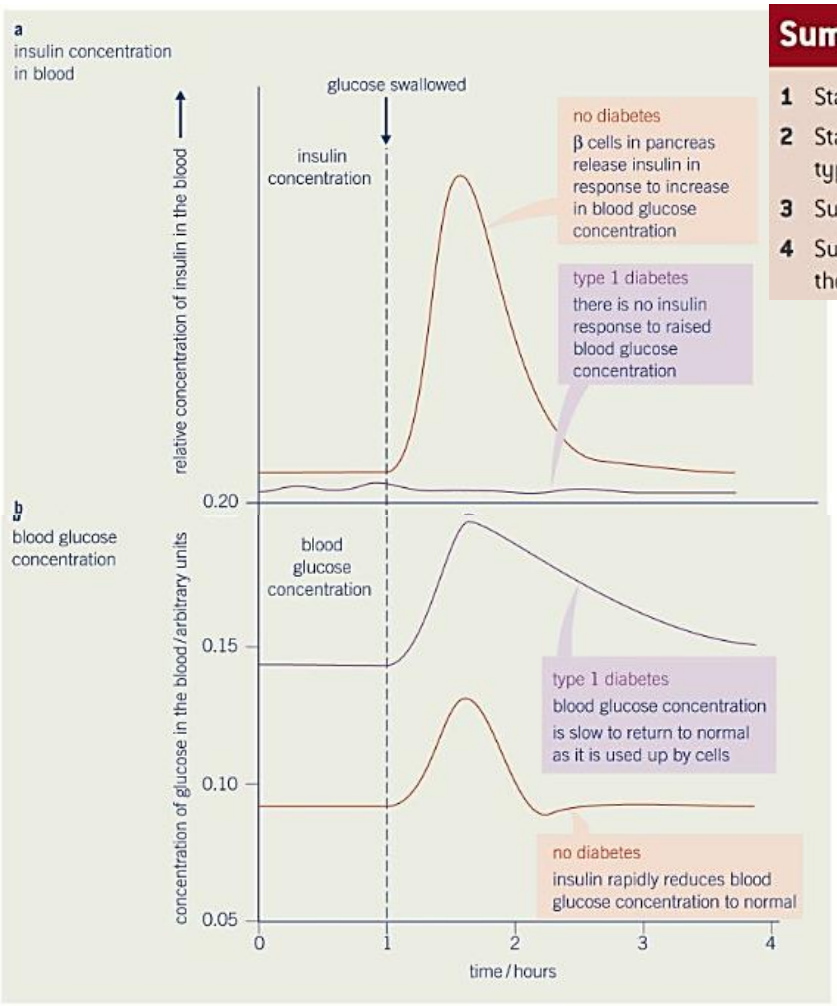
Diabetes and its control

What is diabetes?

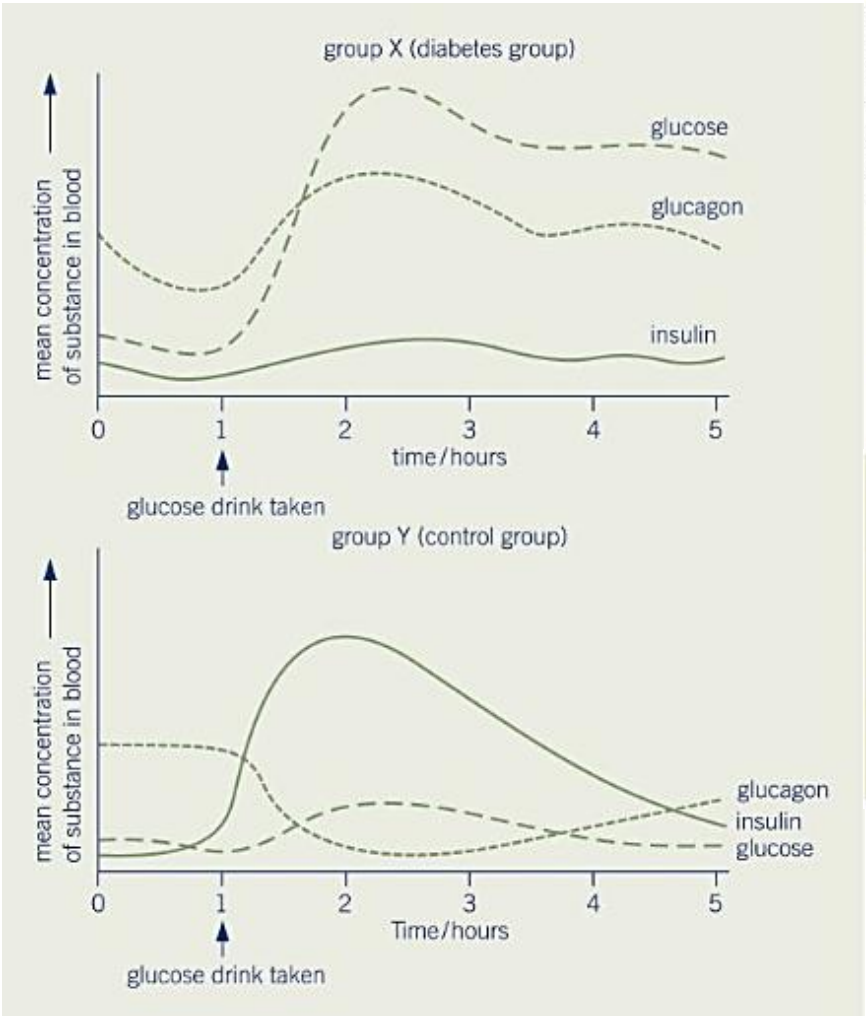
Type (Include description of how it is caused)	Symptoms	How it is controlled
Type I (insulin dependent)		
Type II (insulin independent)		



▲ **Figure 2** *Comparison of blood glucose and insulin concentrations in a person with type I diabetes and a person without diabetes after each has swallowed a glucose solution*

Summary questions

1. State **one** difference between the causes of type I and type II diabetes.
2. State **one** difference between the main ways of controlling type I and type II diabetes.
3. Suggest an explanation for why tiredness is a symptom of diabetes.
4. Suggest what lifestyle advice you might give someone in order to help them avoid developing type II diabetes.



Effects of diabetes on substance concen

An experiment was carried out with two groups of people. Group X had type 1 diabetes while group Y did not (control group). Every 15 minutes blood samples were taken from all members of both groups and the mean concentrations of insulin, glucagon and glucose were determined. After an hour, each person was given a glucose drink. The results are shown in the graphs below.

1. Name a hormone other than insulin and glucagon that is involved in regulating blood glucose concentration.
2. State *two* differences between groups X and Y in the way insulin secretion responds to the drinking of glucose.
3. Suggest a reason why the glucose concentration falls in both groups during the first hour.
4. Using information from the graphs, explain the changes in the blood glucose concentration in group Y after drinking the glucose.
5. Explain the difference in blood glucose concentration of group X compared with group Y.
6. Suggest what might happen to the blood glucose concentration of group X if they have no food over the next 24 hours.