

# ward 5

# Welcome To Ward 5

## Diabetes and Endocrine

Ward 5 is a newly established ward that first opened in June 2020. The team we have are all passionate about the care we provide to our patients. We have high standards and high expectations from our team and we believe patient safety and patient care is the absolute pinnacle of the ward. We will welcome you as a part of our team and will expect you to keep to these standards.

The ward has 28 beds in total and is made up of 7 bays – 4 patients to a bay. We have no side rooms. The ward aims to be a complete Green area. To achieve this we follow the hospital's strict PPE policies and guidelines. We do however have the odd blue area on the ward and this can't always be helped.

On the ward we work 12hr shift patterns.

- Days: 0700-1930
- Nights: 1900-0730

Due to the shift patterns you will find that you will not meet your weekly hours but don't worry about this as we will correct them.

The ward has swipe access to all areas including getting in and out of the main doors. Please ask either the Ward Manager or one of the Band 6's to send an email to security with your badge number to get you access.

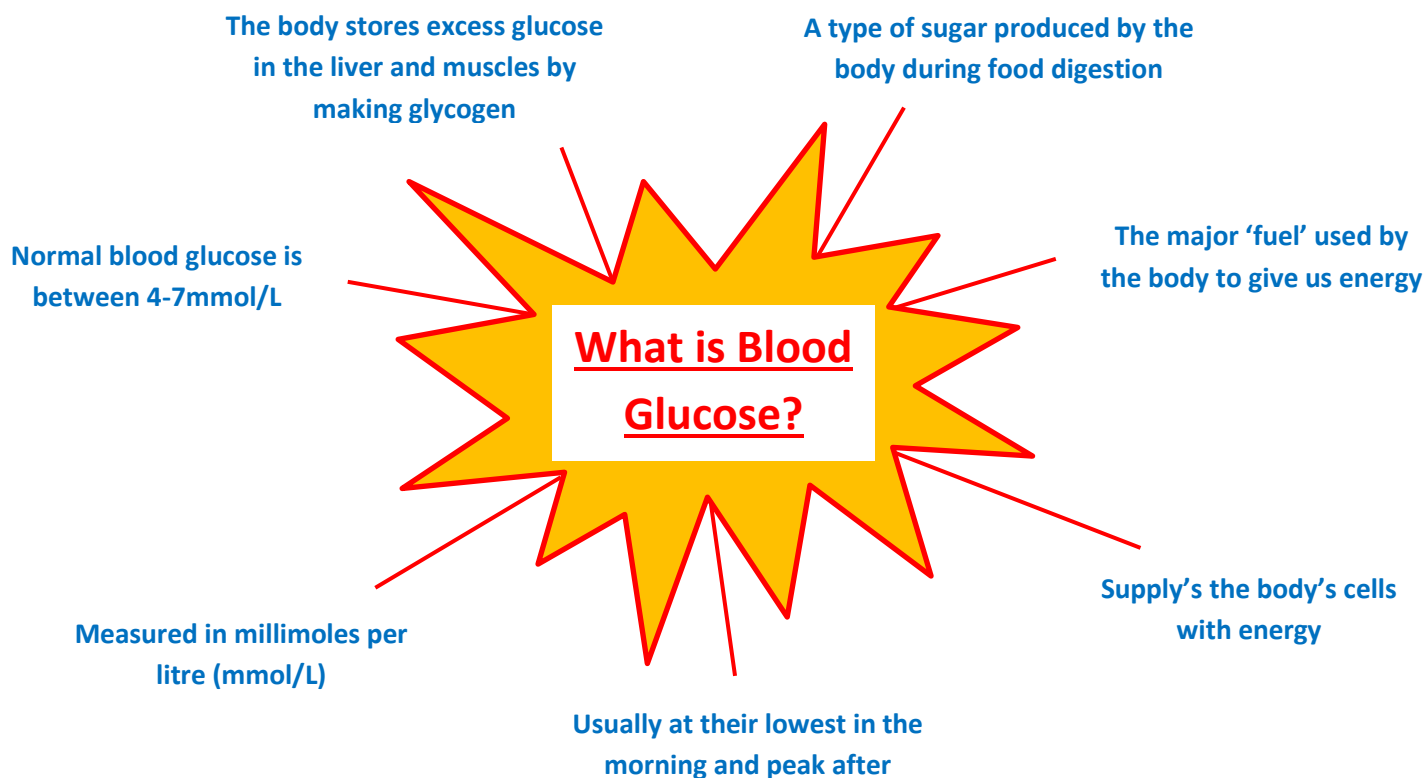
We hope you enjoy your time with us; we aim to give you as much experience as possible and we thank you for all your help and support.

