine system* is housed in Scootle. You (as educator) will need to register on Scootle (<https://www.scootle.edu.au/ec/p/home>) in order to access this resource for your students. Once registered you can search for it using its ID code (L720) and add the resource to your own learning path. Click on the 'Add to' button, and choose 'Create new learning path'. Click on 'Learning paths' at the top of the page, open your learning path and copy the six letter PIN number that you can share with your students. Your students need to go to the Scootle home page (<https://www.scootle.edu.au/ec/p/home>), click on 'Student login' at the top of the page and enter the PIN number.

- Students should make use of visual and physical props in their presentations. A life-size human cut out from butcher paper or a drawn outline on the whiteboard presents a reference for students to show where the gland is located. Functions of hormones can be described and/or physically drawn on the body. Students may use the printed image of their gland (**Activity sheet 2.5 Endocrine glands**) during their presentation.
- This activity provides an opportunity for students to practise the cooperative group and communication skills required to succeed in the optional **formative assessment** task in **Activity 2.7 Which is the most important human body system?**

Lesson plan

Step 1: Begin the activity by reading the story in **Activity sheet 2.5 The Walk**. Use this stimulus to begin a class discussion about how bodies respond to potential danger as a result of adrenalin production.

Suggested question/s:

- Can you describe all the changes that just occurred in your body?
- Do you know the hormone involved in causing this reaction?
- Why do you think these reactions happen?

Step 2: Complete a class **brainstorm** of all hormones known to students. Ask students to identify the functions of any of these hormones.

Step 3: Refer students to **Activity 2.5** in the *Student Guide*. Discuss the endocrine system's main functions.

Step 4: Step students through the instructions for the activity and the components of the presentation. Organise students into groups and allocate glands. Allow students time to research and prepare for their presentations. Refer students to the digital resources. Ensure each student in the group has a role in the research and presentation process.

Step 5: Facilitate each group's presentation. Ask clarifying questions when findings are presented. Prompt watching students to:

- complete the table from the *Student Guide* on the action of hormones produced by each gland in the body.
- draw and label the location of each endocrine gland on a body sketched in their **Notebooks**.

Step 6: Conclude with a class discussion about the answers to the discussion questions.

Follow up:

See the *Find out more* section in **Activity 2.5** about the hormone-activated process of moulting in insects.