

Type 1 diabetes This type of diabetes is also referred to as insulin-dependent diabetes. People with Type 1 diabetes must take insulin or other medications daily. This makes up for the insulin not being produced by the body.

Type 1 diabetes was previously known as juvenile diabetes because it,Äs usually diagnosed in children and young adults. However, this chronic, lifelong condition can strike at any age. People with a family history of Type 1 diabetes have a greater risk of developing it. What is Diabetes? Health risks for Type 1 diabetes Type 1 diabetes develops when the body,Äs immune system attacks and destroys cells in the pancreas that make insulin.

Once these cells are destroyed, the pancreas produces little or no insulin, so glucose stays in the blood. When there,Äs too much glucose in the blood, especially for prolonged periods, the organ systems in the body suffer long-term damage. How diabetes develops Type 2 diabetes Type 2 diabetes is the most common form of diabetes. Type 2 diabetes has historically been diagnosed primarily in adults. But adolescents and young adults are developing Type 2 diabetes at an alarming rate because of family history and higher rates of obesity and physical inactivity ,Ä risk factors for Type 2 diabetes.

This type of diabetes can occur when:

The body develops ,Äinsulin resistance,Ä and can,Ät efficiently use the insulin it makes.

The pancreas gradually loses its capacity to produce insulin.

In a mild form, this type of diabetes can go undiagnosed for many years. That,Äs cause for concern since untreated diabetes can lead to many serious medical problems including cardiovascular disease.

Type 2 diabetes may be delayed or controlled with diet and exercise.

With the exception of gestational diabetes, diabetes that happens for the first time during pregnancy, once a body becomes diabetic, diet and health management will be a life-long process.

If you,Äve been diagnosed with diabetes, it,Äs important to follow your health care professional,Äs recommendations and take all medications as directed. It,Äs also important to commit to making healthy diet and lifestyle changes that can help manage your condition and slow its progression. Types of diabetes None None Precursors to diabetes Insulin resistance Insulin resistance occurs when the body makes insulin but can,Ät use it efficiently. This means that glucose builds up in the bloodstream instead of being used by cells.

To reduce the high blood sugar levels, the insulin-producing cells in the pancreas release more and more insulin to try to keep blood sugar levels normal. Gradually, these cells fail to keep up with the body,Äs need for insulin. As a result, blood sugar levels begin to rise.

When a fasting person has too much glucose in the blood (hyperglycemia) or too much insulin in the blood (hyperinsulinemia), they may have insulin resistance. Health risks of insulin resistance People with insulin resistance are at greater risk of developing prediabetes, Type 2 diabetes and cardiovascular disease.

People with insulin resistance are more likely to have a history of being obese and physically inactive. They are also likely to have other cardiovascular risk factors such as too much LDL (bad) cholesterol, not enough HDL (good) cholesterol, high triglycerides and high blood pressure.

That's why it's important to be aware of diabetes risk factors and take steps to prevent diabetes. Prediabetes Prediabetes means the body is having trouble getting your blood sugar down to a healthy range, but it hasn't yet reached the level of Type 2 diabetes.

If you've been told by your doctor that you have prediabetes, you can reduce your risk of developing Type 2 diabetes by improving your diet, increasing your physical activity and losing weight if you are overweight.

Non-modifiable risk factors for Type 2 diabetes
Modifiable risk factors for Type 2 diabetes

Healthy Living Tips for People with

Diabetes

Type 1 diabetes Type 1 diabetes (previously known as insulin-dependent, juvenile or childhood-onset) is characterized by deficient insulin production and requires daily administration of insulin. In 2017 there were 9 million people with type 1 diabetes; the majority of them live in high-income countries. Neither its cause nor the means to prevent it are known. Key facts Type 2 diabetes Type 2 diabetes affects how your body uses sugar (glucose) for energy. It stops the body from using insulin properly, which can lead to high levels of blood sugar if not treated.

Over time, type 2 diabetes can cause serious damage to the body, especially nerves and blood vessels.

Type 2 diabetes is often preventable. Factors that contribute to developing type 2 diabetes include being overweight, not getting enough exercise, and genetics.

Early diagnosis is important to prevent the worst effects of type 2 diabetes. The best way to detect diabetes early is to get regular check-ups and blood tests with a healthcare provider.

Symptoms of type 2 diabetes can be mild. They may take several years to be noticed. Symptoms may be similar to those of type 1 diabetes but are often less marked. As a result, the disease may be diagnosed several years after onset, after complications have already arisen.

More than 95% of people with diabetes have type 2 diabetes. Type 2 diabetes was formerly called non-insulin dependent, or adult onset. Until recently, this type of diabetes was seen only in adults but it is now also occurring increasingly frequently in children. Overview Gestational

diabetes Gestational diabetes is hyperglycaemia with blood glucose values above normal but below those diagnostic of diabetes. Gestational diabetes occurs during pregnancy.

Women with gestational diabetes are at an increased risk of complications during pregnancy and at delivery. These women and possibly their children are also at increased risk of type 2 diabetes in the future.

Gestational diabetes is diagnosed through prenatal screening, rather than through reported symptoms. Symptoms Impaired glucose tolerance and impaired fasting glycaemia Impaired glucose tolerance (IGT) and impaired fasting glycaemia (IFG) are intermediate conditions in the transition between normality and diabetes. People with IGT or IFG are at high risk of progressing to type 2 diabetes, although this is not inevitable. Prevention Diagnosis and treatment Early diagnosis can be accomplished through relatively inexpensive testing of blood glucose. People with type 1 diabetes need insulin injections for survival.

One of the most important ways to treat diabetes is to keep a healthy lifestyle.

Some people with type 2 diabetes will need to take medicines to help manage their blood sugar levels. These can include insulin injections or other medicines. Some examples include:

metformin

sulfonylureas

sodium-glucose co-transporters type 2 (SGLT-2) inhibitors.

Along with medicines to lower blood sugar, people with diabetes often need medications to lower their blood pressure and statins to reduce the risk of complications.

Additional medical care may be needed to treat the effects of diabetes:

foot care to treat ulcers

screening and treatment for kidney disease

eye exams to screen for retinopathy (which causes blindness). WHO

response WHO aims to stimulate and support the adoption of effective measures for the surveillance, prevention and control of diabetes and its complications, particularly in low- and middle-income countries. To this end, WHO:

provides scientific guidelines for the prevention of major

noncommunicable diseases including diabetes;

develops norms and standards for diabetes diagnosis and care;

builds awareness on the global epidemic of diabetes, marking World Diabetes Day (14 November); and

conducts surveillance of diabetes and its risk factors.

In April 2021 WHO launched the Global Diabetes Compact, a global initiative aiming for sustained improvements in diabetes prevention and care, with a particular focus on supporting low- and middle-income countries.

In May 2021, the World Health Assembly agreed a Resolution on strengthening prevention and control of diabetes. In May 2022 the World Health Assembly endorsed five global diabetes coverage and treatment targets to be achieved by 2030. Gestational diabetes develops in pregnant women who have never had diabetes. If you have gestational diabetes, your baby could be at higher risk for health problems. Gestational diabetes usually goes away after your baby is born. However, it increases your risk for type 2 diabetes later in life. Your baby is more likely to have obesity as a child or teen and develop type 2 diabetes later in life. Types of Diabetes Prediabetes In the United States, 96 million adults, more than 1 in 3, have prediabetes. More than 8 in 10 of them don't know they have it. With prediabetes, blood sugar levels are higher than normal, but not high enough for a type 2 diabetes diagnosis. Prediabetes raises your risk for type 2 diabetes, heart disease, and stroke. But there's good news. If you have prediabetes, a CDC-recognized lifestyle change program can help you take healthy steps to reverse it. Type 1 Diabetes Type 2 Diabetes

How insulin works Insulin is a hormone that comes from the pancreas, a gland located behind and below the stomach. Insulin controls how the body uses sugar in the following ways:

Sugar in the bloodstream triggers the pancreas to release insulin. Insulin circulates in the bloodstream, enabling sugar to enter the cells. The amount of sugar in the bloodstream drops. In response to this drop, the pancreas releases less insulin. Symptoms The role of glucose Glucose, a sugar, is a main source of energy for the cells that make up muscles and other tissues. The use and regulation of glucose includes the following:

Glucose comes from two major sources: food and the liver. Glucose is absorbed into the bloodstream, where it enters cells with the help of insulin. The liver stores and makes glucose. When glucose levels are low, the liver breaks down stored glycogen into glucose to keep the body's glucose level within a healthy range. In type 2 diabetes, this process doesn't work well. Instead of moving into the cells, sugar builds up in the blood. As blood sugar levels rise, the pancreas releases more insulin. Eventually the cells in the pancreas that make insulin become damaged and can't make enough insulin to meet the body's needs. When to see a doctor Risk factors Factors that may increase the risk of type 2 diabetes include:

Weight. Being overweight or obese is a main risk. Fat distribution. Storing fat mainly in the abdomen, rather than the hips and thighs, indicates a greater risk. The risk of type 2 diabetes is higher in men with a waist circumference above 40 inches (101.6 centimeters) and in women with a waist measurement above 35 inches (88.9 centimeters). Inactivity. The less active a person is, the greater the risk. Physical activity helps control weight, uses up glucose as energy and makes cells more sensitive to insulin.

Family history. An individual's risk of type 2 diabetes increases if a parent or sibling has type 2 diabetes.

Race and ethnicity. Although it's unclear why, people of certain races and ethnicities, including Black, Hispanic, Native American and Asian people, and Pacific Islanders, are more likely to develop type 2 diabetes than white people are.

Blood lipid levels. An increased risk is associated with low levels of high-density lipoprotein (HDL) cholesterol, the "good" cholesterol, and high levels of triglycerides.

Age. The risk of type 2 diabetes increases with age, especially after age 35.

Prediabetes. Prediabetes is a condition in which the blood sugar level is higher than normal, but not high enough to be classified as diabetes.

Left untreated, prediabetes often progresses to type 2 diabetes.

Pregnancy-related risks. The risk of developing type 2 diabetes is higher in people who had gestational diabetes when they were pregnant and in those who gave birth to a baby weighing more than 9 pounds (4 kilograms).

Polycystic ovary syndrome. Having polycystic ovary syndrome, a condition characterized by irregular menstrual periods, excess hair growth and obesity, increases the risk of

diabetes. Causes Complications Type 2 diabetes affects many major organs, including the heart, blood vessels, nerves, eyes and kidneys. Also, factors that increase the risk of diabetes are risk factors for other serious diseases. Managing diabetes and controlling blood sugar can lower the risk for these complications and other medical conditions, including:

Heart and blood vessel disease. Diabetes is associated with an increased risk of heart disease, stroke, high blood pressure and narrowing of blood vessels, a condition called atherosclerosis.

Nerve damage in limbs. This condition is called neuropathy. High blood sugar over time can damage or destroy nerves. That may result in tingling, numbness, burning, pain or eventual loss of feeling that usually begins at the tips of the toes or fingers and gradually spreads upward.

Other nerve damage. Damage to nerves of the heart can contribute to irregular heart rhythms. Nerve damage in the digestive system can cause problems with nausea, vomiting, diarrhea or constipation. Nerve damage also may cause erectile dysfunction.

Kidney disease. Diabetes may lead to chronic kidney disease or end-stage kidney disease that can't be reversed. That may require dialysis or a kidney transplant.

Eye damage. Diabetes increases the risk of serious eye diseases, such as cataracts and glaucoma, and may damage the blood vessels of the retina, potentially leading to blindness.

Skin conditions. Diabetes may raise the risk of some skin problems, including bacterial and fungal infections.

Slow healing. Left untreated, cuts and blisters can become serious infections, which may heal poorly. Severe damage might require toe, foot or leg amputation.

Hearing impairment. Hearing problems are more common in people with diabetes.

Sleep apnea. Obstructive sleep apnea is common in people living with type 2 diabetes. Obesity may be the main contributing factor to both conditions.

Dementia. Type 2 diabetes seems to increase the risk of Alzheimer's disease and other disorders that cause dementia. Poor control of blood sugar is linked to a more rapid decline in memory and other thinking skills.

Prevention

Maybe it,Äs a different type

Gestational diabetes

Diet Is Your Friend

As with all forms of diabetes, diet and exercise can help you gain the upper hand. With gestational diabetes, maintaining a balanced diet is integral to your success. Your doctor can help you develop a meal plan that makes sense for you, helping you identify the best foods and quick meal ideas that can help you stay healthy and strong.

Up to 10 percent of pregnancies in the U.S. are affected by gestational diabetes every year. So know that you,Äre not alone.

Exercise Is Your Friend

Exercise is critical as well. Work with your doctor to determine the level of activity that,Äs safe for you and your baby throughout your pregnancy. Use our resources as well to stay in touch with ideas for daily activity. The important thing to remember is to take action as quickly as you can, to stay with it, and to stay on top of your condition. It,Äs treatable. It,Äs manageable. And it,Äs a fight that you can win.

We don,Ät know what causes gestational diabetes,Ä¶

Diabetes in Pregnancy

Professional Resources

Women with a history of gestational diabetes have an increased risk for recurrent diabetes in subsequent pregnancies and a 10-fold risk of developing type 2 diabetes as they age (compared to women without gestational diabetes). To address this growing problem, the Women,Äs Health Initiative offers a free online continuing education course and supporting resources essential for midwives, doulas, community health workers, and other diabetes care professionals on screening, treating, and monitoring gestational diabetes.

