



Living with Type 2 Diabetes

7th Edition

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Useful numbers

GP Clinic:

Diabetes Specialist Nurse:

Podiatrist:

Dietician:

Diabetes Clinic:

This booklet is designed to give you basic information about type 2 diabetes when you are first diagnosed.

What is diabetes?

Diabetes mellitus is a condition in which the amount of glucose (sugar) in the blood is too high because the body cannot properly use it. Glucose comes from the digestion of starchy foods such as bread, rice, potatoes, cereal, pasta, chapattis and also from sugar and other sweet foods. Your liver also produces glucose.

A hormone called insulin is produced in the pancreas. It is vital for life and controls the amount of glucose in the blood. One of the functions of insulin is to move glucose from the blood into the cells where it is used as fuel by the body. In type 2 diabetes, the pancreas does not produce enough insulin so the glucose remains in the blood. Many patients at diagnosis have no symptoms; some of the common symptoms are listed below.

What are the main symptoms of diabetes?

By not producing enough insulin you may start to have these symptoms caused by high blood sugar levels:

- Extreme tiredness
- Going to the toilet to pass urine more than usual – especially at night
- Increased thirst
- Genital itching or regular episode of thrush
- Blurred vision
- Weight loss

My Diabetes My Way

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Who gets diabetes and what causes it?

Diabetes is a common health condition. Over four million people in the UK are known to have diabetes – that’s approximately seven in every 100 people. There are also an estimated one million people in the UK who have diabetes but do not know it. Nearly ninety per cent of people with diabetes have type 2 diabetes. Although the condition can occur at any age, it is rare in infants and becomes more common as people get older.

Type 1 diabetes

Type 1 diabetes develops if the body is unable to produce any insulin. This type of diabetes usually appears before the age of 40. The only treatment is by insulin injections. A healthy diet and regular exercise is recommended. Type 1 diabetes develops usually over a few months because the insulin-producing cells in the pancreas have been destroyed. Nobody knows for sure why these cells have been damaged but the most likely cause is an abnormal reaction of the body to the cells. This may be triggered by a viral or other infection. This type of diabetes generally affects younger people, and both sexes are affected equally.

Type 2 diabetes

Type 2 diabetes develops when the body can still make some insulin, but not enough, or when the insulin that is produced does not work properly (known as insulin resistance). This type of diabetes usually appears in people over the age of 40. However it is now being diagnosed more frequently in young adults and children. It is more common in people of South Asian and African-Caribbean origin. Diet and exercise are fundamental in treating diabetes although medication taken as tablets or by injection may also be necessary to control blood glucose levels.

Type 2 diabetes develops slowly and high blood glucose symptoms are usually less severe. Some people may not notice any symptoms at all and diabetes may be picked up in a routine medical check up. Also, some people may put the symptoms down to ‘getting older’ or ‘overwork’ which may delay them seeking medical attention. It is possible for type 2 diabetes to go undiagnosed for several years.

What happens to the body in type 2 diabetes?

Although diabetes cannot be cured, it can be treated very successfully. Understanding what happens inside your body will help to you understand how some of the treatments work.

Blood glucose levels increase when sugar and starchy foods have been digested and turn into glucose. If somebody has diabetes, the glucose in their blood is not moved into a cell and used for fuel, either because the pancreas is not producing enough insulin, or because the insulin they produce is not working properly. This causes the liver to make more glucose than usual, but the body still cannot use the glucose as fuel. The body then breaks down its stores of fat and protein to try to get glucose but still this glucose cannot be turned into fuel as there is not enough insulin.

This is why people with uncontrolled diabetes may have some or all of these symptoms:

- Extreme tiredness – you cannot move glucose from the blood into your cells to make fuel
- Going to the toilet to pass urine more than usual – especially at night – this happens because your body tries to excrete all of the glucose
- Increased thirst – by passing lots of urine this makes you dehydrated, and your body makes you thirsty to replace the fluid that you excrete.
- Genital itching or regular episodes of thrush – urine containing a lot of glucose is the perfect environment for fungal infections and germs to thrive.
- Blurred vision – when you become dehydrated by passing lots of urine, your eyes have less fluid in them so it gives you blurred vision. This is not permanent damage and it's important not to get new spectacles or contact lenses as your vision should return to normal when your blood glucose levels come under control.
- Weight loss – when your body cannot move glucose from your blood into your cells it tries to find glucose from somewhere else as it needs energy. It will next break down fat cells which contain stored glucose to use for fuel. Unfortunately this doesn't solve the problem as there is still not enough insulin to move the fat glucose into the cells. So, by breaking down fat cells you lose weight.

Who is at risk of developing type 2 diabetes?

- Those with higher body weight (obesity)
- Those who have a blood relative with diabetes
- Those who are of South Asian or African-Caribbean origin
- Those who have had diabetes during pregnancy (Gestational diabetes)
- Those who take medication such as steroids (steroid-induced diabetes)
- The older you are the greater risk

High glucose symptoms are quickly relieved on diabetes is treated. Early treatment will also reduce the chances of developing future health problems caused by diabetes.