# Understanding Diabetes

## What is diabetes?

Diabetes is a metabolic disease where the body cannot properly control levels of glucose in the blood. Diabetes is a chronic and progressive condition that impacts upon almost every aspect of life. It can affect infants, children, young people and adults of all ages and is becoming more common. Diabetes can result in premature death, ill health and disability, yet these can often be prevented or delayed by high quality care.

Glucose is one of the body's main fuels. It is an energy rich source that is broken down in cells to power the millions of biochemical reactions that constantly take place in the body. Put simply, glucose provides energy to all of the cells in the body. The cells take in glucose from the blood and break it down for energy. Some cells, like brain cells and red blood cells rely solely on glucose to fuel.



The food we eat is made up of fat, protein and carbohydrates. Protein and fat don't actually have a direct effect on blood glucose levels but they do need to be considered as part of an overall healthy diet. It is carbohydrate that provides our main energy supply for the blood, to keep it functioning. Carbohydrates in the form of starches and fibre are important to:

- Help regulate blood sugar levels
- Prevent the body from using protein for energy as it is required for other important functions
- Give a feeling of fullness (assisting weight control)
- Protect against heart disease, cancer and help prevent constipation.

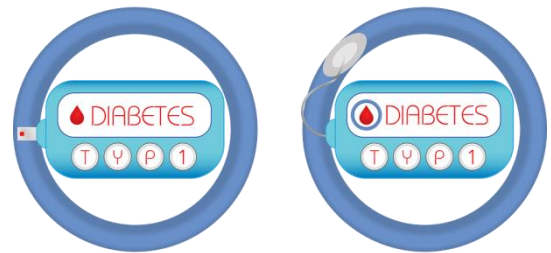
# Types of Diabetes

There are 2 main types of diabetes, these are;

- Type 1 diabetes
- Type 2 diabetes

## Type 1 Diabetes

Type 1 diabetes is often referred to as insulin-dependent diabetes. It is also sometimes known as juvenile diabetes or early-onset diabetes. It can develop at any age but usually appears before the age of 40, and especially in the teenage years. It starts suddenly rather than progressing.



Type 1 diabetes is an autoimmune disease whereby the body's immune system attacks and kills off its own insulin-producing cells. As a result the body is unable to produce insulin and this leads to increased blood glucose levels, which in turn can cause serious damage to all organ systems in the body. No one knows why this happens but the body has an abnormal reaction to the cells. There is nothing that we can do to prevent Type 1 Diabetes.

Type 1 diabetes is always treated with insulin injections. An individual with type 1 diabetes will need to take insulin injections for life. They will also need to ensure that their blood glucose level stays balanced by eating a healthy diet and carrying out regular blood tests. People with type 1 diabetes make up only 10% of all people with diabetes.

## Type 2 diabetes

Type 2 diabetes develops when the body can still produce some insulin but not enough for it to function properly, or when the cells in the body do not react properly to insulin. This is called insulin resistance.



## What is insulin resistance?

Insulin resistance is a condition in which the body produces insulin but cannot use it effectively. When people have insulin resistance, glucose builds up in the blood instead of being absorbed by the cells. When an individual develops insulin resistance, their muscle, fat and liver cells do not respond properly to insulin and so find it difficult to absorb glucose from the blood stream. One of insulin's jobs is to unlock the cells of the body to enable them to take in glucose. Insulin resistance occurs when the cells do not unlock to take in glucose. When this happens, the body requires higher levels of insulin to help the glucose enter the cells. The beta cells of the pancreas try to keep up with this demand by producing more insulin in an attempt to stabilise the blood glucose. As long as the beta cells are able to produce enough insulin to overcome the insulin resistance, blood glucose levels will remain in the health range. Although the exact causes of insulin resistance are not completely understood, it is thought that major contributing factors include excess weight (especially around the middle of the body) and physical inactivity.

# How insulin is produced



Insulin is a hormone made by an organ in the body called the pancreas. The pancreas is a large gland and is part of the digestive system. It is located high up in the abdomen and lies across the body where the ribs meet at the bottom. It is shaped like a leaf and is about six inches long. The wide end is called the head while the narrower end is called the tail: the middle part is called the body.

The pancreas has two important functions. It produces:

- Pancreatic digestion juices
- Insulin and other digestive hormones

The exocrine pancreas is the part of the pancreas that produces digestive juices; whilst the endocrine pancreas is the part of the pancreas that produces insulin and other digestive hormones.

Endocrine cells are made up of tiny clusters of cells known as islets of Langerhans or pancreatic islets. Two of these cells produce the hormones insulin and glucagon.