How You Can Treat It

Diabetes in Pregnancy

Gestational Diabetes

Women,Äs Health Initiative

Continuing Education

Diabetes Complications

Let,Äs Get Serious About Diabetes

Diabetes Complications Explained

Watch out for the symptoms of CVD.

Shortness of breath

Fatigue

Pain in your: chest (angina), throat, back, legs, neck, jaw, upper abdomen, arms.

Weakness or numbness in your arms or legs

Cardiovascular Disease

Take emergency action.

If you feel any of the following symptoms, call 911 immediately to prevent further damage to your heart, brain, and blood vessels.

Heart Attack:

Chest pain or discomfort, tightness, pressure

Fullness,Äthis might feel like indigestion or heartburn

Discomfort in one or both of your arms, back, jaw, neck, or upper abdomen

Shortness of breath

Sweating

Indigestion, nausea, or vomiting

Tiredness, fainting, or light-headedness

Heart Failure:

Shortness of breath

Weakness

Nausea

Quick or irregular heartbeat

Coughing with pink-tinged mucus

Fatigue

Swelling of the feet and ankles (from fluid retention)Of diabetes complications, this is one you want to pay close attention to. Stay on top of your heart health.The best way to maintain your heart health is to manage your diabetes. Try to keep your blood glucose (blood sugar) in-range for as long and as often as you can. Diet, exercise, taking your insulin and medication as prescribed, attending your doctor visits, and seeking support from medical professionals, family, and friends will all help you get there.

In the meantime, it,Âs best to frequently check your A1C, LDL, and blood pressure.

At every office visit:

Check your blood pressure

Talk about your blood glucose meter readings. Take along your meter/logbook

Check your weight and talk about ways to reach a healthy weight

Talk about what you eat

Discuss any lifestyle, work, or emotional changes

Discuss your physical activity

If you smoke, talk about ways to quit

Remove shoes and socks to have your feet checked

Talk about all the medicine you take, including over-the-counter pills, herbs, vitamins, and other supplements

Ask if you should take aspirin to lower your chances of having a heart attack

Ask any remaining questions you have about your diabetes care

Every three to six months, have your A1C checked by your doctor. A1C gives your average blood glucose over the past two to three months. eAG is your A1C reported in the numbers your blood glucose meter shows.

Once a year, have a dilated eye exam to check for eye problems, get a flu shot, and have a complete foot exam.

Every five years, have your cholesterol checked,Âand check more often if it,Âs not on target.What are the different types of CVD?Live heart-healthy!Exercise,ÂThe optimal time you should spend per week exercising is 150 minutes. You can break this up however you like over the week and be sure to do exercises you enjoy! The best type of exercise is the one you,Âll actually do

Sit less,ÂSitting less and exercising go hand-in-hand. Get up and walk around every 30 minutes to get your heart pumping.

Manage weight,ÂIf you,Âre already at a healthy weight for your age and height, you,Âre good to go! If needed though, losing even 10,Â15 pounds makes a big difference.

Take medication,ÂTaking your medications as directed by your doctor is one of the best defenses against CVD. If you have trouble remembering, try setting an alarm or use a pill box.

Eat well,ÂUse the Diabetes Plate Method to create healthy portions without thinking about it,Âthe method does all the thinking for you!

Manage stress,ÂMental health is extremely important if you live with diabetes for your emotional and physical well-being. Stress hormones can lead to high blood pressure and make it more difficult to have good diabetes management.

Follow up with your care team,ÂCommunicate with your care team, and yourself, to get the best care you can from the health professionals dedicated to your wellness.

Attend a diabetes education class,ÂLearn how to manage your diabetes confidently and independently with the expert guidance (often covered by insurance) of health professionals.

Sleep better,ÂGet those six to eight hours of restful sleep to reduce stress hormones and feel your best to tackle the days ahead.

Know your numbers,ÂUse a log or chart to keep track of numbers like your A1C, blood pressure, blood glucose, and cholesterol.

NoneNoneNone NoneNone NoneNone What are the symptoms?The kidneys work hard to make up for the failing capillaries, so kidney disease produces no symptoms until almost all function is gone. Also, the symptoms of kidney disease are not specific. The first symptom of kidney disease is often fluid buildup. Other symptoms of kidney disease include loss of sleep, poor appetite, upset stomach, weakness, and difficulty concentrating.

It is vital to see a doctor regularly. The doctor can check blood pressure, urine (for protein), blood (for waste products), and organs for other complications of diabetes.Chronic Kidney Disease (Nephropathy)How can I prevent it?Diabetes-related kidney disease can be prevented by keeping blood glucose in your target range. Research has shown that tight blood glucose management reduces the risk of microalbuminuria by one third. In people who already had microalbuminuria, the risk of progressing to macroalbuminuria was cut in half. Other studies have suggested that tight management can reverse microalbuminuria.How does diabetes cause kidney disease?Treatments for Kidney DiseaseSelf-Care Important treatments for kidney disease are management of blood glucose and blood pressure. Blood pressure has a dramatic effect on the rate at which the disease progresses. Even a mild rise in blood pressure can quickly make kidney disease worsen. Four ways to lower your blood pressure are:

Losing weight, if needed, or maintaining a healthy weight
Eating a kidney-friendly eating plan (see Kidney Friendly Eating Plan section below)
Avoiding alcohol and tobacco

Getting regular physical activity

Medication

In addition to these steps and your diabetes medication, certain medications lower blood pressure. There are several kinds of blood pressure drugs. Work with your health care team about other medications that may be helpful for you to lower your risk of kidney disease.

Kidney Friendly Eating Plan

You can plan a kidney-friendly meal by eating a balanced diet with a variety of whole, minimally processed foods and by following these general meal planning tips:

Choose foods lower in sodium, like whole grains and fresh or frozen fruits and vegetables. Products labeled as "low sodium" may use potassium chloride in place of sodium. Check the ingredient list to make sure you can safely eat low-sodium foods.

Choose more complex, nutrient-dense carbohydrate sources prepared without much added sugar or fat.

Choose more heart-healthy fats like olive and avocado oils.

Choose more plant-based proteins like beans, lentils, and tofu.

Talk to your health care provider about limiting fluid intake and to your registered dietitian nutritionist (RDN) about other nutrition considerations.

You may need to limit certain nutrients like sodium, potassium, and phosphorus in your eating plan. Your nutrition care plan might change over time depending on the status of your condition. Your RDN or health care provider will tell you if changes are needed based on your blood test results.

Who gets kidney disease? Kidney Failure
Once kidneys fail, dialysis is necessary. The person must choose whether to continue with dialysis or to get a kidney transplant. This choice should be made as a team effort. The team should include your doctor, diabetes educator, RDN, a nephrologist (kidney doctor), a kidney transplant surgeon, a social worker, and a psychologist.
NoneNoneNone NoneNone
NoneNone NoneNoneDiabetes and Peritoneal DialysisNoneNonePD and
DiabetesNoneNoneBlood Glucose and Diabetes

MedicationsNoneNoneNoneNoneNone NoneNone NoneNone NoneNoneDiabetes, High
Blood Pressure, and Chronic Kidney Disease (CKD)NoneNoneKnowing Your Risk
FactorsNoneNonePreventing and Delaying CKDNoneNoneNoneNoneNone NoneNone
NoneNone NoneNoneUnderstanding Neuropathy and Your

DiabetesNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone
NoneNoneSteps to Prevent or Delay Nerve DamageNoneNoneKeep Your Blood
Glucose (Blood Sugar) Levels in Your Target

RangeNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone The basics of
foot complicationsNeuropathy

Although it can hurt, diabetic nerve damage can also lessen your ability to feel pain, heat, and cold. Loss of feeling often means you may not feel a foot injury. You could have a tack or stone in your shoe and walk on it all day without knowing. You could get a blister and not feel it. You might not notice a foot injury until the skin breaks down and becomes infected.

Nerve damage can also lead to changes in the shape of your feet and toes. If your foot doesn't fit comfortably in regular shoes, ask your doctor about special therapeutic shoes or inserts, rather than forcing your feet and toes into shoes that don't fit and can cause more damage.

Skin changes

Diabetes can cause changes in the skin of your foot. At times your foot may become very dry. The skin may peel and crack. This problem is caused by nerve damage that affects your body's ability to control the oil and moisture in your foot.

After bathing, dry your feet and seal in the remaining moisture with a thin coat of plain petroleum jelly, an unscented hand cream, or other such products. Do not put oils or creams between your toes. The extra moisture can lead to infection. Also, don't soak your feet, that can dry your skin.

Calluses

Calluses occur more often and build up faster on the feet of people with diabetes. This is because there are high-pressure areas under the foot. Too much callus may mean that you will need therapeutic shoes and inserts.

Calluses, if not trimmed, get very thick, break down, and turn into ulcers (open sores). Never try to cut calluses or corns yourself, this can lead to ulcers and infection. Let a health care professional on your diabetes care team cut your calluses. Also, do not try to remove calluses and corns with chemical agents. These products can burn your skin.

Using a pumice stone every day will help keep calluses under control. It is best to use the pumice stone on wet skin. Put on lotion right after you use the pumice stone.

Poor circulation

Poor circulation (blood flow) can make your foot less able to fight infection and to heal. Diabetes causes blood vessels of the foot and leg to narrow and harden. You can control some of the things that cause poor blood flow. Don't smoke; smoking makes arteries harden faster. Also, follow your diabetes care team's advice for keeping your blood pressure and cholesterol under control.

If your feet are cold, you may want to warm them. Keep aware that, unfortunately, if you have nerve damage, your feet may not be able feel heat properly and it is easy for you to burn them with hot water, hot water bottles, or heating pads. The best way to warm cold feet is to wear warm socks.

Some people feel pain in their calves when walking fast, up a hill, or on a hard surface. This condition is called intermittent claudication. Stopping to rest for a few moments should end the pain. If you have these symptoms, you must stop smoking. Work with your diabetes care team to get started on a walking program. Some people can also be helped with medication to improve circulation.

Exercise is good for poor circulation. It stimulates blood flow in the legs and feet. Walk in sturdy, comfortable shoes that fit comfortably, but don't walk when you have open sores on your feet.

Foot ulcers

Ulcers occur most often on the ball of the foot or on the bottom of the big toe. Ulcers on the sides of the foot are usually due to poorly fitting shoes. Remember, even though some ulcers do not hurt, every ulcer should be seen by your doctor right away. Neglecting ulcers can result in infections, which in turn can lead to loss of a limb.

What your doctor will do varies with your ulcer. Your doctor may need to take x-rays of your foot to make sure the bone is not infected. The ulcer may also need to have any dead and infected tissue cleaned out. You may need to go into the hospital for this cleaning. Also, a culture of the wound may be used to find out what type of infection you have and which antibiotic will work best.

Keeping off your feet is very important. Walking on an ulcer can enlarge it and force the infection deeper into your foot. Your doctor may put a special shoe, brace, or cast on your foot to protect it.

If your ulcer is not healing and your circulation is poor, you may be referred to a vascular surgeon. Managing diabetes is important since high blood glucose (blood sugar) levels make it hard to fight infection.

After a foot ulcer heals, treat your foot carefully. Scar tissue from the wound will break down easily. You may need to wear special shoes after the ulcer is healed to protect this area and to prevent the ulcer from returning.

Amputation

People with diabetes are far more likely to have a foot or leg amputated than other people. The problem? Many people with diabetes have peripheral artery disease (PAD), which reduces blood flow to the feet. Also, many people with diabetes have neuropathy, causing you to not feel your feet. Together, these problems make it easy to get ulcers and infections that may lead to amputation. Most amputations are preventable by checking your feet daily, go to regular visits with your doctor, and wear proper footwear.

For these reasons, take good care of your feet and see your doctor right away if you see any signs of foot problems. Ask about prescription shoes that are covered by Medicare and other insurance. Always follow your doctor's advice when caring for ulcers or other foot problems.

One of the biggest threats to your feet is smoking. Smoking affects small blood vessels. It can cause decreased blood flow to the feet and make wounds heal slowly. A lot of people with diabetes who need amputations are smokers. Foot ComplicationsNoneNonePeople with diabetes can develop many different foot problems. Even ordinary problems can get worse and

lead to serious complications. Take care of your feet. Good skin care There are several things you can do to prevent skin problems:

Keep your diabetes well managed. People with high glucose levels tend to have dry skin and less ability to fend off harmful bacteria. Both conditions increase the risk of infection.

Keep skin clean and dry.

Avoid very hot baths and showers. If your skin is dry, don't use bubble baths. Moisturizing soaps may help. Afterward, use a standard skin lotion, but don't put lotions between toes. The extra moisture there can encourage fungus to grow.

Prevent dry skin. Scratching dry or itchy skin can open it up and allow infection to set in. Moisturize your skin to prevent chapping, especially in cold or windy weather.

Treat cuts right away. Wash minor cuts with soap and water. Only use an antibiotic cream or ointment if your doctor says it's okay. Cover minor cuts with sterile gauze. See a doctor right away if you get a major cut, burn, or infection.

During cold, dry months, keep your home more humid. Bathe less during this weather, if possible.

Use mild shampoos.

Do not use feminine hygiene sprays.