The treatment of type 2 diabetes

The important things to manage your diabetes are having a healthy diet that contains the right balance of foods, and also being physically active, as a first step it is usual to try diet and exercise for a few months before considering medication. If your doctor or nurse finds that this alone is not enough to keep your blood glucose levels normal, you may also need to take diabetes medication or insulin injections.

There are several types of diabetes medication for people with type 2 diabetes. Your doctor or nurse will decide which type of medication will work best for you and may prescribe more than one kind. Your doctor or nurse will explain how the medication works, when to take it and, if necessary, how to monitor your blood glucose levels.

Diabetes and combination therapy

Some patients take a combination of different medication to control their blood glucose levels. The need for changes in medication can alter over time and therefore it is important to attend regular check-ups for your diabetes. This is because the pancreas will gradually stop producing insulin and you may require different treatments.

Diabetes and insulin therapy

If your body has stopped producing enough insulin for the above medications to work, you may require insulin. This is given by injections. Your diabetes specialist nurse will give you the necessary information and support to make the transition to insulin.

Surgery for type 2 diabetes

Gastric bypass surgery normally done for the purpose of weight loss can also be used as a treatment for type 2 diabetes. When a patient has had diabetes for less than 5 years a large number of those patients can no longer require diabetic medication after this surgery. This effect is long lasting, but does not 'cure' diabetes; it must be combined with lifestyle changes in order to prevent diabetes coming back. Having gastric bypass surgery is not something that can be done without support and patients must complete a course of education prior to being considered suitable. Not everyone is suitable for surgery; each patient will be assessed on an individual basis.

Important points about your diabetes medication:

- Take your medication as instructed
- Do not stop your medication unless instructed by your diabetes team or GP
- Do not double your dose if you miss a tablet or injection
- If you are not eating you should seek advice from your GP, diabetes team or pharmacist
- Ensure you have a continued supply
- If you suffer from side-effects from the medication contact your GP or your diabetes team
- Other medications such as steroids can cause higher blood glucose levels. Your diabetes treatment may need to be altered in this case

Diabetes medication

There are several different types of medication that work in a variety of different ways:

Brand	Medical name	How is it used	How it works	Possible side-effects and other information
Glucophage Glucophage XR Glumetza Fortamet Riomet	(Biguanide) Metformin	A tablet that should be taken with or after food as it may cause stomach upset or diarrhoea.	Helps the insulin you already have work more efficiently	Usually the first choice for people, especially if they are overweight Does not cause hypoglycaemia (low blood sugar)
Minodiab Diamicron	(Sulphonylurea) Glipizide Gliclazide Glibenclamide Glimepiride	A tablet that should be taken 30 minutes before food	Encourages the body to produce more insulin in the pancreas	Can cause hypoglycaemia (low blood sugar)
Actos Competact	(Thiazolidinedione) Proglitazone	Once daily with Metformin	A tablet that helps the body use the insulin more efficiently	Not suitable for some patients with heart failure, liver or bladder problems
Prandin Starlix	(Prandial Glucose Regulator) Repaglinide Nateglinide	Taken before food	A tablet that helps the body make more insulin from the pancreas after a meal	

<p>(GLP-1 Analogue)</p> <p>Lyxumia Byetta Bydureon Victoza Trulicity Ozempic</p>	<p>Injected once or twice a day or once weekly – it is not insulin</p> <p>Exenatide weekly Liraglutide Dulaglutide weekly Semaglutide (weekly)</p>	<p>Increases the level of hormones call ‘incretins’. These hormones help the body produce more insulin when needed and reduce the amount of glucose produced in the liver.</p>	<p>Can cause nausea and reduced appetite</p>
<p>(DDP-4 Inhibitors)</p> <p>Januvia Onglyza</p>	<p>Once a day</p> <p>Sitagliptin Saxagliptin</p>	<p>A tablet that increases the level of incretins Encourages insulin production when needed Reduces the amount of glucose produced by the liver when not needed</p>	<p>Possible hypoglycaemia. Risk of genital infections and urinary tract infections.</p>
<p>(SGLT2 Inhibitor)</p> <p>Jardiance Forxiga Invokana</p>	<p>Once a day</p> <p>Empagliflozin Dapagliflozin Canagliflozi</p>	<p>Works on your kidneys to increase the amount of glucose that your body removes in urine thereby reducing blood glucose levels.</p>	<p>Possible hypoglycaemia. Risk of genital infections and urinary tract infections.</p>

Diabetes and food choices

When you have diabetes your body is unable to control the amount of glucose in your bloodstream. You can help control your blood glucose on a daily basis by being mindful about the type and amount of food you eat. If you have a higher body weight (or a body mass index in the overweight or obese range), long term weight loss will help blood glucose control. Diet is an important part of your treatment whether you are treated with diet only, or a combination of diet and medication.