- The beta cells create and secrete insulin
- The alpha cells create and secrete glucagon.

The whole process begins when food is eaten. When the food is digested, glucose passes into the blood stream and the pancreas is stimulated to produce insulin. The Insulin acts as a key that unlocks the cells in the body to allow the glucose to enter. Glucose is used by the body as its major energy source, but if too much glucose is left in the blood, glucose levels will remain elevated. Insulin is secreted by the beta cells in the pancreas.

It is the pancreas that is responsible for this process. It is only when the beta cells in the pancreas start to decline or malfunction that people become aware of the essential role it plays in providing energy and in the regulation of blood glucose levels.



# How insulin regulates blood glucose levels

Insulin is a hormone that plays a number of roles in the regulation of the body's metabolism. It also plays a key role in regulating blood glucose levels. If the pancreas cannot produce insulin or if the body is unable to respond to the insulin, it will result in diabetes.

In addition to insulin, the pancreas also produces glucagon; these two hormones are responsible for regulating glucose levels in the blood. Insulin and glucagon are secreted from the pancreas directly into the bloodstream.

When the concentration of blood glucose rises in the blood, insulin is released. Insulin lowers the blood glucose levels by stimulating cells throughout the body to use and store glucose.

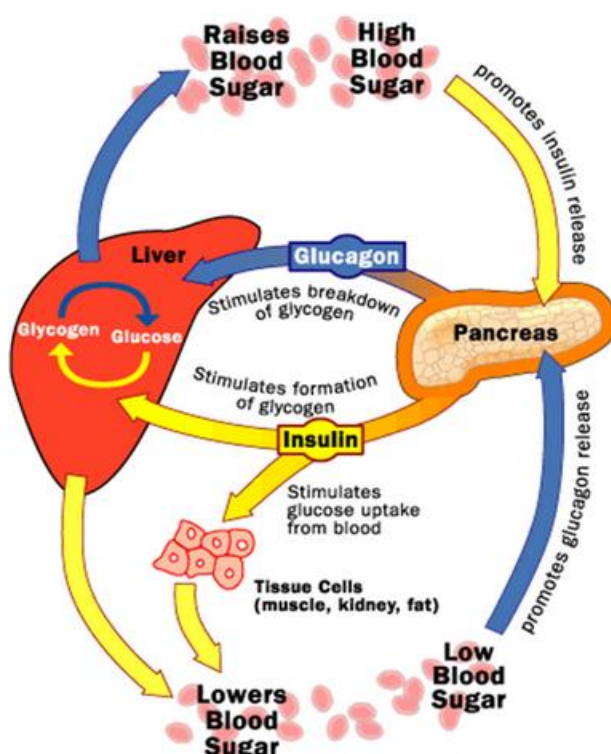
Glucagon has the opposite effect of insulin. It triggers the release of stored sugars, increasing the concentration of glucose in the blood. Glucagon acts as a control mechanism whenever the body produces too much insulin.

Without insulin the blood glucose builds up in the blood and the cells are starved of their energy source.

Research has indicated that people with pre-diabetes can prevent it from developing into type 2

diabetes by making changes to their lifestyle – mainly through changes to diet and physical activity. It is therefore important that people with pre-diabetes are supported to make lifestyle changes and that they are encouraged to manage their condition. Early action can slow down or even stop the development of type 2 diabetes.