See a dermatologist (skin doctor) about skin problems if you are not able to solve them yourself.

Take good care of your feet. Check them every day for sores and cuts.

Wear broad, flat shoes that fit well. Check your shoes for foreign objects before putting them on.

Talk to your doctor or dermatologist if you are not able to solve a skin problem yourself. Diabetes and Skin Complications Diabetes-related skin conditions Acanthosis nigricans

Acanthosis nigricans is a condition in which tan or brown raised areas appear on the sides of the neck, armpits, and groin. Sometimes they also occur on the hands, elbows, and knees.

Acanthosis nigricans usually strikes people who are very overweight. The best treatment is to lose weight. Some creams can help the spots look better.

Diabetic dermopathy

Diabetes can cause changes in the small blood vessels. These changes can cause skin problems called diabetic dermopathy.

Dermopathy often looks like light brown, scaly patches. These patches may be oval or circular. Some people mistake them for age spots. This disorder most often occurs on the front of both legs. But the legs may not be affected to the same degree. The patches do not hurt, open up, or itch.

Dermopathy is harmless and doesn't need to be treated.

Necrobiosis lipoidica diabetorum

Another disease that may be caused by changes in the blood vessels is necrobiosis lipoidica diabetorum (NLD). NLD causes spots similar to diabetic dermopathy, but they are fewer, larger, and deeper.

NLD often starts as a dull, red, raised area. After a while, it looks like a shiny scar with a violet border. The blood vessels under the skin may become easier to see. Sometimes NLD is itchy and painful. Sometimes the spots crack open.

NLD is a rare condition. Adult women are the most likely to get it. As long as the sores do not break open, you do not need to have it treated. But if you get open sores, see your doctor for treatment.

Allergic reactions

Allergic skin reactions can occur in response to medicines, such as insulin or diabetes pills. You should see your doctor if you think you are having a reaction to a medicine. Be on the lookout for rashes, depressions, or bumps at the sites where you inject insulin.

Diabetic blisters (bullous diabetorum)

Rarely, people with diabetes erupt in blisters. Diabetic blisters can occur on the backs of fingers, hands, toes, feet, and sometimes on legs or forearms. These sores look like burn blisters and often occur in people who have diabetic neuropathy. They are sometimes large, but they are painless and have no redness around them. They heal by themselves, usually without scars, in about three weeks. The only treatment is to bring blood glucose levels under control.

Eruptive xanthomatosis

Eruptive xanthomatosis is another condition caused by diabetes that's out of control. It consists of firm, yellow, pea-like enlargements in the skin. Each bump has a red halo and may itch. This condition occurs most often on the backs of hands, feet, arms, legs, and buttocks.

The disorder usually occurs in young men with type 1 diabetes. The person often has high levels of cholesterol and fat in the blood. Like diabetic blisters, these bumps disappear when diabetes control is restored.

Digital sclerosis

Sometimes, people with diabetes develop tight, thick, waxy skin on the backs of their hands. Sometimes skin on the toes and forehead also becomes thick. The finger joints become stiff and can no longer move the way they should. Rarely, knees, ankles, or elbows also get stiff.

This condition happens to about one third of people who have type 1 diabetes. The only treatment is to bring blood glucose levels under control.

Disseminated granuloma annulare

In disseminated granuloma annulare, the person has sharply defined ring- or arc-shaped raised areas on the skin. These rashes occur most often on parts of the body far from the torso (for example, the fingers or ears). But sometimes the raised areas occur on the torso. They can be red, red-brown, or skin-colored.

See your doctor if you get rashes like this. There are medications that can help clear up this condition. Diabetes can affect every part of the body, including the skin. NoneNoneGeneral skin

conditionsNoneNoneNoneNoneNone NoneNone NoneNone NoneNoneOral

HealthNoneNoneWhat Can You Do Now?NoneNoneKnow Before You

GoNoneNoneNoneNoneNone NoneNone NoneNone What should I do if I suspect a hearing loss?Talk to your primary care doctor. You may then want to seek help from hearing specialist like an audiologist, a licensed hearing aid dispenser, or a doctor who specializes in hearing problems. From a full hearing exam, you'll learn more about your hearing loss. You will also be told what can be done to treat it.Diabetes and Hearing

LossNoneNoneDiabetes and hearing loss are two of America's most widespread health concerns.NoneNoneSigns of hearing

lossNoneNoneNoneNoneNone NoneNone NoneNone More on ketones and DKAHow do I check for ketones?

You can detect ketones with a simple urine test using a test strip, similar to a blood testing strip. Ask your health care provider when and how you should test for ketones. Many experts advise to check your urine for ketones when your blood glucose is more than 240 mg/dl.

When you are ill (when you have a cold or the flu, for example), check for ketones every four to six hours. And check every four to six hours when your blood glucose is more than 240 mg/dl.

Also, check for ketones when you have any symptoms of DKA.

What if I find higher-than-normal levels of ketones?

If your health care provider has not told you what levels of ketones are dangerous, then call when you find moderate amounts after more than one test. Often, your health care provider can tell you what to do over the phone.

Call your health care provider at once if you experience the following conditions:

Your urine tests show high levels of ketones.

Your urine tests show high levels of ketones and your blood glucose level is high.

Your urine tests show high levels of ketones and you have vomited more than twice in four hours.

Do NOT exercise when your urine tests show ketones and your blood glucose is high. High levels of ketones and high blood glucose levels can mean your diabetes is out of control. Check with your health care provider about how to handle this situation.

What causes DKA?

Here are three basic reasons for moderate or large amounts of ketones:

Not enough insulin

Maybe you did not inject enough insulin. Or your body could need more insulin than usual because of illness.

Not enough food

When you're sick, you often don't feel like eating, sometimes resulting in high ketone levels. High levels may also occur when you miss a meal.

Insulin reaction (low blood glucose)

If testing shows high ketone levels in the morning, you may have had an insulin reaction while asleep.

Diabetes & DKA
(Ketoacidosis)Diabetic ketoacidosis (DKA) is life-threatening, learn the warning signs to be prepared for any situation.
What are the warning signs of DKA?
Get serious about stroke prevention
What is a stroke?
Simple Blood Sugar Test
You can get a simple blood sugar test to find out if you have prediabetes. Ask your doctor if you should be tested.
What Is Prediabetes?
Preventing Type 2 Diabetes
If you have prediabetes, losing a small amount of weight if you're overweight and getting regular physical activity can lower your risk for developing type 2 diabetes. A small amount of weight loss means around 5% to 7% of your body weight, just 10 to 14 pounds for a 200-pound person. Regular physical activity means getting at least 150 minutes a week of brisk walking or a similar activity. That's just 30 minutes a day, five days a week.

A lifestyle change program offered through the CDC-led National Diabetes Prevention Program can help you make those changes, and make them stick. Through the program, you can lower your risk of developing type 2 diabetes by as much as 58% (71% if you're over age 60). Highlights include:

Working with a trained coach to make realistic, lasting lifestyle changes.

Discovering how to eat healthy and add more physical activity into your day.

Finding out how to manage stress, stay motivated, and solve problems that can slow your progress.

Getting support from people with similar goals and challenges.
What Causes Prediabetes?
Signs & Symptoms
Prediabetes = Prevent
diabetes
Think of prediabetes as a fork in the road. If you ignore it, your risk for type 2 diabetes goes up. Lose a modest amount of weight and get regular physical activity, and your risk goes down. Modest weight loss means 5% to 7% of body weight, just 10 to 14 pounds for a 200-pound person. Regular physical activity means getting

at least 150 minutes a week of brisk walking or similar activity. That,Âs just 30 minutes a day, five days a week.

The CDC-led National Diabetes Prevention Program (National DPP) can help people make the lifestyle changes needed to prevent or delay type 2 diabetes. Through the program, participants:

Work with a trained coach to make lasting lifestyle changes.
Discover how to eat healthy and add more physical activity into their day.
Find out how to manage stress, stay motivated, and solve problems that can slow progress.
If you have prediabetes, ask your health care provider about the National DPP lifestyle change program. The best time to prevent type 2 diabetes is now. Prediabetes Is a Big Deal
Type 1 and Type 2: Not the Same
Many people don,Ât realize that type 1 and type 2 are different kinds of diabetes.

About 90%-95% of people with diabetes have type 2; about 5% have type 1. Type 1 is thought to be caused by an immune reaction and can,Ât yet be prevented. Type 2 can be prevented or delayed through lifestyle changes. Type 1 often starts quickly and has severe symptoms; type 2 is gradual and develops over many years.
Type 1 usually occurs in children, teens, and young adults. Type 2 occurs most often in older people, but is becoming more common in children, teens, and young adults.
People with type 1 must use insulin every day to survive.
Prediabetes can develop into type 2 diabetes, but not type 1. Prediabetes Flies Under the Radar
NoneNoneDiabetes Is Harder to Live With Than PrediabetesNoneNoneNoneNoneNoneNone NoneNone NoneNone
NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone
NoneNone NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone
NoneNone NoneNone
NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone
NoneNone NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone
NoneNone NoneNone Take Care of Your Heart
These lifestyle changes can help lower your risk for heart disease or keep it from getting worse, as well as help you manage diabetes:

Follow a healthy diet. Eat more fresh fruits and vegetables, lean protein, and whole grains. Eat fewer processed foods (such as chips, sweets, and fast food) and avoid trans fat. Drink more water, fewer sugary drinks, and less alcohol.
Aim for a healthy weight. If you,Âre overweight, losing even a modest amount of weight can lower your triglycerides and blood sugar. Modest weight loss means 5% to 7% of body weight, just 10 to 14 pounds for a 200-pound person.
Get active. Being physically active makes your body more sensitive to insulin (the hormone that allows cells in your body to use blood sugar for energy), which helps manage your diabetes. Physical activity also helps control blood sugar levels and lowers your risk of heart disease. Try to get at least 150 minutes per week of moderate-intensity physical activity, such as brisk walking.
Manage your ABCs:

A: Get a regular A1C test to measure your average blood sugar over 2 to 3 months; aim to stay in your target range as much as possible.

B: Try to keep your blood pressure below 140/90 mm Hg (or the target your doctor sets).

C: Manage your cholesterol levels.

s: Stop smoking or don't start.

Manage stress. Stress can raise your blood pressure and can also lead to unhealthy behaviors, such as drinking too much alcohol or overeating. Instead, visit a mental health counselor, try meditation or deep breathing, get some physical activity, or get support from friends and family.

Your doctor may also prescribe medicines that can help keep your blood sugar, blood pressure, cholesterol, and triglycerides close to your target levels.

What Is Heart Disease? See Your Diabetes Educator

Work with a diabetes care and education specialist for help avoiding health complications such as heart disease. You'll get support and solutions and hear about the latest advances in managing diabetes. Find out more about how diabetes education can help you take the best care of yourself. And be sure to ask your doctor for a referral if you don't already have a diabetes educator.

How Diabetes Affects Your Heart

None None Testing for Heart Disease None None None None None None None None Prediabetes and Kidney Disease

If you have prediabetes, taking action to prevent type 2 diabetes is an important step in preventing kidney disease. Studies have shown that overweight people at higher risk for type 2 diabetes can prevent or delay developing it by losing 5% to 7% of their body weight, or 10 to 14 pounds for a 200-pound person. You can do that by eating healthier and getting 150 minutes of physical activity each week. CDC's National Diabetes Prevention Program lifestyle change program can help you create the healthy lifestyle habits needed to prevent type 2 diabetes.

Kidney Facts

None None How Diabetes Causes Kidney Disease None None

Tips To Keep Your Kidneys Healthy None None None None None None None None

None None None None What is the Best Way to Keep Your Kidneys Healthy?

Keep your blood pressure below 140/90, or ask your doctor what the best blood pressure target is for you.

Stay in your target cholesterol range.

Eat foods lower in salt.

Eat more fruits and vegetables.

Stay active.

Take your medications as directed.

What Happens If You Have Kidney Damage?

Who is More Likely to Develop Kidney Disease? Approximately 1 of 3 adults with diabetes and 1 of 5 adults with high blood pressure may have CKD.

In addition to diabetes and high blood pressure, other problems that put you at greater chance of kidney disease include: heart disease, obesity (being overweight), and a family history of CKD. Kidney infections and a physical injury can also cause kidney disease.

How Will You Know If You Have Kidney Problems?

What Can You Do to Prevent Kidney Failure? Get tested for CKD regularly if you are at risk.

Find it early. Treat it early.

Ask your doctor to test your blood or pee. If you have diabetes, get tested yearly.

If you have diabetes, stay in your target blood sugar range as much as possible.

Lose weight if you are overweight.

Get active. Physical activity helps control blood sugar levels.

Quit smoking.

Getting a checkup? Make sure to get your kidneys checked too.

Take medications as directed.

If you have CKD, meet with a dietitian to make a kidney-healthy eating

plan.If You Have Diabetes, Take These Steps:NoneNoneNoneNoneNone NoneNone

NoneNone Autonomic Nerve DamageAutonomic nerve damage affects your heart, bladder, stomach, intestines, sex organs, or eyes. Symptoms may include:

Bladder or bowel problems that may cause urine leakage, constipation, or diarrhea.

Nausea, loss of appetite, and vomiting.

Changes in how your eyes adjust from light to dark.

