



Glucose control

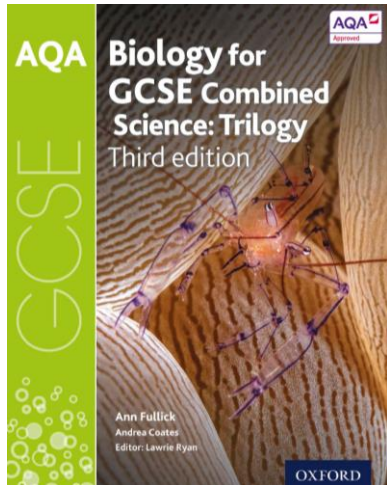
I can...	
Describe Homeostasis as the mechanisms involved in keeping internal conditions of the body constant. 'same state'	
Explain the importance of homeostatic mechanisms to allow metabolic reactions to proceed at appropriate rates (optimal conditions for enzymes temp and pH, as well as a constant supply of dissolved food and water.) For our cells to function properly the environment that surrounds them needs to be controlled at an optimum level. (37°C, Isotonic for Water and Sugar concentration and toxic substances need to be removed.)	
Recognise that these automatic control systems may involve nervous responses or chemical responses.	
Explain why the concentration of glucose in the blood needs to be controlled to ensure there is enough for efficient respiration, but not too much as to negatively affect cells (osmosis)	
Describe how glucose levels rise after eating and fall during exercise.	
Describe how blood glucose concentration of the body is monitored and controlled by the PANCREAS. The pancreas is a gland that produces and secretes two hormones INSULIN and GLUCAGON.	
Identify the control of blood glucose as negative feedback mechanism (change is detected and corrected back to normal levels)	
Describe what happens when glucose levels are high; <ul style="list-style-type: none"> • Insulin is secreted. • Insulin targets cells in the LIVER and muscles causing glucose to be absorbed from the blood and converted to insoluble GLYCOGEN for storage. • Blood glucose concentration is lowered. 	
Describe what happens when glucose levels are low; <ul style="list-style-type: none"> • Glucagon is secreted. • Glucagon targets cells in the LIVER and muscles causing glycogen to be converted back into GLUCOSE and released from cells. • Blood glucose concentration is increased. 	
Describe Diabetes as a disease where a person is unable to control their blood glucose concentration effectively.	
Compare the two main types of diabetes: <ul style="list-style-type: none"> • Type 1 is where insulin is not made or not made correctly by the pancreas (people are usually born with Type 1, or develop it following a virus) • Type 2 is where insulin is made but either not enough or the body becomes insensitive to it (this form is associated with obesity and the elderly) 	
Explain how Diabetes may be controlled by careful attention to diet and exercise. Type 1 diabetics may also be treated by injecting insulin.	

- 4.5.3.2 Control of blood glucose concentration

Additional support:



Access the digital textbook by logging on to www.kerboodle.com (*you have your own login details...ask any science teacher if you are unsure*). Read the relevant pages (see below).



Combined science GCSE textbook
Homeostasis and Glucose Control
pages 144-147

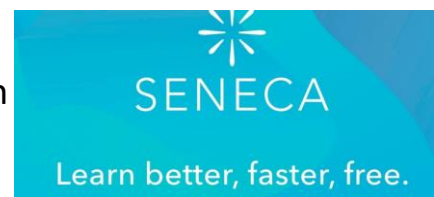
Write your own summary notes (bullet points of the key ideas /keywords list with definitions/ annotated diagrams/ mind-maps or flash cards) to go over the main content of the topic.

Attempt the textbook summary questions.



www.BBCbitesize.com has some great AQA GCSE revision resources too.

www.Senecalearning.com is a free online revision platform that is great for reviewing content too.



www.physicsandmathstutor.com has lots of practice exam style questions and mark schemes, grouped by topic, that you should try once you have revised the content.

Extension work/extra challenge:

Ask your teacher for extension task...

Pack 2 Topic 5- Sweet Dreams Monotremes- Platypus Venom and Diabetes