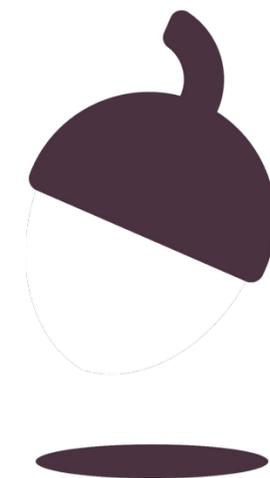


Combined Science HT - KS4  
Homeostasis and Response

# Negative Feedback - Higher

Miss Ray



**OAK**  
NATIONAL  
ACADEMY

# Exam style questions

1. Which gland releases adrenaline? [1]
2. State 2 effects of adrenaline on the body. [2]
3. Explain why adrenaline cannot be classed as being controlled by negative feedback. [2]



# Exam style questions

1. Which gland releases adrenaline? [1]

**Adrenal gland**

2. State 2 effects of adrenaline on the body. [2]

- **Increased heart rate and breathing rate**
- **Convert glycogen to glucose**
- **Diverts blood from other organ systems**
- **Increase delivery of oxygen and glucose to brain and muscles**

3. Explain why adrenaline cannot be classed as being controlled by negative feedback. [2]

- **No counteracting hormone**
- **Filtered out of the blood to restore resting levels**



# Exam style questions

Describe the changes that take place inside the body while waiting for an exam to begin. [4]

## Hints

- **How would you be feeling?**
- **What hormone causes this feeling?**
- **What gland releases this hormone?**
- **What impact does this hormone have on the body?**



# Exam style questions

Describe the changes that take place inside the body while waiting for an exam to begin. [4]

**When waiting for an exam, the adrenal gland releases the hormone adrenaline. This causes an increased breathing and heart rate. It also diverts blood containing glucose and oxygen away from the digestive system and towards the muscles for respiration.**



# Exam style question

1. Name the gland that releases thyroxine. [1]
2. State two processes that thyroxine is involved with in the body. [1]
3. Explain how a negative feedback mechanism could return a low thyroxine level to normal. [4]

**Low thyroxine levels in the bloodstream is detected by the \_\_\_\_\_.**  
**This stimulates the \_\_\_\_\_ gland to release more \_\_\_\_\_. When**  
**thyroxine levels return to normal, the corrective mechanism is switched off.**



# Exam style question

1. Name the gland that releases thyroxine. [1]

**Thyroid gland**

2. State two processes that thyroxine is involved with in the body. [1]

**Metabolic rate, growth and development, slow energy release**

3. Explain how a negative feedback mechanism could return a low thyroxine level to normal. [4]

**Low thyroxine levels in the bloodstream is detected by the brain. This stimulates the thyroid gland to release more thyroxine. When thyroxine levels return to normal, the corrective mechanism is switched off.**



# Exam style questions

Explain how a negative feedback system works. [6]

Conditions in the body change from a set point



Change detected by a receptor



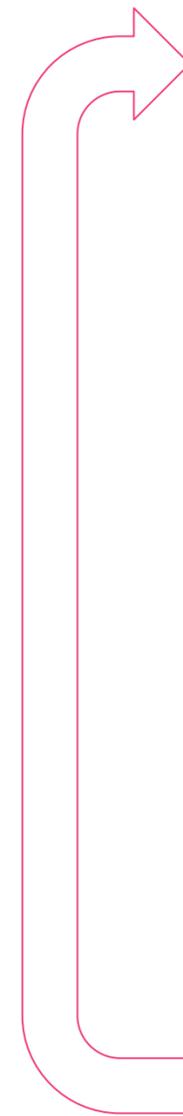
Corrective mechanisms activated



Conditions return to set point



Corrective mechanism switched off



# Exam style questions

Explain how a negative feedback system works. [6]

- 1. A condition in the body e.g. thyroxine level moves away from the normal level.**
- 2. This is detected by a receptor.**
- 3. Corrective mechanisms are activated.**
- 4. Which returns the conditions back to their normal level.**
- 5. The corrective mechanisms is switched off.**

Conditions in the body change from a set point



Change detected by a receptor



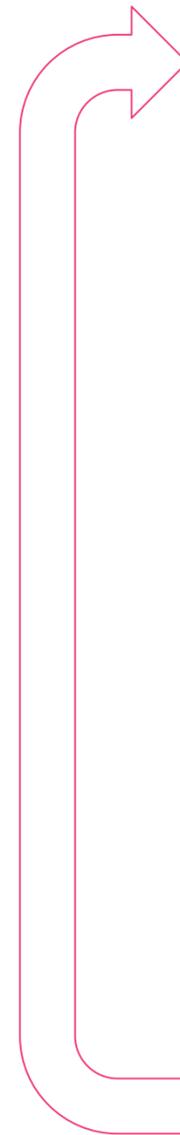
Corrective mechanisms activated



Conditions return to set point



Corrective mechanism switched off



# Exam style questions

Insulin is a hormone. It is secreted by the pancreas when receptors detect an increase in blood glucose level. Describe this negative feedback loop. [6]

Conditions in the body change from a set point



Change detected by a receptor



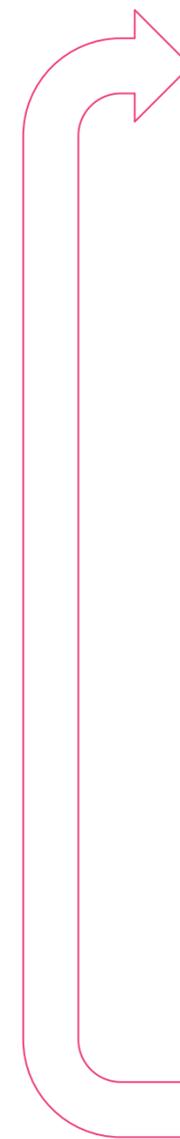
Corrective mechanisms activated



Conditions return to set point



Corrective mechanism switched off



# Exam style questions

Insulin is a hormone. It is secreted by the pancreas when receptors detect an increase in blood glucose level. Describe this negative feedback loop. [6]

- 1. Blood glucose levels increase.**
- 2. This is detected by a receptor.**
- 3. The pancreas releases insulin into the blood.**
- 4. Which returns the blood glucose levels back to normal.**
- 5. The pancreas stops secreting insulin.**

Conditions in the body change from a set point



Change detected by a receptor



Corrective mechanisms activated



Conditions return to set point



Corrective mechanism switched off