Decreased sexual response, including trouble getting an erection in men or vaginal dryness in women.Types of Nerve DamageProximal Nerve

DamageProximal nerve damage affects nerves in the thighs, hips, buttocks, or legs. It can also affect the stomach and chest area. Symptoms may include:

Severe pain in a hip and thigh or buttock.

Trouble getting up from a sitting position.

Severe stomach pain.Peripheral nerve damageFocal Nerve DamageFocal nerve damage affects single nerves, most often in your hand, head, torso, or leg. Symptoms may include:

Trouble focusing your vision or having double vision.

Aches behind one eye.

Not being able to move one side of your face (Bell,Âs palsy).

Numbness or tingling in your hands or fingers.

Weakness in your hand that may make you drop things.

Make a note if you have any of these symptoms and share them with your doctor.Nerve Damage and DigestionRisk Factors for Nerve DamageAnyone with diabetes can develop nerve damage, but these factors increase your risk:

Blood sugar levels that are hard to manage.

Having diabetes for a long time, especially if your blood sugar is often higher than your target levels.

Being overweight.

Being older than 40.

Having high blood pressure.

Having high cholesterol.Tips to Prevent or Delay Nerve DamageNoneNone

NoneNone NoneNone NoneNoneWhat Is

Gastroparesis?NoneNoneSymptomsNoneNoneTips to Manage

GastroparesisNoneNoneNoneNoneNone NoneNone NoneNone Tips for Healthy

FeetCheck your feet every day for cuts, redness, swelling, sores, blisters, corns, calluses, or any other change to the skin or nails. Use a mirror if you can,Ât see the bottom of your feet, or ask a family member to help.

Wash your feet every day in warm (not hot) water. Don,Ât soak your feet.

Dry your feet completely and apply lotion to the top and bottom,Âbut not between your toes, which could lead to infection.

Never go barefoot. Always wear shoes and socks or slippers, even inside, to avoid injury. Check that there aren't any pebbles or other objects inside your shoes and that the lining is smooth.

Wear shoes that fit well. For the best fit, try on new shoes at the end of the day when your feet tend to be largest. Break in your new shoes slowly, wear them for an hour or two a day at first until they're completely comfortable. Always wear socks with your shoes.

Trim your toenails straight across and gently smooth any sharp edges with a nail file. Have your foot doctor (podiatrist) trim your toenails if you can't see or reach your feet.

Don't remove corns or calluses yourself, and especially don't use over-the-counter products to remove them, they could burn your skin.

Get your feet checked at every health care visit. Also, visit your foot doctor every year (more often if you have nerve damage) for a complete exam, which will include checking for feeling and blood flow in your feet.

Keep the blood flowing. Put your feet up when you're sitting, and wiggle your toes for a few minutes several times throughout the day.

Choose feet-friendly activities like walking, riding a bike, or swimming. Check with your doctor about which activities are best for you and any you should avoid.

Be sure to ask your doctor what else you can do to keep your feet healthy.

Feeling No Pain When to See Your Doctor If you experience any of these symptoms, don't wait for your next appointment. See your regular doctor or foot doctor right away:

Pain in your legs or cramping in your buttocks, thighs, or calves during physical activity.

Tingling, burning, or pain in your feet.

Loss of sense of touch or ability to feel heat or cold very well.

A change in the shape of your feet over time.

Loss of hair on your toes, feet, and lower legs.

Dry, cracked skin on your feet.

A change in the color and temperature of your feet.

Thickened, yellow toenails.

Fungus infections such as athlete's foot between your toes.

A blister, sore, ulcer, infected corn, or ingrown toenail.

Most people with diabetes can prevent serious foot complications. Regular care at home and going to all doctor's appointments are your best bet for preventing foot problems (and stopping small problems from becoming serious ones).

Amputation: What to Know Could You Have Nerve Damage? None None None None None None None None None None More Than a Sweet Tooth None None Keep Your Mouth Healthy and Happy None None Don't Miss Your Visit None None None None None None None None None None The Diabetes and Hearing Loss Connection None None Signs of Hearing Loss None None How To Protect Your Ears None None None None None None None None None None How Diabetic

Retinopathy Is Diagnosed During your eye exam, your eye doctor will check how well you see the details of letters or symbols from a distance. Your doctor will also look at the retina and inside of your eyes and may use a dye to reveal leaky blood vessels. If it turns out you have diabetic retinopathy, your eye doctor may want to check your vision more often than once a year.

You should be checked for diabetic retinopathy immediately if you,Äre diagnosed with type 2 diabetes. If you have type 1 diabetes, you should be checked within 5 years of your diagnosis and then regularly thereafter, typically every year. The sooner you,Äre treated for diabetic retinopathy, the better that treatment will work.

Call your eye doctor if you notice changes in your vision, especially if they happen suddenly. Changes may include:

Blurring

Spots

Flashes

Blind spots

Distortion

Difficulty reading or doing detail work

Diabetic Retinopathy Diabetic Retinopathy Treatment Treating diabetic retinopathy can repair damage to the eye and even prevent blindness in most people. Treatment can start before your sight is affected, which helps prevent vision loss. Options include:

Laser therapy (also called laser photocoagulation). This creates a barrier of scar tissue that slows the growth of new blood vessels. Medicines called VEGF inhibitors, which can slow down or reverse diabetic retinopathy.

Removing all or part of the vitreous (vitrectomy).

Reattachment of the retina (for retinal detachment, a complication of diabetic retinopathy).

Injection of medicines called corticosteroids.

Risk Factors for Diabetic Retinopathy Other Eye Diseases Cataract

A cataract is the clouding of the normally clear lens in your eye.

Though everyone,Äs lenses tend to get cloudy as they get older, people with diabetes are more likely to have cataracts, and at a younger age.

One reason is that high blood sugar can cause deposits to build up in the lenses and make them cloudy.

Other risk factors include high blood pressure, having obesity, too much sun exposure over time, and smoking.

Surgery is the only way to treat cataracts, but you usually don,Ät have to have surgery right away. Using brighter lights in your home and anti-glare sunglasses outside can help early on. If your cataracts get in the way of doing everyday activities, it may be time for surgery. The good news is the surgery is very safe, and most people have better vision afterwards!

Glaucoma

Glaucoma is a group of eye diseases that damage the optic nerve, usually because of too much pressure in the eye. Many types of glaucoma don't have symptoms, and vision loss can happen so slowly that you don't notice it.

People with diabetes are twice as likely to develop open-angle glaucoma, the most common type. Other risk factors include having a family history of glaucoma, being over age 60, and being African American, Asian, or Hispanic/Latino.

Diabetes can also cause neovascular glaucoma. This happens sometimes with diabetic retinopathy when new and abnormal blood vessels grow on the iris (the colored part of the eye). The new vessels can block off the flow of fluid out of the eye, which raises eye pressure.

There isn't a way to prevent glaucoma, but treatment can help stop it from getting worse. That's why catching glaucoma early is so important. Treatment options include medicines, laser treatment, and surgery. Talk to your eye doctor about what choices are best for you. Stages of Diabetic Retinopathy Prevent or Delay Eye Diseases You can protect your vision and lower your chance for vision loss with these steps:

Get a dilated eye exam at least once a year so your eye doctor can spot any problems early when they're most treatable.

Keep your blood sugar levels in your target range as much as possible. Over time, high blood sugar not only damages blood vessels in your eyes, it can also affect the shape of your lenses and make your vision blurry. Keep your blood pressure and cholesterol levels in your target range to lower your risk for eye diseases and vision loss. Also good for your health in general!

Quit smoking. Quitting lowers your risk for diabetes-related eye diseases and improves your health in many other ways too.

Get active. Physical activity protects your eyes and helps you manage diabetes.

Get Your Eyes Checked None None None None Diabetes Distress You may sometimes feel discouraged, worried, frustrated, or tired of dealing with daily diabetes care, like diabetes is controlling you instead of the other way around. Maybe you've been trying hard but not seeing results. Or you've developed a health problem related to diabetes in spite of your best efforts.

Those overwhelming feelings, known as diabetes distress, may cause you to slip into unhealthy habits, stop checking your blood sugar, even skip doctor's appointments. It happens to many, if not most, people with diabetes, often after years of good management. In any 18-month period, 33% to 50% of people with diabetes have diabetes distress.

Diabetes distress can look like depression or anxiety, but it can't be treated effectively with medicine. Instead, these approaches have been shown to help:

Make sure you're seeing an endocrinologist for your diabetes care. He or she is likely to have a deeper understanding of diabetes challenges than your regular doctor.

Ask your doctor to refer you to a mental health counselor who specializes in chronic health conditions.

Get some one-on-one time with a diabetes educator so you can problem-solve together.

Focus on one or two small diabetes management goals instead of thinking you have to work on everything all at once.

The Mind-Body Connection
Talk to Your Health Care Team
Your health care team knows diabetes is challenging, but may not understand how challenging. And you may not be used to talking about feeling sad or down. But if you, "are concerned about your mental health, let your doctor know right away. You, "are not alone, "help is available!
Depression: More Than Just a Bad Mood
Stress and Anxiety

NoneNone NoneNone
NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone
NoneNone NoneNonePrepare Now Before Getting SickNoneNoneIf You Get SickNoneNoneGo to an emergency room if any of the following occurs:
NoneNoneNoneNoneNone NoneNone NoneNone Willpower Isn, "EnoughDon, "get us wrong: willpower is great. It just isn, "enough. You can, "count on it to reach and maintain the healthier weight you want.

But don, "worry; there are other ways. Control your environment so temptation is out of the picture and healthy habits are in. Some ideas:

Don, "bring home food you don, "want to eat. Make home a safe zone! Avoid buffet-style restaurants.

Don, "let yourself get too hungry.

Cook your own food so you can control the calories.

Lay out your workout clothes before you go to sleep.

Keep the dog, "s leash and your walking shoes by the door.
Getting Started
Sleep Helps
Too little sleep makes dieting much harder because it increases your hunger and appetite, especially for high-calorie, high-carb foods. Too little sleep also triggers stress hormones, which tell your body to hang onto fat. Outsmart this problem by being physically active, which has been shown to help you fall asleep faster and sleep better. A relaxing nighttime routine can also help you get your zzz, "s.

And these tips are tried and true: no screens an hour before bedtime, avoid heavy meals and alcohol before bedtime, and keep your bedroom dark and cool.
Food for Life
Write It When You Bite It
Writing down what you eat is the single best predictor of weight loss success. But most people don, "do it because they think it will be too time-consuming. Guess how long it takes (yes, studies have been done)? Less than 15 minutes a day on average. You don, "need to add lots of detail, but aim for at least 3 entries each day and do it consistently day after day for the best results.
Physical Activity
Find Your Motivation
People who keep the weight off tend to be motivated by more than just being thinner. For some, it might be a health scare. Others want more energy to play with their grandkids. Focus on a goal that, "s meaningful to you, and you, "ll be more likely to keep the pounds off too.
More Tips
NoneNone NoneNone
NoneNone Ways To Turn Excuses Into SolutionsNoneBeing More Active Is Better for YouNoneNoneHow To Benefit From Physical ActivityNoneNoneWays

To Get Started
Diabetes Care Kit
Remember Your Other Health Concerns
Find a Shelter That Meets Your Needs
Getting Back to Normal
When you can get your usual insulin and store it properly, throw away any insulin that was stored at room temperature or exposed to very high or low temperatures. Plan to visit your doctor if you have questions about managing your diabetes going forward or have any other health concerns.
Using Insulin
Switching Insulin
Using an Insulin Pump
Will my insurance cover DSMES?
Insurance coverage of DSMES varies, but many plans cover diabetes education. Medicare covers up to 10 hours of DSMES (called diabetes self-management training or DSMT in the Medicare system) if you,Âve been diagnosed in the past year. Contact your insurance provider for more information about your benefits.
What is DSMES?
Get Personalized Support
With lifestyle changes, one size doesn,Ât fit all. When you participate in DSMES, you,Âll work with a diabetes care and education specialist to find what works for you.
How will DSMES help me?
None
How can I find DSMES services?
None
Insurance Coverage
Insurance coverage of DSMES varies, but many plans cover diabetes education. Medicare covers up to 10 hours of DSMES if you,Âve been diagnosed in the past year. After the first year, your coverage may change. Note that Medicare refers to DSMES as diabetes self-management training (DSMT). Contact your insurance provider for more information about your benefits.
Diabetes Support When You Need It
When to Get DSMES
There are four key times DSMES can help:

If you,Âve been recently diagnosed.
At doctor,Âs appointments.
If you,Âve developed new complications.
If other life changes happen that make diabetes management harder.
Ask your health care provider to refer you at these times to get the greatest benefit from DSMES services.
Available Support
Find a DSMES Program
DSMES services will help you:
None
None
None
What Does the A1C Test Measure?
None
Who Should Get an A1C Test, and When?
None
How to Prepare for Your A1C Test
None
None
None
Gestational diabetes
Gestational diabetes is a type of diabetes that develops during pregnancy. Most of the time, this type of diabetes goes away after the baby is born. However, if you,Âve had gestational diabetes, you have a higher chance of developing type 2 diabetes later in life. Sometimes diabetes diagnosed during pregnancy is type 2 diabetes.
What are the different types of diabetes?
Prediabetes
People with prediabetes have blood glucose levels that are higher than normal but not high enough to be diagnosed with type 2 diabetes. If you have prediabetes, you have a higher risk of developing type 2 diabetes in the future. You also have a higher risk for heart disease than people with normal glucose levels.
Type 1 diabetes
Other types of diabetes
A less common type of diabetes, called monogenic diabetes, is caused by a change in a single gene. Diabetes can also come from having surgery to remove the pancreas, or from damage to the pancreas due to conditions such as cystic fibrosis
Type 2 diabetes
How common are diabetes and prediabetes?
More than 133 million Americans have diabetes or prediabetes.¹

As of 2019, 37.3 million people, or 11.3% of the U.S. population, had diabetes.¹ More than 1 in 4 people over the age of 65 had diabetes. Nearly 1 in 4 adults with diabetes didn't know they had the disease.²

About 90% to 95% of diabetes cases are type 2 diabetes.³

In 2019, 96 million adults, or 38% of U.S. adults, had prediabetes.⁴ What other health problems can people with diabetes develop? None None None None None None Treating type 2 diabetes Type 2 diabetes is treated with changes in your diet and depending on the response of your blood glucose levels, sometimes tablets and insulin. Early in the course of type 2 diabetes, planned weight loss can even reverse the disease. About type 2 diabetes Complications of type 2 diabetes Diabetes can cause serious long-term health problems. It's the most common cause of vision loss and blindness in people of working age.

