C3.1 Integration of body systems

Checklist

What you should know

After studying this subtopic you should be able to:

- Describe the importance of integration of body systems.
- Explain the hierarchy of biological organisation.
- Compare the roles of the nervous system and endocrine system in signalling.
- Describe the roles of the brain and spinal cord in processing information.
- Compare the roles of sensory and motor neurons.
- Examine a transverse section of a myelinated nerve.
- Describe the structure of a pain reflex arc.
- Explain the role of the cerebellum in coordination and balance.
- Explain the impact of melatonin on circadian rhythms.
- Analyse the effects of epinephrine on the body.
- Describe the feedback mechanisms that regulate the functioning of the endocrine system.
- State the role of baroreceptors and chemoreceptors in the feedback control of the heart rate.
- Describe the role of chemoreceptors in controlling the rate of ventilation.
- Outline the mechanism for peristaltic control by the CNS and ENS.

Higher level (HL)

- Observe tropic responses in seedlings.
- Describe positive phototropism.
- Outline the functions of the different types of phytohormones.
- Explain the movement and concentration of auxins within plant cells.
- Describe the role of auxins in cell growth.
- Study the regulation of root and shoot growth by the interaction between cytokinins and auxins.

- Explain the positive feedback mechanism in the production of ethylene by ripening fruit.

Practical skills

Once you have completed this subtopic, go to Practical 8: Using seedlings to investigate tropic responses in plants (https://app.kognity.com/study/app/bio/sid-422-cid-755105/book/using-seedlings-to-investigate-id-46707/).