There is no need to follow a 'special' diet; a sensible healthy balanced eating plan is best. The following guide provides key advice on foods and options on how you might aim to eat. You will have access to detailed dietary advice as part of an education session called DESMOND which you will be invited to attend when newly diagnosed. If you require specific dietary advice your doctor can refer you to a Registered Dietician, you could also be referred to the Weight Management Service if you would like support with weight loss

Have a balanced healthy diet and have regular meals

It is important to have a nutritionally balanced diet, which includes foods from all of the food groups. You should aim to have three meals a day and limit snacks, especially if trying to lose weight. If you feel you need something to eat between meals, good options are snacks such as fruit, vegetables or low calorie yoghurt. Remember to have a good regular fluid intake.



Carbohydrates

Carbohydrate is our body's preferred source of energy (calories) in the diet. All carbohydrates are broken down into glucose which is essential fuel for the body, especially the brain. The body aims to maintain a constant glucose level in the bloodstream at all times.

Carbohydrate is present in starchy carbohydrate foods such as breads, potatoes, pasta, rice, beans and pulses, as well as in fruit, some vegetables, some dairy foods and sugars.

The amount of carbohydrate eaten or drunk is the major factor in blood glucose control and therefore types of carbohydrates and portion sizes are important.

Starchy Foods

These foods are energy foods so although we should include some at each meal we should moderate our portion sizes and try to include high fibre varieties. These are bulky and filling and can sometimes slow down the rise in blood glucose levels. Healthier options of these foods are:

- Wholemeal and granary breads or rolls
- Potatoes with their skins, small – medium baked potatoes
- Wholemeal rice and pasta
- Basmati rice
- High fibre cereals – Weetabix, Shredded Wheat, All Bran and Branflakes
- Porridge
- Oatcakes and high fibre crackers

Fruit and vegetables

These foods are a good source of fibre, low in fat and calories and contain many vitamins and minerals vital for good health. We should aim to have at least five portions of fruit and vegetables combined a day. Many fruits contain natural sugars so we should spread our intake out over the day and have one portion at a time.

One portion is:

- 1 apple, orange, banana
- 2 small fruits, e.g. Satsuma/plums/kiwis
- cup of grapes or berries
- dessert bowl of salad or vegetable soup
- 2-3 tablespoons of raw, cooked, frozen or canned vegetables

Fruit juice contains vitamins but no fibre, so the natural sugars present are absorbed quickly, causing a rapid rise in blood glucose levels. It is okay to have a small glass of fruit juice (150–200 ml) alongside food but not in large volumes and not on an empty stomach.

Sugary foods and drinks

Foods and drinks that contain large amounts of sugar can raise your blood glucose levels very quickly. These foods include full sugar drinks, sweets, chocolate, cakes, biscuits and puddings. Try to use low sugar or sugar-free alternatives instead. If you eat regular meals, you can include foods high in sugar in your diet occasionally but keep portions small.

Reduce sugar intake by having smaller amounts of these foods, less frequently and choose lower sugar alternatives.

- Diet/Zero or low calorie drinks and squashes
- Low sugar jams and marmalades or small quantities of ordinary products
- Plain, low sugar cereals, e.g. porridge, Weetabix, Cornflakes or Branflakes
- Plain biscuits, e.g. oatcakes, rice cakes, corn cakes, crackers, Rich Tea, scones or pancakes
- Low sugar pudding and yoghurts – labelled ‘sugar-free’, ‘diet’ or ‘lite’

If having sweet foods – aim to have these after food or as part of a meal, not on an empty stomach.

Labels

Many foods contain hidden sugars so it is good to check labels.

Definitions of sugar on labels:

Sugar-free – contains none or a minimal amount of sugar

No added sugar/unsweetened – may have natural sugars present

Low sugar – contains no more than 5g of sugar per 100ml/100g

High sugar – contains more than 15g of sugar per 100g/100ml

Artificial sweeteners, if taken in moderation, can be beneficial in helping to reduce blood glucose levels when used as part of low calorie diet.

Diabetes products

These foods (e.g. 'special' biscuits, cakes and sweets) are very expensive and can be high in fat and calories. They also contain sorbitol, which can have an unwanted laxative effect. Therefore these products are generally not recommended.

Glycaemic Index

The Glycaemic Index (GI) is a ranking of carbohydrate-containing foods based on the overall effect on blood glucose levels. Slowly absorbed/digested foods have a low GI rating, while foods that are more quickly absorbed have a higher rating. This is important because choosing slowly absorbed carbohydrates, instead of quickly absorbed carbohydrates, can help even out blood glucose levels when you have diabetes. Many things can affect the GI index, so following a healthy balanced diet which is high in fibre, (especially wholegrains such as nuts and seeds) balanced and low in simple (refined) sugars should support a low GI regime.

Milk and dairy produce

These foods are a good source of calcium, vitamins and minerals and we should include some of these foods as part of our balanced diet. Many of these foods can be high in saturated animal fats (which can raise cholesterol) so we should try to opt for small portions and lower fat varieties of these foods.