Everyone with diabetes aged 12 or over should be invited to have their eyes screened once a year for diabetic retinopathy.

Diabetes is also responsible for most cases of kidney failure and lower limb amputation, other than accidents. Symptoms of diabetes Preventing type 2 diabetes If you're at risk of type 2 diabetes, you may be able to prevent it developing by making lifestyle changes.

These include:

losing weight if you're overweight, and maintaining a healthy weight
eating a healthy, balanced diet
stopping smoking if you smoke
drinking alcohol in moderation
taking plenty of regular exercise Causes of type 2 diabetes Living with type 2 diabetes If you already have type 2 diabetes, it may be possible to control your symptoms by making the above changes. This also minimises your risk of developing complications. None None None None None None What causes diabetes? The amount of glucose in the blood is controlled by a hormone called insulin, which is produced by the pancreas (a gland behind the stomach).

When food is digested and enters your bloodstream, insulin moves glucose out of the blood and into cells, where it's broken down to produce energy.

However, if you have diabetes, your body is unable to break down glucose into energy. This is because there's either not enough insulin to move the glucose, or the insulin produced doesn't work properly. Pre-diabetes Type 1 diabetes In type 1 diabetes, the body's immune system attacks and destroys the cells that produce insulin. As insulin production decreases until no more is produced, your glucose levels increase, which can seriously damage the body's organs.

Type 1 diabetes usually develops before the age of 40, often during the teenage years.

Type 1 diabetes is less common than type 2 diabetes. In the UK, it affects about 10% of all adults with diabetes.

If you're diagnosed with type 1 diabetes, you'll need insulin injections for the rest of your life.

You'll also need to pay close attention to certain aspects of your lifestyle and health to ensure your blood glucose levels stay balanced.

For example, you'll need to eat healthily, take regular exercise and carry out regular blood tests. When to see a doctor
Type 2 diabetes is where the body doesn't produce enough insulin, or the body's cells don't react to insulin. This is known as insulin resistance.

If you're diagnosed with type 2 diabetes, you may be able to control your symptoms simply by eating a healthy diet, exercising regularly, and monitoring your blood glucose levels.

However, as type 2 diabetes is a progressive condition, you may eventually need medication, usually in the form of tablets.

Type 2 diabetes is often associated with obesity. Obesity-related diabetes is sometimes referred to as maturity-onset diabetes because it's more common in older people. Symptoms of diabetes
Diabetic eye screening
Everyone with diabetes aged 12 or over should be invited to have their eyes screened once a year by the national diabetes retinal screening service.

If you have diabetes, your eyes are at risk from diabetic retinopathy, a condition that can lead to sight loss if it's not treated.

Screening, which involves a half-hour check to examine the back of the eyes, is a way of detecting the condition early so it can be treated more effectively. Gestational diabetes (in pregnancy)
Other types of diabetes
In addition to Type 1, Type 2 and gestational diabetes, there are a range of other types of diabetes.

These types of diabetes are much rarer, with about 2% of people having them. The rare types of diabetes include:

- different types of monogenic diabetes

- cystic fibrosis-related diabetes

- diabetes caused by rare syndromes

- diabetes caused by certain medications such as steroids and antipsychotics

- diabetes caused by surgery or hormonal imbalances

Unfortunately, many people with rarer types of diabetes are misdiagnosed leading to delays in getting the right treatment. None None None

Diabetes sick day rules
If you need to take insulin to control your diabetes, you should have received instructions about looking after yourself when you're ill, known as your sick day rules.

Contact your diabetes care team or GP for advice if you haven't received these.

The advice you're given will be specific to you, but some general measures that your sick day rules may include could be to:

- keep taking your insulin , it's very important not to stop treatment when you're ill; your treatment plan may state whether you need to temporarily increase your dose
- test your blood glucose level more often than usual , most people are advised to check the level at least four times a day
- keep yourself well hydrated , make sure you drink plenty of sugar-free drinks
- keep eating , eat solid food if you feel well enough to, or liquid carbohydrates such as milk, soup and yoghurt if this is easier
- check your ketone levels if your blood glucose level is high

Seek advice from your diabetes care team or GP if your blood glucose or ketone level remains high after taking insulin, if:

- you're not sure whether to make any changes to your treatment
- you develop symptoms of diabetic ketoacidosis
- you have any other concerns

Living with type 1 diabetesPregnancyIf you have diabetes and you're thinking about having a baby, it's a good idea to discuss this with your diabetes care team.

A planned pregnancy enables you to make sure your blood glucose levels are as well controlled as possible before you get pregnant. Most women with diabetes have a healthy baby.

You'll need to keep your blood glucose under tight control, particularly before becoming pregnant and during the first eight weeks of pregnancy, to reduce the risk of the baby developing serious birth defects.

You should also take a higher dose of folic acid tablets. Folic acid helps prevent your baby developing spinal cord problems. Doctors now recommend that all women planning to have a baby take folic acid. Women with diabetes are advised to take 5mg a day until they're 12 weeks pregnant (only available on prescription).

Folic acid should be taken alongside pregnancy multivitamins that include vitamin D. Insulin and metformin are safe to take during pregnancy. It's important to review any other medications you take to ensure these are safe to take during pregnancy.

You should also have your eyes checked. Retinopathy (see above) affects the blood vessels in the eyes and is a risk for all people with diabetes. Pregnancy can place extra pressure on the small vessels in your eyes, so it's important to treat retinopathy before you become pregnant.

Your GP or diabetes care team can give you further advice. Diabetes UK and JDRF also provide more useful information about pregnancy and diabetes to help you get your pregnancy off to a healthy start. Look after your feetEducationYou'll be best equipped to manage your diabetes if

you,Âre given information and education when you,Âre diagnosed, and then on an ongoing basis.

The National Institute for Health and Care Excellence (NICE) strongly recommends that all people who have diabetes should be offered a structured patient education programme, providing information and education to help them care for themselves.

This gives people the best chance of developing the skills they need to effectively treat their condition, maintain their glucose levels at a normal level and help prevent long-term complications. It also reduces the risk of developing hypoglycaemia (low blood glucose levels).Regular eye testsStructured patient educationStructured patient education means there,Âs a planned course that:

covers all aspects of diabetes

is flexible in content

is relevant to a person,Âs clinical and psychological needs

is adaptable to a person,Âs educational and cultural background

There are also several local adult education programmes, many of which are working towards the criteria for structured education. Ask your diabetes care team about the adult education programmes they provide.

Diabetes and your childNoneNone NoneNone NoneNoneSymptoms of

type 2 diabetesNoneNoneHyperglycaemiaNoneNoneNoneNoneNoneNone

NoneNone NoneNone NoneNoneCauses of type 1 diabetesNoneNoneAutoimmune

conditionNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone GLP-1

agonistsGLP-1 agonists acts in a similar way to the natural hormone GLP-1 (see the section on gliptins, below).

They,Âre given by injection and boost your own insulin production when there are high blood glucose levels, reducing blood glucose without the risk of hypoglycaemia episodes (,Âhypos,Â). They,Âre also particularly useful for people with type 2 diabetes and cardiac disease.Medicines for type 2 diabetesSulphonylureasSulphonylureas increase the amount of insulin that,Âs produced by your pancreas.

Examples include:

glibenclamide

gliclazide

glimepiride

glipizide

gliquidone

You may be prescribed one of these medicines if you can,Ât take metformin.

Alternatively, you may be prescribed sulphonylurea and metformin if metformin doesn,Ât control blood glucose on its own.

Sulphonylureas can increase the risk of hypoglycaemia (low blood glucose) because they increase the amount of insulin in your body. They can sometimes cause side effects, including weight gain, nausea and diarrhoea.MetforminPioglitazonePioglitazone is a type of

thiazolidinedione medicine (TZD), which make your body's cells more sensitive to insulin so more glucose is taken from your blood.

It's usually used in combination with other oral diabetes medication. It may cause weight gain and ankle swelling (oedema).

You shouldn't take pioglitazone if you have heart failure or a high risk of bone fracture. SGLT2 inhibitors
Gliptins (DPP-4 inhibitors)
Gliptins work by preventing the breakdown of a naturally occurring hormone called GLP-1.

GLP-1 helps the body produce insulin in response to high blood glucose levels, but is rapidly broken down.

By preventing this breakdown, the gliptins (linagliptin, saxagliptin, sitagliptin and vildagliptin) prevent high blood glucose levels, but don't result in episodes of hypoglycaemia.

You may be prescribed a gliptin if you're unable to take sulphonylureas or glitazones, or in combination with them. They're not associated with weight gain and are often used with other oral diabetes medication for those who are obese. Insulin treatment
Insulin injections
Insulin must be injected because it would be broken down in your stomach like food and unable to enter your bloodstream if it were taken as a tablet.

If you need to inject insulin, your diabetes care team will advise you about when you need to do it.

They will show you how to inject it yourself, and will also give you advice about storing your insulin and disposing of your needles properly.

Insulin injections are given using either a syringe or an injection pen, also called an insulin pen (auto-injector). Most people need between two and four injections of insulin a day.

Your GP practice or diabetes nurse will also teach a relative or a close friend how to inject the insulin properly. Treatment for low blood glucose (hypoglycaemia)
If you have type 2 diabetes that's controlled using insulin or certain types of tablets (e.g. sulfonylurea), you may experience episodes of hypoglycaemia.

Hypoglycaemia is where your blood glucose levels become very low.

Mild hypoglycaemia (a 'hypo') can make you feel shaky, weak and hungry, but it can usually be controlled by eating or drinking something sugary.

If you have a hypo, you should initially have a form of carbohydrate that will act quickly, such as a sugary drink or glucose tablets.

This should be followed by a longer-acting carbohydrate, such as a cereal bar, sandwich or piece of fruit.

In most cases, these measures will be enough to raise your blood glucose level to normal. You should aim for a hypo to be treated and to recheck your blood glucose level within 15 minutes.

If blood glucose still less than 4mmol/l then repeat the treatment using a fast acting carbohydrate. When your blood glucose returns to normal then have your longer acting carbohydrate.

If you develop severe hypoglycaemia, you may become drowsy and confused, and you may even lose consciousness.

If this occurs, you may need to have an injection of glucagon into your muscle or glucose into a vein. Glucagon is a hormone that quickly increases your blood glucose levels.

You may require input from a health care professional. If the glucagon is not successful, you may require an injection of dextrose into your vein.

Your diabetes care team can advise you on how to avoid a hypo and what to do if you have one. Other treatments If you have type 2 diabetes, your risk of developing heart disease, stroke, foot problems, eye and kidney disease is increased.

To reduce your risk of developing other serious health conditions, you may be advised to take other medicines, including:

anti-hypertensive medicines to control high blood pressure
a statin, such as simvastatin or atorvastatin, to reduce high cholesterol
low-dose aspirin to prevent a stroke
an angiotensin-converting enzyme (ACE) inhibitor, such as enalapril, lisinopril or ramipril, if you have the early signs of diabetic kidney disease

Diabetic kidney disease is identified by the presence of small amounts of albumin (a protein) in your urine. If treated early enough, it may be reversible. Diabetic retinopathy Diabetic retinopathy is when the retina, the light-sensitive layer of tissue at the back of the eye, becomes damaged.

Blood vessels in the retina can become blocked or leaky, or can grow haphazardly. This prevents light fully passing through to your retina. If it isn't treated, it can damage your vision.

Annual eye checks are usually organised by a regional photographic unit. If significant damage is detected, you may be referred to a doctor who specialises in treating eye conditions (ophthalmologist) such as cataract and glaucoma.

The better you control your blood glucose levels, the lower your risk of developing serious eye problems.

Treatment for diabetic retinopathy is only necessary if screening detects significant problems that mean your vision is at risk.

If the condition hasn't reached this stage, the advice on managing your diabetes, BP and cholesterol level is recommended.

The main treatments for more advanced diabetic retinopathy are:

laser treatment

injections of medication into your eyes

an operation to remove blood or scar tissue from your eyes

Complications of type 2 diabetes

Kidney disease If the small blood vessels of your kidney

become blocked and leaky, your kidneys will work less efficiently.

