



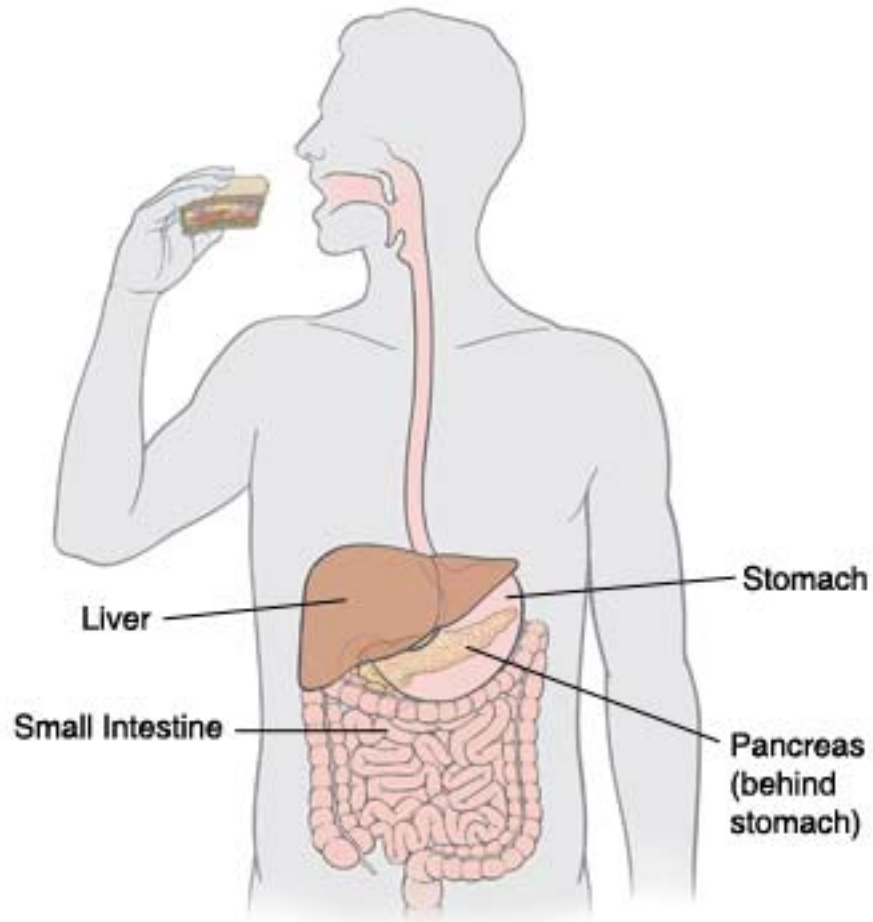
Guy's and St Thomas'
NHS Foundation Trust

Diabetes: What is it and why does it matter?

Dr. Anna Brackenridge

What is diabetes?

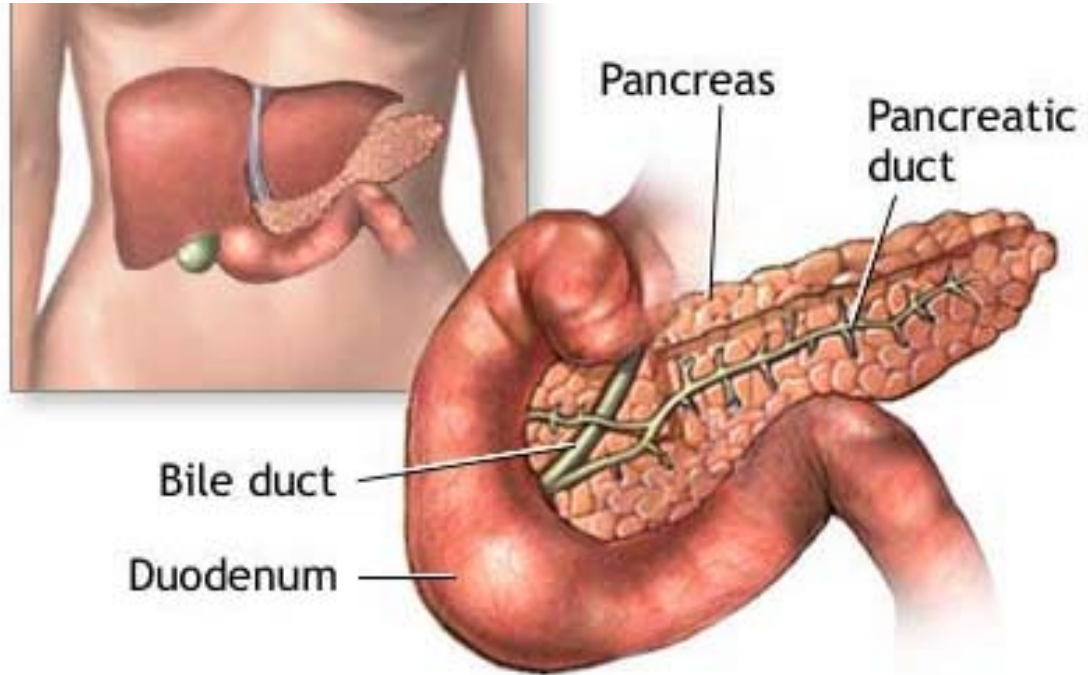
- Long-term medical condition
- Raised blood glucose (sugar)
- Glucose is used for energy by the cells of the body
- In someone without diabetes the body carefully controls blood glucose levels, so they stay between about 4 and 6 mmol/l.



