



Diabetes Research & Wellness Foundation



What is **DIABETES?**

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In simple terms diabetes prevents your body converting sugars and starches in your food into energy. The body uses insulin to do this. When diabetes is present the body fails to produce insulin or the insulin it does produce doesn't work properly (insulin resistance).

When we eat food some special cells in our pancreas should produce insulin. The insulin transports glucose, made from carbohydrates (e.g. complex bulky sugars, which the body breaks down to use for energy) in the food, into the cells, where it can be used by the body for energy. Sugars and starches are the most efficient source of food energy and are carried in the blood as glucose.

If insulin is not produced, or does not work, the glucose builds up in the bloodstream instead of getting into the cells, causing the common symptoms of diabetes:

Lethargy: carbohydrate cannot be converted into energy.

Frequent passing water: the body flushes excess glucose down the toilet.

Thirst: the body attempts to replace lost fluid.

Repeated infections: bugs love sugar.

Weight loss: predominantly in type 1 diabetes.

Visual changes: due to temporary changes in lens shape.

Symptoms are more often to be found in people with type 1 diabetes. People with type 2 diabetes may have no, or very few symptoms, prior to diagnosis. Your health care team should support you through this time and answer your queries.

1



Figure 1 Many people with diabetes monitor their blood glucose levels. This allows them to alter their insulin dose or contact their care team for advice if concerned.

2



Figure 2 Healthy eating plus physical activity are the cornerstones of good diabetes management.

What are the different types of diabetes?

In **type 1 diabetes** the pancreas fails to produce insulin and insulin therapy is required for life.

In **type 2 diabetes** the cause is generally weight related. If you are slim it is likely your body is not producing enough insulin to convert the carbohydrate you eat into energy. You may need tablets and/or insulin to help. If you are overweight it is more likely that insulin resistance is responsible.

Reducing your weight and being physically active will reduce your insulin resistance and could lead to remission, but you may need medication or have to inject insulin to help.

There are other types of diabetes but they are unusual conditions and specialist care should be provided to support you with these.

Causes of diabetes

The cause of type 1 diabetes is unknown but it is thought to be an auto-immune process. In effect the body produces antibodies to the pancreas, damaging it and preventing it producing insulin. Type 1 diabetes only affects about 10% of all people with diabetes and it usually starts below the age of 40.

Type 2 diabetes is more likely to affect older people, although it is being found increasingly in younger people - especially if they are overweight and lacking in physical activity.

Type 2 diabetes is strongly linked to obesity and tends to run in families. It is more prevalent in people of South Asian and Afro-Caribbean descent. Many people with type 2 diabetes have high blood pressure and cholesterol. They may need medication to help control these, to help reduce the risk of damage to key blood vessels alongside glucose lowering treatment.

Treatments

Type 1 diabetes is always treated with insulin. There are many different types of insulin delivery mechanisms and your healthcare professional will help to decide the right method for you. If you are on insulin you should discuss the most appropriate one for you with your care team. Be sure to 'rotate' injection sites - a fatty pad may build up under the skin if you inject repeatedly in the same area. This can affect insulin absorption.

Sharps, needles and lancets need to be disposed of carefully. Sharps bins are available on prescription. Your healthcare team can give you advice on how to dispose of your sharps responsibly.

The backbone of treating type 2 diabetes is always healthy eating plus physical activity. But type 2 diabetes is a progressive condition and, in time, tablets and/or other forms of medication may be likely to become necessary and may even progress to insulin injections.

Most people with diabetes require medication to control their condition yet fewer than half remember to take them as prescribed. When you agree to take medication make sure you know what each tablet is for, any side effects to be expected and when to have a review. Your medication is designed to prevent complications in the future even if you feel well now. If you have a concern with your medication please let your care team know.

Blood glucose target levels

All people with diabetes taking insulin treatment and some of those treated with specific tablets are encouraged to monitor their blood glucose. You should discuss this with your GP or healthcare professional (**Figure 1**). Generally the target to aim for is around 4-8mmol before meals and up to 10mmol two hours after meals - although we are all individuals and targets must be tailored to our needs.

These levels should not be confused with a blood test usually performed at your GP surgery called an HbA1c. This gives a measure of the amount of glucose in the blood in the preceding three months - the target nowadays is 48 - 58mmol/mol (which was 6.5 - 7.5% previously). As with daily blood glucose levels, this target may also be personalised depending on your individual situation.

Insulin and some tablets can reduce your blood glucose levels to low levels making you feel unwell and confused, a condition referred to as a 'hypo' or hypoglycaemic episode. Your healthcare team should discuss this with you if you are at risk of them and how to reduce the risk of them happening. This is especially important if you drive or live alone.

Basic recommendations

Food, glorious food. If we all ate the diet recommended for people with diabetes the health of the nation would be improved. The size of the plate matters too. If food intake exceeds physical activity undertaken, weight is likely to increase. A healthy, balanced diet is also recommended as part of a healthy and active lifestyle (**Figure 2**).

What care to expect

At diagnosis you should be given a full explanation of diabetes and a care plan. You should be involved in agreeing goals and targets achievable by you and offered the chance to attend a diabetes educational event. Take a note of what is agreed. It will come in useful as you see your progress over time. At the very least you should have annual reviews for your diabetes including an explanation of blood tests. These should ideally be done a week or two prior to the consultation, to allow time for the results to be shared with you.

There is a national programme for eye screening for people with diabetes. You should also, as part of your annual health check, have your feet examined and your blood pressure reviewed. Most importantly, you should have an opportunity to discuss your care with your diabetes team and agree the next steps to protect your health.

Top tips to manage diabetes

Diabetes is never mild... But it can be managed

- **Maintain a healthy weight.** Losing weight, if you are overweight, improves overall health and diabetes control.
- **Be physically active.** Physical activity improves insulin sensitivity.
- **Keep blood glucose levels under control.** This helps protect the eyes, kidneys and feet.
- **Know your cholesterol level.** Cholesterol lowering treatments (like statins) helps protect the heart.
- **Have your blood pressure checked regularly.** Good blood pressure levels protect the heart and kidneys.
- **Do not smoke.** Smoking is highly damaging, but much more so when combined with diabetes. Both thicken the blood, encourage clot formation and put a strain on the heart.

More information

Your first point of call should be your diabetes healthcare professional. For more information on any aspect of diabetes please call DRWF on **023 9263 7808**.

You may also contact NHS at the following links and telephone numbers:

England

Freephone: **111**, 24 hour helpline. NHS 111 service website:

www.nhs.uk/using-the-nhs/nhs-services/urgent-and-emergency-care/nhs-111

Scotland

Freephone: **111**, 24 hour helpline. NHS 24 website: **www.nhs24.scot**

Wales

Freephone NHS Direct Wales on **0845 46 47**. NHS Wales Direct website:

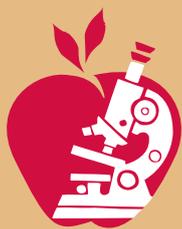
www.nhsdirect.wales.nhs.uk/contactus/feelingunwell/

Northern Ireland

GP out of hours information service website:

www.nidirect.gov.uk/out-of-hours-service

Or you can visit the NHS Choices website: **www.nhs.uk**



Diabetes Research & Wellness Foundation

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Staying well until a cure is found...

The Diabetes Research & Wellness Foundation works towards educating, informing and reminding you of the best and healthiest choices to make.

Contact us to join the Diabetes Wellness Network and request the full series of diabetes information leaflets.



Source references can be provided on request.
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