Unit 2b Key Area 8

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| **Pancreatic receptor cells detect** | an increase or decrease in blood glucose concentration |
| **Pancreatic receptors respond to high blood glucose levels by** | secreting the hormone insulin |
| **Insulin activates an enzyme in the liver to** | convert glucose into glycogen which reduces blood glucose levels |
| **The liver stores glucose as** | an insoluble storage carbohydrate called glycogen. |
| **Pancreatic receptors respond to low blood glucose levels by** | secreting the hormone glucagon |
| **Glucagon actives an enzyme in the liver to** | convert glycogen to glucose which increases blood glucose levels |
| **During “fight or flight” responses** | homeostatic mechanisms are over-ridden and glucose levels are raised by epinephrine, produced by the adrenal glands |
| **Epinephrine stimulates** | glucagon secretion and inhibits insulin secretion |
| **Diabetics are** | unable to control their blood glucose levels which can rise to 10-30 mmol/l compared to normal levels of around 5mmol/l |
| **Type 1 Diabetes** | The pancreas of sufferers cannot produce insulin and can be treated by insulin and a careful diet |
| **Type 2 Diabetes** | The pancreas of sufferers can produce insulin but they have a decreased number of insulin receptors in the liver |
| **Obesity is characterised by** | excess body fat in relation to lean body tissue (muscle) and a BMI>30 |
| **Body Mass Index (BMI)** | is calculated as weight (kg)/height squared (m²) |
| **A disadvantage of BMI calculation** | does not take into account muscle mass so some people are wrongly classified using this method |
| **Accurate measurement of obesity measures** | body fat content using methods such as densitometry, skin-fold thickness and bio-electrical impedance |
| **Treatment of obesity involves** | reducing energy intake and increasing energy expenditure |
| **Exercise can help reduce risk factors of CVD by** | keeping weight under control, minimising stress, reducing hypertension and improving HDL blood lipid profiles |