Insulin

- **Insulin is a vital hormone that regulates blood glucose**
- **Insulin is made by the pancreas when blood glucose increases**
- **Insulin lets cells take up glucose from the blood**
- **Insulin stops the release of glucose from the liver**

- **As glucose levels fall insulin production decreases**
- **Glucose that is not used is stored in the liver as glycogen or as fat**



Diabetes

- **Diabetes results from lack of insulin or resistance to the action of insulin**
- **Without insulin**
 - Glucose can not be used by cells
 - The liver releases glucose
- **Resulting in raised blood glucose levels**

Symptoms of diabetes

- Passing excessive urine
- Weight loss
- Thirst
- Visual disturbance
- Thrush
- But sometimes none



Classification of Diabetes

- Type 1
- Type 2

(other)

- Gestational or pregnancy diabetes

Type 1 diabetes

- Pancreas stops making insulin
- Commonly affects people under 30 years old
- Often very acute onset

- Treatment = INSULIN



Type 2 diabetes

- **Accounts for 90% of diabetes**
- **Insulin does not work properly (insulin resistance)**
- **Can be gradual onset or even asymptomatic**
- **Tends to be associated with increased weight and sedentary lifestyle**
- **Often runs in families**
- **Higher risk in some ethnic groups**
- **Most commonly diagnosed in older people**
- **But rapidly increasing in younger people**

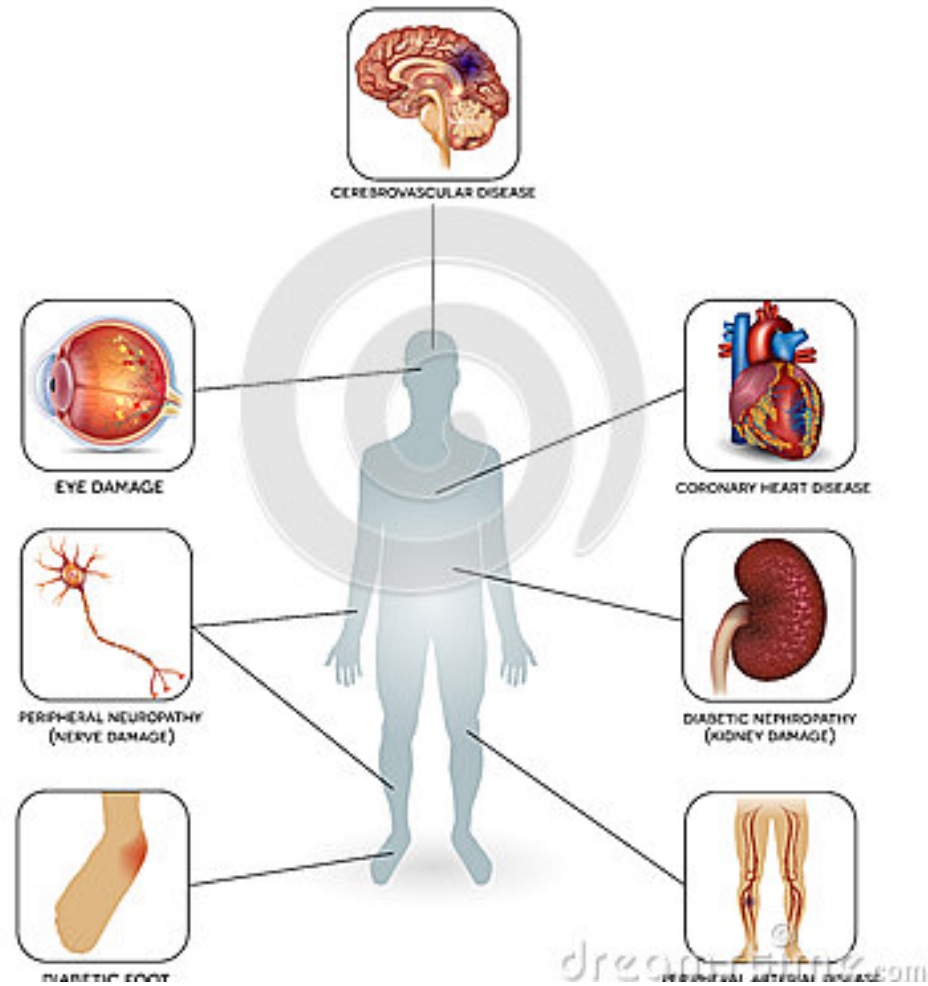
Treatment of Type 2 Diabetes

- **Diet and lifestyle change**
- **Tablets**
 - Metformin (helps insulin work better)
 - Gliclazide (increases insulin production)
 - Gliptins
 - Dapagliflozin
- **Insulin**
- **Other injectables**

Why does diabetes matter?

- **High blood sugar levels cause damage**
- **Very high blood glucose levels cause acute illness**
- **Long-term raised glucose levels cause gradual onset of ‘complications’**
- **Low blood glucose levels are also dangerous.**
 - Usually result of diabetes treatment with insulin or some tablets (gliclazide)

Diabetes complications



Diabetic eye disease (retinopathy)



Diabetes is common and increasing

- **Number of people with diabetes has doubled since 1996**
- **Estimated that 4.5 million people in the UK have diabetes**
 - This includes 1 million people who don't know they have diabetes
- **In London about 1 in 20 people have diabetes**
- **Treating diabetes and the consequences of diabetes estimated to use 10% of NHS budget**

Aim of diabetes treatment

- **Keep people healthy**
- **Maintain blood glucose at level that prevents complications**
- **Screen for complications**
- **Treat complications**
- **Treat other risk factors such as raised cholesterol or blood pressure**

- **Education and self-management is key**