Meat, fish, eggs and beans

These foods are a good source of protein, vitamins and minerals and should be included as part of healthy balanced diet. We should try to opt for lean and lower fat meats (chicken and fish) reduce fat in cooking and try to have oily fish in the diet as it is a good source of omega 3 Fatty acids.

Omega 3 fats

These fats are beneficial in diabetes in that they help with the heart and circulation.

The best sources of these fats are oily fish, such as:

- Pilchards
- Mackerel
- Trout
- Salmon
- Sardines
- Herring
- Fresh tuna

It is recommended we have at least two portions per week.

A portion is equivalent to 140-150g (4-5 oz)

Vegetarian alternatives are:

- Linseed, rapeseed, soya and walnut oil
- Walnuts
- Green leafy vegetables
- Soya beans and Tofu
- Omega 3 fortified foods such as eggs, margarines

Supplements are not generally recommended as there is not enough evidence to support their benefit.

Other types of fat

Eating too much fat and the more harmful saturated types of fat can cause:

- Weight gain and make it difficult to lose weight
- Insulin resistance which makes blood glucose control more difficult
- Increased cholesterol levels which can lead to circulatory problems

No matter what type of fat – they all contain a lot of calories, so eating too much will lead to weight gain.

We should choose healthier types of fat, but have a smaller fat intake overall.

Best Choice Of fat	Next Best	Eat Sparingly
MONO-UNSATURATED FATS	POLY-UNSATURATED FATS	SATURATED FATS (causes insulin resistance and can raise cholesterol)
Rapeseedoil	Sunflower oil	Lard
Olive oil and olive oil spreads	Cornoil	Butter
Avocados	Soya oil	Solid oils e.g. ghee, coconut oil
Nuts	Sunflowerbased margarines and spreads	Hard margarines
		Food containing animal fats – sausages, pies, pastries, cheeses

Check labels for types of fat and amounts

Definitions of fats on labels:

Low fat – contains less than 3g per 100g/100 ml

Reduced fat – contains 25% less fat than the standard product but may still be high in fat

Ways to reduce fat intake

- Baking, grilling, microwaving or steaming instead of frying
- Choosing lean meats, fish or chicken (remove fat and skin)
- Using low fat dairy produce, e.g. semi-skimmed milk, low fat spread and yoghurts
- Have boiled, baked or mashed potatoes instead of chips
- Limit intake of fatty foods such as cheese, crisps, pies, pastry, cakes, biscuits, chocolate, cream, cream sauces and salad dressings
- Minimise intake of takeaway and fast foods

Keep your salt intake low

Cutting down on salt can help lower blood pressure. People with diabetes can be at a greater risk of developing high blood pressure. Salt occurs naturally in many foods so it can be difficult to know how much we are consuming. Aim to have no more than 5-6g per day (ideally 3g or less) Avoid highly salty processed foods (e.g. crisps, bacon, tinned and packet soups, processed meats) and try not to add salt at the table. We do not recommend salt substitutes.

Moderate alcohol intake

There is no need to give up alcohol because you have diabetes. Guidelines recommend a limit of 14 units per week for both men and women spread over three days or more. No alcohol should be consumed when pregnant or planning to conceive

You should always check with your doctor whether it is safe for you to have alcohol.

What is a unit of alcohol?

The definition of a unit of alcohol depends on the percentage (%) alcohol by volume (or ABV) of the drink.

A typical unit is:

- 125ml of normal strength wine
- 25mls one pub measure of sherry or spirit (vodka, whisky etc.)
- Half-pint of normal strength beer, lager, cider, etc.

Remember – alcoholic drinks can often be high in sugar and calories so can contribute to raised blood glucose levels and weight gain. Try to have low sugar drinks and limit overall intake if trying to lose weight. Avoid ‘alco pops’ as these are very high in sugar.

Also NOTE: Drinking alcohol makes hypoglycaemia (low blood glucose levels) more likely to occur, especially if your diabetes is treated with insulin or certain tablets.

To reduce the chance of a hypo:

- Do not drink alcohol on an empty stomach
- If you drink more than 3 units, have a starchy snack such as cereal or toast
- Do not substitute alcoholic drinks for meals – this may lead to a hypo
- Always make sure you eat some starchy carbohydrate before going to bed after drinking. Severe hypoglycaemia can occur with larger quantities of alcohol, particularly if you are treated with insulin and if too little carbohydrate is eaten.

Weight management

Achieving and maintaining a healthy weight (or body mass index) is the most effective way to improve type 2 diabetes overall including improved blood glucose levels. If you have a higher body weight, even a modest weight loss of around 5% can make a big difference to improving your overall health, not just your diabetes control.

We recognise that weight loss can be challenging and most people will benefit from the support of specialist to help achieve this. The weight management service in NHS Lothian is a specialist team who provide a range of free weight management programmes in all localities which incorporate dietary advice, physical activity and behaviour change to help support lifelong health behaviours. These programmes are available to anyone with a diagnosis of type 2 diabetes who would like help with weight loss.

