

0	1
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Adrenalin is a hormone with numerous effects. Some of these are listed below. For each one listed, suggest a reason for this effect during adrenalin's 'fight or flight' response: **[3 marks]**

0	1	.	1
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Increased heart rate **More oxygen/more glucose pumped to muscles/cells [1]**

Increased breathing rate **more oxygen into the blood/more carbon dioxide removed/exhaled /more respiration gases exchanged [1]**

WARNING : The word 'more' must be used at least once in this answer, otherwise you imply that oxygen and glucose normally do not move around the body

Pupil dilation (widening) **more light in (for sharper vision) [1]**

0	1	.	2
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Why is it important that adrenalin does not use a negative feedback loop? **[2 marks]**

once the danger/stress is over, normality is reestablished [1] reduces the body's energy consumption (the body uses a lot of energy during the "fight or flight" response. [1]

0	1	.	3
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State the gland that adrenalin is released from **[1 mark]**

adrenal [1]

0	1	.	4
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Thyroxine is a hormone that maintains your basal metabolic rate; the rate at which substances are broken down and built up in the body. Describe how this hormone works as part of a negative feedback loop. **[5 marks]**

low levels of thyroxine detected by pituitary gland/brain/receptors/coordination centre [1]

thyroid stimulating hormone is released (by pituitary gland) [1]

this causes thyroid gland to release thyroxine [1]

as thyroxine levels rise the brain detects this change and reduces the TSH production [1]

this fluctuation about the norm is called a negative feedback loop [1]