It's usually associated with high blood pressure, and treating this is a key part of management.

In rare, severe cases, kidney disease can lead to kidney failure. This

can mean a kidney replacement, treatment with dialysis or sometimes

kidney transplantation becomes necessary.

Heart disease and stroke

Foot problems Damage to the nerves of the foot can mean small nicks and cuts

aren't noticed and this, in combination with poor circulation, can lead

to a foot ulcer.

About 1 in 10 people with diabetes get a foot ulcer, which can cause a serious infection.

If you have diabetes, look out for sores and cuts that don't heal, puffiness or swelling, and skin that feels hot to the touch. You should also have your feet examined at least once a year.

If poor circulation or nerve damage is detected, check your feet every

day and report any changes to your doctor, nurse or podiatrist.

Nerve damage

Sexual dysfunction In men with diabetes, particularly those who

smoke, nerve and blood vessel damage can lead to erection problems. This

can usually be treated with medication.

Women with diabetes may experience:

a reduced sex drive (loss of libido)

less pleasure from sex

vaginal dryness

less ability to orgasm

pain during sex

If you experience a lack of vaginal lubrication or find sex painful, you

can use a vaginal lubricant or a water-based gel.

Miscarriage and stillbirth

Preventing hypoglycaemia If you have

diabetes that requires treatment with insulin, the safest way to avoid

hypoglycaemia is to regularly check your blood sugar and learn to

recognise the early symptoms.

Missing meals or snacks or eating less carbohydrate than planned can

increase your risk of hypoglycaemia. You should be careful when drinking

alcohol as it can also cause hypoglycaemia, sometimes many hours after

drinking.

Exercise or activity is another potential cause, and you should have a plan for dealing with this, such as eating carbohydrate before, during or after exercise, or adjusting your insulin dose.

You should also make sure you regularly change where you inject insulin as the amount of insulin your body absorbs can differ depending on where it,Âs injected.

Always carry rapid-acting carbohydrate with you, such as glucose tablets, a carton of fruit juice (one that contains sugar), or some sweets in case you feel symptoms coming on or your blood glucose level is low.

Make sure your friends and family know about your diabetes and the risk of hypoglycaemia. It may also help to carry some form of identification that lets people know about your condition in an emergency.

When hypoglycaemia occurs as the result of an underlying condition other than diabetes, the condition will need to be treated to prevent a further hypo. IntroductionNoneNoneSymptoms of hypoglycaemiaNoneNoneCorrecting hypoglycaemiaNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneDiagnosing type 1 diabetesNoneNoneUrine and blood testsNoneNoneGlycated haemoglobin (HbA1c)NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneHyperglycaemia (high blood glucose)As diabetes occurs as a result of your body being unable to produce any, or enough, insulin to regulate your blood glucose, your blood glucose levels may become very high. This happens because there,Âs insufficient insulin to move glucose out of your bloodstream and into your cells to produce energy.

If your blood glucose levels become too high, you may experience hyperglycaemia. The symptoms of hyperglycaemia are similar to the main symptoms of diabetes, but they may come on suddenly and be more severe. They include:

- extreme thirst
- a dry mouth
- blurred vision
- drowsiness

- a need to pass urine frequently

Left untreated or if you already have an infection, hyperglycaemia can lead to diabetic ketoacidosis. This is a life-threatening condition, where the body breaks down fat and muscle as an alternative source of energy. This leads to a build-up of acids in your blood, which can cause vomiting, dehydration, unconsciousness and even death.

Your healthcare team will teach you about looking out for these symptoms and how to manage your ,ÂSick Day,Â rules. Symptoms of type 1 diabetesNoneNoneWhen to seek urgent medical attentionNoneNoneHypoglycaemia (low blood glucose)NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneMetforminMetformin is usually the first medicine used to treat type 2 diabetes. It works by reducing the amount of glucose your liver releases into your bloodstream. It also makes your body,Âs cells more responsive to insulin.

If you're overweight, it's also likely you'll be prescribed metformin. Unlike some other medicines used to treat type 2 diabetes, metformin shouldn't cause additional weight gain.

However, it can sometimes cause mild side effects, such as nausea and diarrhoea, and you may not be able to take it if you have kidney damage. Treating type 2 diabetes SGLT2 inhibitors SGLT2 inhibitors work by increasing the amount of glucose excreted in urine. They're particularly useful in people with type 2 diabetes and who have cardiac disease.

The three SGLT2 inhibitors that may be prescribed include:

dapagliflozin
canagliflozin
empagliflozin

Each medication is taken as a tablet once a day. The main side effect is a higher risk of genital and urinary tract infections.

If you're unwell and have a dehydrating illness (e.g. fever, vomiting or diarrhoea), it's important you stop these medications. Get your glucose and ketone level checked by your healthcare professional to prevent diabetic ketoacidosis developing. Treating type 2 diabetes GLP-1 agonists GLP-1 agonists acts in a similar way to the natural hormone GLP-1 (see the section on gliptins, below).

They're given by injection and boost your own insulin production when there are high blood glucose levels, reducing blood glucose without the risk of hypoglycaemia episodes (, 'hypos,). They're also particularly useful for people with type 2 diabetes and cardiac disease. Medicines for type 2 diabetes Sulphonylureas Sulphonylureas increase the amount of insulin that's produced by your pancreas.

Examples include:

glibenclamide
gliclazide
glimepiride
glipizide
gliquidone

You may be prescribed one of these medicines if you can't take metformin.

Alternatively, you may be prescribed sulphonylurea and metformin if metformin doesn't control blood glucose on its own.

Sulphonylureas can increase the risk of hypoglycaemia (low blood glucose) because they increase the amount of insulin in your body. They can sometimes cause side effects, including weight gain, nausea and diarrhoea. Pioglitazone None None Gliptins (DPP-4 inhibitors) Gliptins work by preventing the breakdown of a naturally occurring hormone called GLP-1.

GLP-1 helps the body produce insulin in response to high blood glucose levels, but is rapidly broken down.

By preventing this breakdown, the gliptins (linagliptin, saxagliptin, sitagliptin and vildagliptin) prevent high blood glucose levels, but don't result in episodes of hypoglycaemia.

You may be prescribed a gliptin if you're unable to take sulphonylureas or glitazones, or in combination with them. They're not associated with weight gain and are often used with other oral diabetes medication for those who are obese. Insulin treatmentIf glucose-lowering tablets aren't effective in controlling your blood glucose levels, you may need to have insulin treatment.

This can be taken instead of or alongside your tablets, depending on the dose and the way you take it.

Insulin comes in several different preparations, and each works slightly differently. Your treatment may include a combination of these different insulin preparations. PregnancyIf you have diabetes and you're thinking about having a baby, it's a good idea to discuss this with your diabetes care team.

If you're taking oral medications to manage your diabetes, this may need to change before you are pregnant. It's important that you plan your pregnancy and discuss it with your diabetes team.

Planning your pregnancy means you can ensure your blood glucose levels are as well controlled as they can be before you get pregnant.

You'll need to tightly control your blood glucose level, particularly before becoming pregnant and during the first eight weeks of your baby's development, to reduce the risk of birth defects.

You should also:

check your medications, some tablets used to treat type 2 diabetes may harm your baby, so you may have to switch to insulin injections, stop statin medication or some blood pressure medications
take a higher dose of folic acid tablets, folic acid helps prevent your baby developing spinal cord problems, and it's recommended all women planning to have a baby take folic acid; women with diabetes are advised to take 5mg each day (only available on prescription) along with pregnancy multivitamins that include vitamin D
have your eyes checked, retinopathy, which affects the blood vessels in the eyes, is a risk for all people with diabetes; as pregnancy can place extra pressure on the small vessels in your eyes, it's important to treat retinopathy before you become pregnant
Your GP or diabetes care team can give you further advice. Living with type 2 diabetesDiabetes educationYou'll be best equipped to manage your diabetes day-to-day if you're given information and education when you're diagnosed and on an ongoing basis.

The National Institute for Health and Care Excellence (NICE) recommends that all people who have diabetes should be offered a structured patient education programme, providing information and education to help them care for themselves. Look after your feet. Structured patient education means there, 'a planned course that:

covers all aspects of diabetes

is flexible in content

is relevant to a person, 'clinical and psychological needs

is adaptable to a person, 'educational and cultural background

For type 2 diabetes, there are several local adult education programmes, many of which are working towards the criteria for structured education.

Ask your diabetes care team about the adult education programmes they provide.

Regular eye tests. Talk to others. Many people find it helpful to talk to others in a similar position, and you may find support from a group for people with diabetes.

Patient organisations have local groups where you can meet others diagnosed with the condition. Financial support and benefits. None. Driving with diabetes. It, 'a common myth that people with diabetes aren, 't allowed to drive anymore. Although there are some restrictions on drivers with diabetes, it, 's not as severe as you may think.

You should always tell your insurer that you have diabetes as this may affect your insurance claim. Only individuals who use insulin have to tell the DVLA that they have diabetes. A high majority of individuals who use insulin can carry on driving on a restricted licence. This usually has to be renewed every 3 years.

Additional restrictions may apply for different licences (e.g Group 2 HGV) so always refer to the DVLA guidelines.

Unfortunately, some individuals do lose their driving license, most commonly due to experiencing severe hypos.

If you start to have a hypo whilst driving you should:

Pull over safely

Switch off your car engine

Take fast-acting carbs, like glucose tablets or sweets, and some longer-acting carbohydrates too, like plain biscuits or crackers

Don, 't drive until 45 minutes after your blood sugar level has gone back to 5mmol/l or above. Diabetes sick day rules. If you need to take insulin to control your diabetes, you should have received instructions about looking after yourself when you, 're ill, 'known as your, 'sick day rules, '.

Contact your diabetes care team or GP for advice if you haven, 't received these.

The advice you're given will be specific to you, but some general measures that your sick day rules may include could be to:

keep taking your insulin , it's very important not to stop treatment when you're ill; your treatment plan may state whether you need to temporarily increase your dose
test your blood glucose level more often than usual , most people are advised to check the level at least four times a day
keep yourself well hydrated , make sure you drink plenty of sugar-free drinks
keep eating , eat solid food if you feel well enough to, or liquid carbohydrates such as milk, soup and yoghurt if this is easier
check your ketone levels if your blood glucose level is high
Seek advice from your diabetes care team or GP if your blood glucose or ketone level remains high after taking insulin, if:

you're not sure whether to make any changes to your treatment
you develop symptoms of diabetic ketoacidosis
you have any other concerns Can a blood glucose meter help to diagnose type 1 diabetes? A blood glucose meter may be helpful in indicating whether you or a family member may have diabetes.

It is not essential to have a blood glucose meter but it may be considered useful in a family with a history of type 1 diabetes or autoimmune conditions.

A blood glucose result, taken over 2 hours after eating, of over 7.8 mmol/l could indicate a presence of diabetes.

If high results are being recorded 2 hours after eating for consecutive meals, contact your GP who will be able to carry out a diagnosis. The 4Ts , symptoms of type 1 diabetes None None Emergency diabetes symptoms None None How long does it take to develop type 1 symptoms? None None None None None None None Erectile dysfunction Charity Diabetes UK states that erectile dysfunction may be an indicator of undiagnosed diabetes.

Erectile difficulties can be caused by high blood sugar levels over a long period of time causing difficulties either with blood supply to the penis or from damage to nerves in the penis.

Erectile dysfunction is defined as the inability to either achieve or maintain an erection sufficiently well to satisfy sexual activity. Symptoms of diabetes specific to men None None Reduced strength and loss of muscle mass None None Recurrent genital thrush None None None None None None Why do these symptoms matter for diabetics? These symptoms are essential for diabetics to understand, because they may encounter high or low blood sugar levels from time to time.

A cold or virus can cause sudden high blood sugar levels, and understanding the symptoms means knowing how to deal with hyperglycemia or hypoglycemia.

People with diabetes who can recognise the symptoms can avoid levels that lead to medical emergencies such as diabetic ketoacidosis. Symptoms of high blood sugar Knowing your high and low blood sugar symptoms allows you to test Once you understand symptoms of high and low blood sugar, it is possible to test quickly and avoid serious problems.

Keeping to a clear target range is one of the key goals of diabetes management, and knowing when you have the symptoms of high or low blood sugar levels allows you to test your blood sugar and make a correction. Symptoms of low blood sugar None None Be aware of low blood sugar symptoms None None None None None None None None Catching the symptoms early It is important to catch the symptoms early so that the damage caused by type 2 damage is limited.

If type 2 diabetes is caught at a later stage, some of the complications may be present at diagnosis, such as:

Neuropathy
Retinopathy
Nephropathy

Type 2 diabetes can also lead to a significant loss of the cells in the pancreas that produce insulin. This is referred to beta cell turnover.

Catching and treating type 2 diabetes early can help to prevent a significant loss of insulin producing cells, which may help to prevent or delay a need to take insulin injections. Symptoms of type 2 diabetes Can I reverse type 2 diabetes? The body is indeed able to , "reverse," or put type 2 diabetes into remission. This is achieved by reducing HbA1c to under the diagnosis threshold. However, unhealthy habits can cause this to relapse. Spotting the symptoms of type 2 diabetes None None How long does it take for the symptoms of type 2 diabetes to develop? None None None None None None None None Gestational diabetes Gestational diabetes is a specific form of diabetes that occurs during pregnancy. The symptoms of gestational diabetes are the same as for other forms of diabetes.