There is new evidence that more significant weight loss (of 15kg or more) can even lead to remission in type 2 diabetes in some cases. Within Lothian we are trialling the use of total diet replacement programmes (liquid diets) for those patients with a recent diagnosis of type 2 diabetes.

Physical activity and diabetes

Being active is good for all of us but it is especially important if you have diabetes. Looking after yourself when you have diabetes means increasing your physical activity as well as managing your diet and taking your medication. They are all equally important in controlling your blood glucose levels.

It is now recommended that moderate activity such as 30 minutes or more of brisk walking every day has health benefits. This may be broken up into 10 minute bursts throughout the day. This might be something you could achieve now or you may be able to build up to it over a period of time.

Why should I increase my physical activity?

Being active is not only good for your body but it is also good for your mind and reduces stress.

- It keeps the brain active
- It keeps the joints mobile
- It strengthens the heart
- It reduces and regulates blood glucose levels
- It improves insulin sensitivity
- It improves circulation
- It lowers blood pressure
- It releases endorphins (happy hormones) – making you feel good
- It expands lung capacity
- It strengthens muscles and bones
- It tones the stomach and strengthens the back
- It reduces stress
- It reduces fat around organs.

What activities can I do?

- Choose the stairs – walk up escalators
- Walk or cycle for short journeys
- Turn off the TV and get out and about
- Do housework to music, it's fun and the chores seem easier
- Find someone to exercise with you – it might be your dog or why not borrow one?
- Get off the bus a few stops early.

If you are less mobile, there are still benefits from increasing your activity. Armchair exercises, gentle walking, stretching programmes, will all help to keep you as mobile and as fit as possible.

There are three components of fitness – Strength, Stamina and Flexibility



The three components of fitness – strength, stamina and flexibility – are not equal within every activity which is why a variety of activity is recommended. As well as exercising different parts of your body, you may decide to try something a bit different simply because it is more exciting or challenging, or to widen your social circle.

Contact your local leisure centre or your GP practice about any initiatives in your area.

Leisure centre, health club, hired hall and outdoor activities

- Yoga
- Walking
- Swimming
- Circuit training
- Tai chi
- Hiking
- Cycling
- Linedancing
- Golf
- Exercisebiking
- Aqua aerobics
- Bowling
- Tennis

Home activities

- Cleaning
- Gardening
- Walking to the shops
- Stair climbing
- Armchair exercises
- Exercise video

Group activities

- Ten pin bowling
- Rambling
- Singing in a choir
- Joining a class
- Exercisebiking
- Decorating

The talk test

To find out while doing your activity if you are gaining fitness you could try the talk test:

- If you can sing during increased activity – you could perhaps work a bit harder
- If you can talk during increased activity – that’s about right!

Always warm up before exercise and stretch out afterwards.

Finding the right balance is important because it is something that you need to do for a long time, not just for a few months. Take time to experiment and be flexible to change your activity habits to suit the rest of your life.

Activity is healthy, fun, sociable, and normal and doesn’t have to be expensive. Start slowly and increase gradually. Try new activities and get fit for life!

Physical activity and ill health

If you take medication for your diabetes (excluding Metformin) and especially if you are on insulin, you may need to take extra precautions to prevent hypoglycaemia (low blood glucose) see page 24. Always carry glucose tablets with you and make sure you have identification to say you have diabetes.

Some people may already have some problems with their health, such as breathlessness on exertion, arthritis, or leg pain if walking distances. If you do not feel well during exercise, follow the steps below to help you decide what to do:

- If you suspect any condition, see your doctor
- If you have tightness across your chest, extreme shortness of breath, numbness or pins and needles while you are active, you must stop and consult your doctor as soon as possible
- If you are suffering from a chesty cough, a bad cold, nausea, vomiting, flu or a temperature – do not exercise until the symptoms have gone for 24 hours. Restart gently
- If in doubt – wait. One day off won’t hurt your fitness but exercising while ill can set you back a week or longer.

Blood glucose testing

Your doctor or diabetes nurse may recommend that you monitor your blood glucose level if they think this would be a helpful tool to help you manage your diabetes. This may be for a short period of time following your diagnosis of diabetes to help you understand what can affect your blood glucose levels, e.g. food, activity and medication.

Many people on diet or tablets may not need to monitor their blood glucose.

Times when monitoring may be undertaken include:

- To find out if a change of medication is required
- To monitor a medication change
- Where hypoglycaemia is suspected
- Where blood glucose control is poor
- If you need to take steroid medication

Blood glucose monitoring need not be performed if:

- Your diabetes is treated effectively by diet alone
- Your diabetes control is stable, as indicated by blood tests when you attend the clinic
- Your diabetes is treated with metformin or glitazones and hypoglycaemia is unlikely

How do I monitor my blood glucose?

Your GP or nurse may provide you with a meter or recommend one to you and show you how to correctly check your blood glucose.

If you are unsure about using your blood glucose meter, helpline telephone advice is available for all meters. When you first get your blood glucose meter it is important that you complete the warranty card and return it to the company.

