

Diabetes and Pancreatic Cancer 10 point summary

1. The pancreas produces insulin and glucagon. **Insulin** reduces the amount of glucose in the blood by allowing the glucose to move into the tissues for either energy production or storage. Insulin stops the liver releasing glucose.
2. **Glucagon** causes the liver to release stored glucose which therefore increases the amount of glucose in the blood.
3. If the pancreas is not able to produce enough insulin the glucose in the blood will be too high. This is diabetes and if untreated results in thirst, high urine output, lethargy, infections, blurred vision and weight loss (but usually no weight loss if type 2 diabetes). [See Diabetes UK video: what is diabetes?](#)
4. Type 1 diabetes is an autoimmune condition. The beta cells in the pancreas are destroyed so the pancreas cannot produce insulin. Untreated this leads to diabetic ketoacidosis (DKA), coma then death. The only treatment is insulin.
5. Type 2 diabetes usually occurs in people who are overweight. Insulin is produced but it does not work properly. Untreated this can lead to Hyperosmolar Hyperglycaemic Syndrome (HHS) when the blood glucose levels become very high (over 30 mmol/mol). The treatment for type 2 diabetes includes weight loss, exercise, tablets, GLP-1s (injections) and eventually insulin. **Most of the medications for type 2 diabetes are designed to promote weight loss so are not suitable for people who are at risk of weight loss due to pancreatic cancer.**
6. Type 3c (secondary) diabetes. Pancreatic cancer can reduce the amount of insulin produced. This varies from case to case and over time. **If the whole pancreas has been removed the person will require insulin replacement therapy.** All others will need an individual assessment to determine what treatment is required. The options are: a) no diabetes, b) diabetes treated with tablets (gliclazide or glimepiride) but **not metformin** and c) insulin. Some people start with diet/tablets and progress to insulin.

7. Blood glucose levels:

- a. If no diabetes most blood glucose readings will be 3.5 – 8 mmol/l. If someone with diabetes had the above blood glucose readings they would be at high risk of multiple episodes of hypoglycaemia **HbA1c less than 42 mmol/mol**
- b. If Type 1 diabetes (following structured education and on basal bolus insulin) reasonable pre meal blood glucose targets would be 5 -7 mmol/l (5 – 9 mmol/l pre bed). 1 or 2 mild hypos a week could be expected.
HbA1c 48 - 53 mmol/mol
- c. If Type 3c diabetes due to pancreatic cancer the target blood glucose levels may be 6 -12 mmol/l. An individual assessment would be needed to advise on blood glucose levels and target HbA1c.
- d. If Type 3c diabetes and palliative care it would be reasonable to aim for blood glucose 8 -15 mmol/l. Do not stop insulin. May need to change tablets to insulin. The aim is to avoid hypoglycaemia, symptomatic hyperglycaemia and DKA.

8. Hypoglycaemia: Hypos are usually defined as a blood glucose of less than 4 mmol/l . They need treating quickly with fast acting carbohydrate eg. 4 jelly babies. If someone has pancreatic cancer they are unlikely to benefit from tight blood glucose control so hypos should be avoided if possible. Look up treatment of hypos on the Diabetes UK website (**diabetes.uk.org**)

9. If on insulin or a sulphonylurea (gliclazide, glimepiride) and driving they must check that the blood glucose is over 5 mmol/l before driving. If on insulin they must also inform DVLA and insurance. **Look up rules on driving and diabetes.**

10. If **steroids** are started the blood glucose levels will increase. The diabetes team may need to be contacted to advise on management. A patient taking tablets for diabetes may need to start insulin. A patient on insulin will need urgent and detailed advice about increasing the doses. Large doses of steroids can upset the management of diabetes. (Infections also increase blood glucose levels)