Sometimes the symptoms may not be noticeable. For this reason, women are generally screened for gestational diabetes between weeks 24 and 28 of their pregnancy. Gestational diabetes develops in about 3 to 5% of all pregnancies. What are the symptoms of diabetes that are specific to women? Polycystic ovary syndrome (PCOS) Polycystic ovary syndrome is a condition in which the ovaries have a larger number of cysts on then normal.

The cysts are under-developed follicles containing eggs. The NHS notes that PCOS may be linked with higher levels of insulin in the body, which is more common in people who are overweight and people with type 2 diabetes.

Whilst a diagnosis of PCOS does not mean you have diabetes, it is linked with a higher risk of type 2 diabetes. Thrush and yeast infections None None Female sexual dysfunction (FSD) None None None None None None None None When to see your doctor If you, "re experiencing sudden

blurred vision together with eye pain, you should go see your doctor and have your eye(s) checked.

If your vision has become blurred over time, it could be a sign of an underlying condition, which could be diabetes amongst other possible causes.

Your doctor should be able to help distinguish why your vision may have worsened. Causes of blurred vision
Diabetes and blurred vision
Recognising blurred vision
Recognising the symptoms of polyphagia
The main sign of polyphagia is excessive hunger that doesn't go away by simply eating more food or eating more regularly than normal.

If you are worried by your sudden increase in appetite, you should consult your doctor. They will examine you to check whether your hunger is a symptom of diabetes or another medical condition. Causes of polyphagia
Hunger and hyperglycemia
Hunger and hypoglycemia
When to call your doctor
If you are suffering from extreme tiredness that is not simply due to a lack of sleep and has gone on for three to four weeks, you should seek advice from your doctor and make an appointment for a check-up. Causes of fatigue
Diabetes and fatigue
Recognising fatigue
What are the possible causes of unexplained weight loss?
Diabetes and sudden weight loss
When to call your doctor
Where can I get tested for diabetes?
If you have any of the symptoms listed above and think you may have diabetes, you should contact your doctor as soon as possible.

Your GP will be able to carry out checks to determine whether or not you have diabetes. How fast do the symptoms of diabetes develop?
Go to the doctor immediately to minimise the risk of complications
Spotting the signs of diabetes early on is vital and can help prevent the development of serious complications.

The earlier diabetes is diagnosed, the earlier it can be treated and controlled which, in turn, will reduce the risk of complications.

In people with type 1 diabetes, a condition called diabetic ketoacidosis at diagnosis is common. If untreated, this can result in extremely serious complications and even death, but it can be the first indicator of the presence of type 1 diabetes.

This occurs when acid compounds, ketones, form in the blood. A doctor testing you for type 1 diabetes may also wish to test for ketones to prevent ketoacidosis occurring.

If type 2 diabetes is left undiagnosed for a number of years, it could lead to the development of the following prior to diagnosis:

Nerve damage ,À neuropathy
Retinal damage ,À retinopathy or

Kidney damage ,À nephropathy

Hyperosmolar hyperglycaemic state is a condition that may occur if type 2 diabetes develops without medical treatment.

Type 1 diabetesBuying a blood glucose meter for peace of mindMore than 4 million people in the UK have been diagnosed with either type 1 or type 2 diabetes, while up to half a million more are believed to have undiagnosed diabetes.

With prevalence of diabetes on the rise, more and more people are purchasing blood glucose meters simply for peace of mind.

A blood glucose meter gives users an accurate idea of their blood glucose levels, allowing them to check that they are within the recommended target ranges.

For people without diabetes, blood sugar readings should ideally be between:

4 and 6 mmol/L before meals

Under 8 mmol/L two hours after mealsType 2 diabetesNoneNoneNoneNoneNone
NoneNone NoneNone What are the symptoms of prediabetes?Many people have prediabetes but are completely unaware of it. This is because the condition often develops gradually without any warning signs or symptoms. In many cases, the sufferer only learns of their borderline diabetic state once the symptoms of type 2 diabetes start to appear. Therefore, being aware of the risk factors is essential.What is prediabetes?What are the risk factors for prediabetes?You should be tested for prediabetes if you:

Are overweight or obese

Have a close relative (parent or sibling) who currently has or has had diabetes

Have high blood pressure, low HDL (,À good,À cholesterol) or high triglycerides

Are over the age of 40

Have given birth to a baby who weighed over 9 pounds

While pre-diabetes may affect anyone, of any age, gender or racial type, some groups are genetically more prone. These include:

Afro-Caribbean

South Asian

Native AmericanLearn more about prediabetesTesting for prediabetesEither a fasting plasma glucose test or an HbA1c test may be used to diagnose type 2 diabetes or prediabetes.

The following results indicate the presence of prediabetes:

Fasting plasma glucose: 5.5 mmol/L to 6.9 mmol/L

HbA1c: 42 to 47 mmol/mol (6.0 to 6.4%) [361]

If your results are above the upper limits for prediabetes, your GP may either diagnose you with type 2 diabetes or take another test in the near future to confirm whether you have diabetes. If you have symptoms of diabetes but have an HbA1c of below 42 mmol/mol (6.0%), you may be given an oral glucose tolerance test (OGTT).

If you are diagnosed with prediabetes, your doctor should clearly set out the steps you need to take to lower your risk of developing type 2 diabetes.

Explore Prediabetes Can I stop prediabetes developing into type 2 diabetes? The good news is that cases of prediabetes that are identified early on can be reversed, preventing them from progressing into full-blown type 2 diabetes. Each year in the UK, 5% to 10% of people diagnosed with prediabetes go on to develop type 2 diabetes.

The two principle factors for consideration are:

Making changes to your diet and

Appropriate physical exercise to your lifestyle

By making these changes, blood sugar levels can be returned to normal.

In fact, the recently completed Diabetes Prevention Program study conclusively showed that people with borderline diabetes can prevent the development of type 2 diabetes by making dietary changes and increasing their level of physical activity. NoneNoneNone NoneNone NoneNone So how do I know if my IFG becomes type 2 diabetes? IFG increases type 2 diabetes risk, so go straight to your doctor or healthcare professional if you feel unnaturally thirsty, pass more urine than usual, have recurrent infections, have blurred vision, or if your wounds heal slowly.

Remember, people with IFG are 5-15 times more likely to develop type 2 diabetes than people with normal glucose levels. What are the health implications of impaired fasting glycemia? What causes impaired fasting glycemia? Impaired Fasting Glycemia is caused by the body being unable to control glucose levels. Factors that increase IFG risk include:

Being black or South Asian & over 25

White and over 40

Family history of type 2 diabetes

Overweight

High blood pressure

Heart attack

Stroke

Gestational diabetes

Severe mental health problem What does impaired fasting glycemia mean? How is IFG diagnosed? IFG and diabetes are diagnosed by testing blood glucose levels. If your fasting blood glucose level is found to be between 3.6mmol/l and 6mmol/l, this means that your blood glucose level is normal.

If your fasting blood glucose level is 7mmol/l or higher, this may mean that you have diabetes. If your fasting blood glucose level is between 6.1mmol/l and 6.9mmols/l, you may have IFG. What are the symptoms of impaired fasting glycemia? How is impaired fasting glycemia treated? IFG doesn't require medical treatment, but lowering blood glucose levels can prevent or delay type 2 diabetes development. You can reach and maintain healthy blood sugar levels by eating a balanced diet, losing any excess weight, improving your fitness level, giving up smoking and sticking to recommended levels of alcohol. NoneNoneNone NoneNone NoneNone

Disruption in fat metabolism Obesity is also thought to trigger changes to the body's metabolism. These changes cause fat tissue (adipose tissue) to release fat molecules into the blood, which can affect insulin responsive cells and lead to reduced insulin sensitivity.

Another theory put forward by scientists into how obesity could lead to type 2 diabetes is that obesity causes prediabetes, a metabolic condition that almost always develops into type 2 diabetes.

Links between obesity and type 2 diabetes Preventing obesity The links between obesity and type 2 diabetes are firmly established, and without the intervention of a healthy diet and appropriate exercise, obesity can lead to type 2 diabetes over a relatively short period of time.

The good news is that reducing your body weight, by even a small amount, can help improve your body's insulin sensitivity and lower your risk of developing cardiovascular and metabolic conditions such as type 2 diabetes, heart disease and types of cancer.

According to the NHS, a 5% reduction in body weight followed up by regular moderate intensity exercise could reduce your type 2 diabetes risk by more than 50%.

For information on how to lose weight safely, how to stay motivated, and the benefits of shedding weight, see our guide on diabetes and weight loss. How does obesity cause type 2 diabetes? Cost of obesity In the UK, the cost to the NHS of obesity and related conditions such as type 2 diabetes is putting a huge, unsustainable drain on NHS resources.

Treating obesity, type 2 diabetes and diabetic complications such as nephropathy, heart disease and amputation is very costly, and with new cases of obesity-related type 2 diabetes soaring each year in the UK, these costs are expected to keep rising.

To tackle this problem, there is a need for widespread and far-reaching culturally appropriate educational literature that informs the population of the risk of eating badly and not taking exercise.

Late night snacking increases obesity risk, research shows
Children of women with gestational diabetes and obesity more likely to develop ADHD

Lack of sleep in adolescence increases obesity risk, research shows
Inflammatory response Making lifestyle changes Making healthy lifestyle changes can often prevent obesity, and in order to avoid a healthcare crisis the UK needs to spread information that highlights the importance of doing just that, especially amongst children. Obesity facts None None None None None Prevention through education Studies have repeatedly shown that the key to stemming the flow of global diabetes is early prevention, education and awareness.

It is the responsibility of every nation's healthcare system to recognise the ethnic minorities most at risk and develop culturally appropriate treatment programs for them.

Ethnicity factsNoneNoneDiabetes in India and ChinaNoneNonePrevalence in ethnic minoritiesNoneNoneNoneNoneNone NoneNone NoneNone Glucose intolerance testA number of tests can be used to diagnose forms of glucose intolerance.

Test performed to diagnose glucose intolerance include:

Fasting plasma glucose test

Oral glucose tolerance test (OGTT)What conditions are denoted by glucose intolerance?Treatment for glucose intoleranceTreatments for glucose intolerance will either require lifestyle changes or a combination of lifestyle changes and anti-diabetic medication.

Lifestyle changes involve taking part in regular physical activity, aiming to lose weight, if appropriate, and cutting down on smoking and alcohol as necessary.

If medication is advised, most people will start on a drug, taken in tablet form, called metformin.

Some people may need to take additional or alternative medication.

What is glucose intolerance?NoneNoneSymptoms of glucose intoleranceNoneNoneNoneNoneNone NoneNone NoneNone Can insulin resistance be reduced or reversed?It is certainly possible to reduce the effects of insulin resistance and there are a number of effective ways to do this.

Effective methods include:

Low-carbohydrate and ketogenic diets

Very-low-calorie diets

Weight loss surgery

Taking a lot of exercise in combination with a healthy diet

These methods share a similar way of working in that they all help to reduce the body's need for insulin and help people to lose weight.What is insulin resistance?NoneNoneSymptoms of insulin resistanceNoneNoneCauses of insulin resistanceNoneNoneNoneNoneNone NoneNone NoneNone What if I have some of these symptoms?If you have any of these symptoms, your doctor can run tests to determine whether you have elevated blood sugar levels and therefore insulin resistance.

One of these is the oral glucose tolerance test (OGTT or GTT).What are the criteria for metabolic syndrome?Managing metabolic syndromeIt is important to intervene into metabolic syndrome at an early stage, reducing the risk of type 2 diabetes developing.

Diet and exercise are the critical factors in solving this problem.

Weight loss, increased exercise levels and a healthy diet are the primary tools in managing metabolic syndrome.What are the symptoms of metabolic syndrome?NoneNoneDiagnosis of metabolic syndromeNoneNoneNoneNoneNone NoneNone NoneNone NoneNoneOral Glucose Tolerance Test

(OGTT)NoneNoneFasting Plasma Glucose Test

(FGT)NoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone High blood

pressureHigh cholesterol and blood pressure levels are risks for many diseases, one of which is type 2 diabetes. Both are also major symptoms of pre-diabetes.ObesityGestational diabetesGestational diabetes is another major risk, and affects about 2 to 5 per cent of women who fall pregnant.

Those women who suffer from it face greater later-life risks of developing type 2 diabetes, as do their children.Lack of exercise and sedentary way of lifeFamily historyHaving a close family member with type 2 diabetes can raise your own risk of developing the condition.

Unfortunately, you cannot do much about your genetic history, but you can be ready by being aware of the symptoms of type 2 diabetes.

Also, many ethnic minorities are more prone to suffer from diabetes.Eating a ,“Western,” dietAgingAs the population of the world ages, diabetes rates are soaring.

Unfortunately, the older we are, the greater the risk of developing type 2 diabetes is. The pancreas, according to some scientists, begins to produce insulin less effectively as we age.

Furthermore, bodily resistance to insulin increases with age.NoneNoneNone NoneNone NoneNone Euglycemic diabetic ketoacidosisIn most cases, ketoacidosis in people with diabetes will be accompanied by high sugar levels. However, ketoacidosis can also occur at low or normal blood glucose levels. This is referred to as euglycemic diabetic ketoacidosis and may occur if someone who is insulin dependent neither eats nor takes sufficient insulin for a prolonged period of time.