What if I'm worried about checking my blood glucose?

Blood glucose meters are small and simple to use. Many people may worry about having to do blood tests. Some of the worries might be about the pain of drawing blood from the fingers or fear of getting a high reading. These anxieties are normal and understandable. Anyone who is worried about doing blood tests should talk to their doctor or nurse. If you have difficulty in maintaining stable blood glucose levels, speak with your healthcare provider who will be able to offer advice.

Why test my blood glucose?

Blood testing is the best method of being in control of your diabetes because it tells you what is happening immediately. It can help determine if you are at risk of a hypo (low blood glucose) or hyper (high blood glucose). See page 24, 'What is a hypo'.

Blood glucose control is very important for people with diabetes. People with diabetes have an increased risk of developing a number of conditions: heart, kidney and eye disease, nerve damage, stroke and poor circulation. The risk of health problems caused by diabetes can be reduced if your blood glucose level is regularly 4-7 mmol/l before meals and 8-10 mmol/l after meals. However, individual targets should be discussed with your healthcare professional.

When you have a diabetes check-up, a blood sample for HbA1c is taken – this is a blood test that lets you know what your average blood sugar has been over the previous three months. A result of around 53 mmol/mol is desirable to reduce the risk of health problems associated with diabetes.

What do I do if my blood glucose is high?

If your blood glucose level is consistently above the target set by your diabetes team you may be at increased risk of health problems caused by diabetes. You may require a change in your medication or advice about avoiding hyperglycaemia. Contact your diabetes care team or GP for advice if your blood glucose is often above target.

What do I do if my blood glucose is low?

If your blood glucose level is below 4 mmol/l and you take medication for your diabetes (except Metformin) you are at risk of hypoglycaemia. You may require a change in your medication or advice about diet or lifestyle to avoid hypoglycaemia in the future. Contact your diabetes care team for advice if your blood glucose is often below 4.0 mmol/l. See page 24.

When should I test my blood glucose?

The frequency of blood testing will be discussed with you by your doctor or nurse, and information will be given according to your individual needs. A general guideline is given below.

If your diabetes is treated with tablets, test two days a week before meals, or two hours after a meal. You should record your results along with a diet diary to help you and your healthcare professional assess how well your diabetes is being managed.

If your diabetes is treated with insulin, test your blood as recommended by your health care professional (to ensure blood glucose levels are at target).

When should I test my blood glucose more often?

After change of treatment

Test more often to ensure your blood glucose level is within your target levels. Your target levels should be discussed at the time of the consultation.

Illness

Your blood glucose may change in response to illness – if this happens, test more often. You may require a change in treatment. Discuss sick day rules with your diabetes care team.

Steroid therapy

Test your blood glucose more often, as steroids may increase it and you may require a change in treatment.

Preconception and pregnancy

Test more often. Blood glucose levels of 4-6 mmol/l are desirable before and during pregnancy.

It is essential to contact your diabetes care team for advice if you are planning a pregnancy or as soon as you know you are pregnant as specialist advice is necessary.

Speak to your healthcare professional for a referral to the diabetes antenatal service. Ideally, you should start pregnancy planning at least three months before trying to conceive; this includes taking 5mg of Folic acid that your GP will prescribe for you.

What is Hypoglycaemia? (Low Blood Glucose)

Hypoglycaemia or 'a hypo' is a low blood glucose level (less than 4 mmols). It will not occur if you are treated by diet alone or Metformin (Biguanide) tablets.

Symptoms of hypos include:

- Sweating
- Dizziness
- Trembling
- Hunger
- Confusion.

Common causes of hypos are:

- Delayed or missed meals
- Too large a dose of tablets or insulin
- Extra exercise or activity
- Excessive alcohol intake

How to treat a hypo

Take sweet food or drink such as:

- 3 glucose tablets
- 90 – 120 ml (a small glass) of Lucozade, Coke or Lemonade
- Tea with 2 teaspoons of sugar

This should be followed with a snack containing complex carbohydrate, e.g. bread or plain biscuits.

How do I stay healthy with diabetes?

- Attend all your clinic appointments where you will receive help and advice as well as screening for any complications that can then be treated promptly
- Blood Glucose Monitoring (only if you have been instructed to do so) – your diabetes nurse or practice nurse will show you how to do this if necessary (see page 20)
- Take all medication as directed
- Eat a healthy diet (see page 8)
- Try to maintain a healthy weight
- Increase your physical activity in the day – keep active as this helps to reduce your blood glucose levels and has other general health benefits (see page 16)
- Do not smoke – smoking significantly increases the risk of complications of diabetes, especially heart disease (see page 27)
- Keep to sensible amounts of alcohol (see page 14)
- Have your eyes screened regularly (see page 26)
- Inspect your feet daily (see page 28)
- Blood pressure control is very important for people with diabetes – you may require medication to control this.

How can I reduce my risk of complications?