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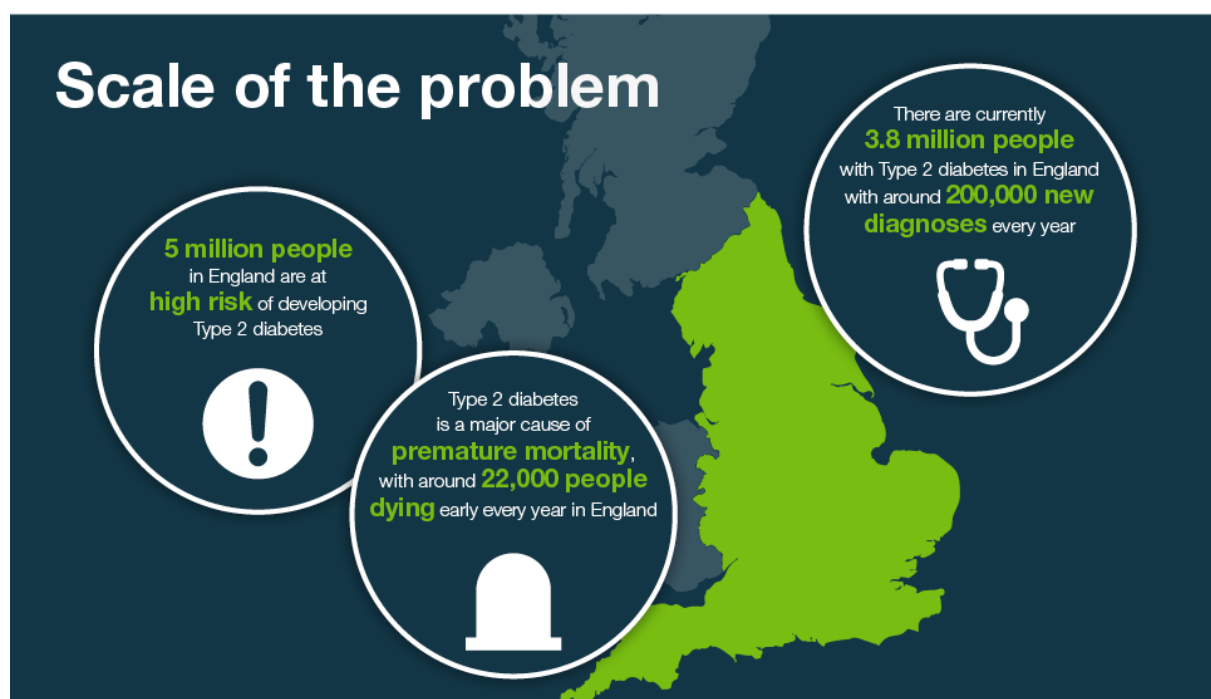


# Signs and symptoms of diabetes

The signs and symptoms of diabetes are generally the same for Type 1 and Type 2 diabetes; however there is a difference in the way in which they appear. With Type 1 diabetes the signs and symptoms are usually very obvious and develop very quickly, often over just a few weeks. With type 2 diabetes the signs and symptoms may not be quite obvious as the condition develops slowly over a period of years and may only be picked up through a routine check-up.

The main symptoms of untreated diabetes are:

- Increased Thirst – This is due to the loss of large volumes of water
- Frequency in passing large amounts of urine – the kidneys attempt to filter the glucose out of the body
- Extreme Tiredness – this is because the glucose cannot be taken up by the cells and used for energy
- Blurred vision – due to glucose building up in the lens at the front of the eye
- Genital itching or regular episodes of thrush – this is because of the increased glucose levels this creates an environment where micro-organisms that cause thrush can survive.
- Slow healing of wounds – this is because of high levels of glucose, bacteria are more likely to thrive in wounds, making healing much slower.



# Common medications

ABX – antibiotics

AF- atrial fibrillation

AKI – acute kidney injury

ALD – alcoholic liver disease

BD – twice daily

CKD – chronic kidney disease

COPD – chronic obstructive pulmonary disease

CVA – cerebral vascular accident

CXR – chest x-ray

DNAR – Do not attempt cardiopulmonary resuscitation

DVT – Deep vein thrombosis

HTN – hypertension

IDA – iron deficiency anaemia

IEOCOPD – infective exacerbation of chronic obstructive pulmonary disease

IHD – ischemic heart disease

IVI – intravenous infusion (fluids)

LRTI – lower respiratory tract infection

MI – myocardial infarction (heart attack)

MOFD – medically optimised for discharge

NBM – Nil by mouth

NDNF – normal diet, normal fluids

NG- nasogastric

NIEOCOPD- Non- infective exacerbation of chronic obstructive pulmonary disease

NKDA – no known declared allergies

OA – osteoarthritis

OD – once daily



QDS – four times daily

RA – rheumatoid arthritis

SFB- strict fluid balance

SOB- shortness of breath

T1DM – type 1 diabetes mellitus (IDDM – insulin dependent diabetes mellitus)

T2DM – type 2 diabetes mellitus

T2RF – type 2 respiratory failure

TDS – three times daily

TWOC- trial without catheter

URTI – upper respiratory tract infection

# Common medications

Amlodipine

Amoxicillin

Aspirin

Atenolol

Bisoprolol

Clarithromycin

Co-amoxiclav

Dalteparin

Enoxaparin

Erythromycin

Exenatide

Flucloxacillin

Furosemide

Glicazide

Insulin

Lansoprazole

Levetiracetam

Linagliptin

Macrogol 3350

Meropenem

Metformin

Omeprazole

Saxagliptin

Sitagliptin

Spironolactone

# Spoke placements

DSN – liaise with the DSN's to gain knowledge around diabetes and common medications

DF – there is an opportunity to spend half a day with the discharge facilitator

PT/OT – liaise with the team to follow them for your select group of patients.

SALT - liaise with the team and follow them for your select group of patients.