The main aim of treatment of both types of diabetes is to relieve high blood glucose symptoms, and achieve blood glucose and blood pressure levels as near to normal as possible. This, together with a healthy lifestyle, will help to improve wellbeing and protect against long-term damage to the eyes, kidneys, nerves, heart and major arteries.

People with diabetes have a higher chance of developing certain serious health problems, such as:

- heart disease
- stroke
- high blood pressure
- circulation problems
- nerve damage
- kidney damage
- eye damage
- sexual dysfunction

The risk is particularly high for people with diabetes who are also very overweight, who might smoke or who are not physically active

You will greatly reduce your risk of developing any of these complications by controlling your blood glucose, blood pressure and cholesterol levels. Taking your prescribed medication is essential to achieve this control. Eating healthily and doing regular physical activity will help greatly.

Regular medical check-ups

It is important to have regular medical check ups every year. Your doctor can detect any complications at an early stage so they can be treated more successfully. You will receive an annual appointment from the diabetes retinopathy screening service. This is to take a picture of your retina at the back of your eyes and to monitor any changes in your eyes from your diabetes year on year. It is very important to attend all appointment for your diabetes.

Help yourself to stay fit and healthy

If you have diabetes, you will have to make some changes to your way of life. By sticking to your treatment, monitoring your condition and following a generally healthy lifestyle, you should be able to continue your normal, day-to-day life and take part in the activities you have always enjoyed. You may need to change your eating habits, making sure your food is low in sugar and fat and high in fibre.

Stop smoking

If you smoke – stop now!

Smoking is particularly dangerous for people with diabetes as it greatly increases the chance of developing serious health problems with your blood vessels and nerves. If you smoke, it is very important that you try to stop. There is help available from the NHS if you would like to quit. See your GP for more advice.

Physical activity

It is a good idea to take some form of regular physical activity, such as walking, swimming, dancing or cycling. Consult your doctor or diabetes nurse before taking up any regular activity, particularly if you are overweight. See page 16

Follow your treatment plan

It is very important that you follow the treatment that your doctor or diabetes nurse has advised. You will feel much better if you keep your blood glucose levels as near normal as possible.

Foot care

Diabetes is a lifelong condition that can cause foot problems. Some of these problems occur because the nerves and blood vessels supplying your feet can become damaged leading to:

- Reduced feeling in the feet
- Poor circulation to the feet
- Poor healing

To avoid these long-term problems, the most important factor is good control of your blood sugar levels.

Choosing footwear

Badly fitting shoes can cause problems for the feet such as blisters, corns, hard skin and foot ulcers

A good shoe has:

- Space for your toes
- Soft uppers which allow the feet to breathe and do not rub the skin
- Lacing, Velcro or buckle fastening that stops the foot sliding forward in the shoe
- A low heel

When buying shoes:

- Have your feet measured by a trained shoe fitter
- Use the correct shoes for your chosen activity
- Buy shoes in the afternoon because your feet may swell slightly during the day
- Take time to decide if they are suitable
- New shoes should be worn for short periods at first to avoid blisters or chafing
- Footwear adjustments or special insoles may be required and can be arranged through a specialist podiatrist

AVOID:

- Pointed shoes with narrow toes
- Shoes with stitching or seams inside which may rub the skin
- High heels
- Court shoes

Hosiery should be:

- Well fitting
- Without holes, rough seams or tight elastic
- Changed daily

For further treatment and advice consult your registered podiatrist at your local community clinic.

**Tips for preventing diabetic foot problems:
The Dos and Don'ts****DOs**

- Examine your feet daily for cuts, bruises, chaffed skin or any other problems
- Wash and dry your feet daily
- Wash your feet in tepid water (not hot) and always check the temperature of the water with your hand or elbow before bathing
- Have your feet measured before buying new shoes to ensure they are a good fit
- Get shoes with thick soles so that there is plenty of cushioning under your feet
- Your shoes should also have straps, laces or Velcro to hold them snugly at the back but make sure there is plenty of room for your toes at the front of the shoe
- When in the sun always use high factor sunscreen on your feet and always wear suitable footwear to protect them
- Report any sign of infection, throbbing, discolouration or discharge to your podiatrist or to your GP

DON'Ts

- Avoid direct heat to your feet (for instance from hot water bottles or electric blankets) and never sit too close to electric, gas, coal or other types of fires
- Never walk barefoot including on hot sand and pebbles
- Never cut corns or hard skin yourself
- Never use 'corn cures'
- Avoid shoes that have seams or rough edges on the inside (check with your hand)

Practical experiences of living with diabetes: from diagnosis onwards

Being diagnosed with diabetes and thinking about what this means for you in the longer term may feel overwhelming and confusing. There is a lot of important information to help you understand what diabetes is and how it is best managed. However, we know that living with diabetes on a daily basis can occasionally be challenging.

We have gathered together some common experiences and challenges that other people with type 2 diabetes have experienced and examples of how they have overcome these.

You've been told you have diabetes. What now?

People's immediate response to their diagnosis is hugely varied. For some people, finding out that they have diabetes can be a relief, especially if they have previously been feeling unwell and were anxious to know what was causing this. For others, feelings of shock, anger, guilt and fear can be experienced. If you have felt any of the above, it could be helpful if you speak to family or friends, or somebody at the clinic about this, as it can be more difficult to keep yourself motivated if you are dealing with this on your own.

Support from family, friends and healthcare professionals

Where it is possible, people may find it helpful to involve family members in their diabetes. This has included support in changing their diet and getting involved in exercise. Family and friends may not know very much about diabetes themselves, so sharing some of this information could help answer some of their questions and enable them to understand and support you.

Some people have received unhelpful comments from family and friends about having a lack of self-control or being lazy. Such comments are likely to increase the person's stress levels and may make it harder to make healthy changes.

Although you are responsible for the vast majority of daily diabetes management, it is important that you maintain contact with a healthcare professional who will monitor your long-term blood glucose and provide education, support and encouragement.

Feeling deprived of food

Eating carefully can keep blood glucose as close to normal as possible. However, changing eating habits can be difficult, especially when you may experience pressure from others or feel that you have to give up favourite foods. Some people have discussed how they can feel deprived and guilty at the same time. It is important to remember that there are no 'forbidden' foods. Fitting foods into a plan for healthy eating ensures that you can still enjoy your favourite foods and maintain a balanced diet. Some people have also found a change in their taste for sweet things over time, e.g. no longer liking the taste of sugar in their tea.

Getting active

Increasing the amount of physical activity that you do can seem like quite a challenge. For this to be successful over the longer term, try building on activities that you already enjoy, e.g. if you hate going to the gym it is very unlikely that you will maintain motivation over time. Why not get a pedometer that measures the amount of steps you take in a day and try and gradually increase them to 10,000 a day.

Driving and diabetes

If you drive (group 1) and are treated by diet or tablets you do not need to inform the DVLA. If your diabetes treatment involves insulin then you must inform the DVLA of this. If you drive a bus or lorry (group 2) and take any medication for your diabetes you must inform the Driver and Vehicle Licensing Agency (DVLA).

For up-to-date information on driving and diabetes go to:
<https://www.diabetes.org.uk/guide-to-diabetes/life-with-diabetes/driving>

Overall, living with diabetes does not prevent you from leading a full, enjoyable and healthy life. You may face any (or none) of the above challenges and develop your own ways of dealing with them. If, after reading any of this information, you have any questions, please do not hesitate to talk about these at your next appointment.

For questions or problems relating to your diabetes please contact your hospital or GP diabetes clinic.

Courses for type 2 diabetes

DESMOND (Diabetes Education for Self-Management of Ongoing and Newly Diagnosed)

This is a community-based group education programme for people who have been newly diagnosed with type 2 diabetes up to a year previously. These courses are currently being offered in venues across Edinburgh and the Lothians.

The DESMOND course offers practical skills for managing diabetes, taking into account your own personal lifestyle and circumstances. You will also be able to meet and talk with others in the same situation.

Your GP or practice nurse can refer you to this programme.

For more information you can also access the DESMOND website on <https://www.desmond-project.org.uk/>

Helpful information for newly diagnosed Type 2 diabetic patients

NHS Lothian

www.nhslothian.scot.nhs.uk/diabetes

Information on diabetes clinics in Lothian Helpful advice for patients

Emergency contact numbers

The latest news and events in the diabetes calendar

My Diabetes My Way

mydiabetesmyway@nhs.net

Find out how to take control of your diabetes

See how diabetes affects your body and lifestyle

Access a wide range of leaflets, videos, educational tools and games

Sign up to access your own diabetes information

Diabetes UK

https://www.diabetes.org.uk/in_your_area/scotland

Diabetes UK is the leading charity that cares for, connects with and campaigns on behalf of every person affected by or at risk of diabetes. They provide information, help and peer support so people with diabetes can manage their condition effectively. They offer a service call Helpline Scotland which provides specialist information on aspects of living with diabetes. You can get in touch for answers, support or just to talk to someone who know diabetes.

Call 0141 212 8710 Monday to Friday, 9am-7pm or

Email: helpline.scotland@diabetes.org.uk

Weight Management

<https://apps.nhslothian.scot/refhelp/WeightManagement/>

If you would like to learn more about any of the weight management programmes in your area, you can visit the website for more information or speak to your health care professional about referring you to the service

Tel: 0131 537 9169

Email: weight.managment@nhslothian.scot.nhs.uk

Fitness Facilities

Fit for Health – Edinburgh

<http://about.edinburghleisure.co.uk/what-we-do/physical-activity-health/fit-for-health/>

Active Choices – East Lothian

https://www.eastlothian.gov.uk/site_search/results/?q=active+choices

Active Midlothian

<http://www.activemidlothian.org.uk/healthy-lifestyles/>

Xcite – West Lothian

<http://www.westlothianleisure.com/>

Paths for All – Walking for Health

<http://.pathsforall.org.uk/walking-for-health>



Interpretation and Translation

This leaflet may be made available in a larger print, Braille or your community language.

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