People on insulin pumps should be aware that euglycemic diabetic ketoacidosis could occur during or following exercise if insulin delivery is suspended for too long. Healthcare professionals recommend that insulin delivery is not suspended for more than 1 hour.What is diabetic ketoacidosis?How common is ketoacidosis?Ketoacidosis is most common in children with type 1 diabetes. Diabetes UK notes that in 2009-2010, 9% of children experienced at least one episode of diabetic ketoacidosis.Symptoms of DKAHow is diabetic ketoacidosis diagnosed?Diabetic ketoacidosis is usually diagnosed using blood and urine tests which measure the concentration of ketones in the blood or urine.

In addition to testing ketone levels, levels of potassium may also be measured as part of the treatment to check for signs of hypokalemia (low potassium levels). Potassium may be depleted as a result of excessive urination.Causes and risk factors for diabetic ketoacidosisHow serious is diabetic ketoacidosis?DKA is a serious medical emergency. Without urgent treatment, this diabetes complication can lead to death. With adequate and rapid intervention and treatment, mortality rates are lowered to around 5%.

If someone with diabetes displays the signs of ketoacidosis, the situation should be treated as an emergency.How is diabetic ketoacidosis treated?If an infection has been the underlying causes of DKA, you will

be given a sick day plan to help you take the right amount of insulin. Close observation of the patient to quickly identify and prevent complications is essential and therefore you will usually be treated in hospital until your ketone levels have stabilised and you have returned to eating normally. How do I avoid diabetic ketoacidosis? The best way to prevent diabetic ketoacidosis is to keep good blood glucose control at all times. Regularly testing your blood sugar levels at home will help you to manage your glucose levels.

If you experience difficulty in controlling your diabetes, speak to your GP or consultant who can advise you or may refer you to go on a structured diabetes education course. When to see your doctor If you have diabetes and experience increased thirst for a number of days, you should make an appointment to see your doctor/healthcare team.

If you don't have diabetes, you should see a doctor if the reason for thirst cannot be explained and particularly if you have other symptoms of diabetes, in particular polyuria and polyphagia. Causes of polydipsia Increased thirst and diabetes Recognising symptoms of polydipsia Recognising the symptoms of polyuria The most common sign of polyuria is producing abnormally large volumes of urine at regular intervals throughout the day and at night.

If you are concerned about the amount you urinate and think you may have polyuria, you should make a note each day of how much you drink; how often you urinate and how much urine you produce every time you go to the toilet. Causes of polyuria When to see your doctor about polyuria You should consult your doctor if you have excessive urination over several days that cannot be explained by an increase in fluids or medications. Other causes of polyuria include: Polyuria as a symptom of diabetes Hypoglycemia Having a low amount of sugar in your blood (hypoglycemia) can lead to dizziness by causing the brain cells to malfunction. Causes of dizziness Certain medications Some medications, including those used to treat people with diabetes, can cause dizzy spells. The instruction leaflet that comes with a medicine will list any possible side effects of the drug. Low blood pressure When to see your doctor If you are suffering from bouts of dizziness that are recurrent or persistent you should go and see a doctor. They will likely ask questions to gauge whether there is a pattern to the feelings of dizziness, so keeping a record of dizzy spells prior to your appointment may be helpful. Dehydration Causes of slow wound healing Diabetes and slow healing wounds When to see your doctor If you have genital itching that does not disappear after a couple days or more, or causes you concern, talk to your doctor or another healthcare professional.

Failure to seek professional medical advice could lead to further problems, such as spread of infectious disease through close body contact (usually sexual contact) or a secondary skin infection.

Additionally, it could mean an underlying disease, such as type 2 diabetes, is left diagnosed, thus increasing your risk of diabetic complications.

If you have diabetes and are regularly getting genital itching, it could be a sign that your blood glucose levels are too high. Your health team may be able to advise whether this is the case and, if so, how to bring your blood glucose levels under better control.

What are the causes of genital itchiness? Nausea and Vomiting Most, if not all of us will be familiar with the feeling of nausea, which is basically the feeling of needing to be sick, felt in the stomach area.

Both nausea and vomiting can be a sign of a number of underlying health conditions, including diabetes.

When there is an issue that can affect the stomach or gastric system of their body, people can feel sick.

Even if it is a fairly tenuous connection, such as angina affecting blood flow, the sufferer may still feel queasy. Diabetes and genital itching Causes of nausea Both type 1 diabetes and type 2 diabetes can cause nausea or vomiting in several ways.

Recognising genital itching Hyperglycemia and Hypoglycemia As the blood glucose levels rise and fall, the body's metabolism can get interrupted and confused which can lead to a mixed feeling of nausea.

Low blood pressure (Hypotension) None None Certain medications The side effect of a lot of drugs is a feeling of nausea, and even vomiting. Metformin, the most widely used diabetes drug, is known to have nauseating side effects. Gastroparesis Due to neuropathy, the body may not be able to move food from the stomach or along the intestines.

This can cause a back log of food, which can result in sickness. Coronavirus and diabetes The prevention mechanisms outlined below are useful to reduce the risk of becoming infected and control the spread.

Diabetes can make you more susceptible to illness. It is one of the underlying conditions reported to be associated with the onset of more severe symptoms in individuals affected by the coronavirus.

However, there are steps to take to keep your blood glucose levels well controlled to help reduce your risk of becoming ill. Eating well, testing blood sugars regularly, reducing stress and getting plenty of sleep can help with blood sugar control.

Dan Howarth, head of care at Diabetes UK, said: „Coronavirus or Covid-19 can cause complications in people with diabetes.

„If you have diabetes and you have symptoms such as cough, high temperature and feeling short of breath, you need to monitor your blood sugar closely and call the NHS 111 phone service.„ Symptoms Simple steps to lower your risk of contracting the virus There are actions you can take

to reduce your risk of contracting the virus and help limit the spread among communities.

1. Wash your hands regularly

It might sound simple, but regular hand washing is important as it can help kill any viruses that may be on your hands.

You should thoroughly wash your hands with soap and water for at least 20 seconds (handy tip ,Äi sing happy birthday to yourself twice whilst washing). Take notice of areas you might miss including the back of your hands, between your fingers and around the nails. Or use an alcohol-based hand rub. The NHS recommends ensuring you wash your hands when you get home or arrive at work.

2. Maintain a distance

Avoid close contact with people who are unwell. Keeping at least a 1-meter (3 feet) distance between yourself and anyone who is coughing/ sneezing is recommended by The World Health Organisation.

3. Practice good hygiene

Be sure to cover your mouth and nose when you cough or sneeze. You should not use your hands to do this. Covering your mouth and nose with a tissue or your bent elbow is more appropriate. It is important to dispose of used tissues immediately and thoroughly wash your hands afterwards.

4. Keep your hands away from your face

Our hands touch many surfaces and can transfer a virus from surfaces into your body. A simple step to minimise this risk is to avoid touching your eyes, nose or mouth if your hands are not clean.

5. Stay informed and follow official advice

The spread of the coronavirus is an ongoing situation. It is important to stay informed with the latest information and to protect yourself and others from COVID-19 following advice from your healthcare provider, your national and local public health authority. What is the risk?NoneNoneShould I be worried?NoneNoneNoneNoneNoneNone NoneNone NoneNone Treatment for type 1 diabetesThe impairment of the pancreas,Ä ability to produce insulin in type 1 diabetes means that insulin treatment is necessary.

Most people will take insulin by injection with insulin pens. Insulin can also be delivered by wearing an insulin pump. Use of an insulin pump will be considered in people that express an interest in having one and that meet certain eligibility criteria.

It is important that you are given education on how to balance insulin doses with dietary intake and physical activity and how to use blood glucose testing to help you control your diabetes.

Staying physically active and exercising regularly and eating a healthy diet are also important towards maintaining good blood glucose control and minimising the risk of long term diabetes complications. Although

diet and exercise have a role to play in type 1 diabetes management, they cannot reverse the disease or eliminate the need for insulin.

How to test your blood glucose

How to treat a hypo

How to inject insulinType 1 diabetes symptomsType 1 diabetes and complicationsType 1 diabetes is a serious condition which can carry a significant risk of both short term and long term complications.Type 1 causesShort term complicationsShort term complications can occur if blood glucose levels go too low or if insulin injections are missed. The short term complications that can occur are:

Hypoglycemia ,À too low blood sugar levels

Ketoacidosis ,À which can occur if insulin doses are missed or blood glucose levels become too highDiagnosisLong term complicationsType 1 diabetes can lead to the development of the following long term diabetes complications:

Heart disease

Stroke

Retinopathy

Kidney disease

Neuropathy

Whilst the list of complications is a scary prospect, the chances of developing these can be significantly reduced by maintaining good control of your blood glucose levels and ensuring you attend all your diabetic complication screening appointments.Long term complicationsNoneNone PreventionIn the future, research may find a way to halt the development of type 1 diabetes but, to date, no intervention has successfully prevented type 1 diabetes in humans. Type 1 diabetes researchResearchers from around the globe are looking for ways to improve type 1 diabetes treatment and to investigate possible cures. Important research areas include:

Artificial pancreas

Encapsulated islet cells

Diabetes vaccines How to treat your hypoTo treat the hypo, you need to take about 15 to 20 grams of quick acting carbohydrate.Noticing you,Àre having a hypoTake a quick acting source of sugarGlucose tablets are ideal as they act very quickly and will take you out of the hypo quicker. They are also relatively easy to judge how much sugar you are taking.Check it is a hypo by blood glucose testingSugary drinks (Coke, Pepsi, etc)Glucose tablets and glucose juice are ideal as they act very quickly and will take you out of the hypo as quickly as possible. They are also relatively easy to judge how much sugar you are taking.

You can also have five jelly baby sized sweets or four to five sugar lumps.

15-20g of sugar can be found in:

160ml (half a 330ml can) of sugary cola or lemonade

200ml (a small carton) of fruit juice

Sugary drinks can sometimes be a little more difficult to judge how much sugar you are taking but they,Âre still a good source of sugar in an emergency. Act quickly You may also need slower acting carbs If your next meal is not soon, you may also need to take 15-20g of slower acting carbohydrate to prevent a further dip in blood sugar.

15-20g of slower acting carbs can be found in:

A slice of bread

An apple or a banana

A cereal bar Check blood glucose after 15-20 minutes None None Treating severe hypos: seizures When a seizure is occurring, it will not be possible for a person to take sugar. It is also not advised to feed someone when they are having a seizure as this could lead to choking.

Where possible try to ensure the person having the seizure will not hit anything and cause themselves injury.

If they are on the floor, place something soft like a pillow or article of clothing to cushion their head.

Often a seizure will pass after a few minutes and this may allow the person having the seizure to take some sugar. If the seizure persists for more than 5 minutes, call for an ambulance.

Treating severe hypos: Unconsciousness or unable to take sugar If unconsciousness occurs or the person is unable to take sugar, call for an ambulance

If you have a glucagon injection kit, check the glucagon is in date and administer a dose. If you have not given a glucagon dose before, read the instructions carefully before starting.

In some cases, unconsciousness may occur as a result of very high blood sugar levels. You can give the person a blood test to confirm, taking care to ensure their fingers are clean first.

If they have too high sugar levels, glucagon will not treat the problem but should not present a risk. Oral medicines for type 2 diabetes The most commonly used oral medications for type 2 diabetes include:

Metformin: a medicine that reduces insulin resistance and allows the body to use its insulin more effectively. It is regarded as the first-line treatment for type 2 diabetes in most guidelines worldwide.

Sulfonylureas: a medicine that stimulates the pancreas to increase insulin production. Sulfonylureas include gliclazide, glipizide, glimepiride, tolbutamide and glibenclamide. Symptoms of type 2 diabetes Which type of exercise is best and when Recent studies examining the benefits of physical activity on blood glucose levels in people with type 2 diabetes show that, although any form of exercise is beneficial, specific activities and their timing can significantly enhance your health.

With so many different exercise types available, deciding which is the most effective can be overwhelming. The best solution is to choose one that works best for you. This may depend on factors such as your current fitness level, preferences and any other health conditions you may have.

Always consider factors like fitness level and preferences when choosing your activity.

One highly recommended exercise for people with diabetes is cardio which includes walking, jogging, swimming or cycling. Cardio helps improve cardiovascular health and aids in weight management, both essential for managing diabetes. It also helps increase insulin sensitivity, allowing your body to regulate blood sugar levels better.

Strength training also has its advantages. You can increase muscle mass and improve insulin sensitivity and blood sugar control by using weights or resistance bands to strengthen muscles. Additionally, strength training helps prevent muscle loss, which is common in people with diabetes.

Along with cardio exercise and strength training, flexibility exercises are also beneficial. These exercises focus on stretching and improving joint mobility. They can help to reduce the risk of injury and improve overall physical performance. Examples of flexibility exercises include yoga, Pilates and stretching routines.

As for how often to exercise, consistency is key. You should aim for at least 150 minutes of moderate-intensity aerobic exercise per week, spread out over several days, possibly in shorter bouts of 10-15 minutes. Aim to do strength training at least twice weekly, targeting all major muscle groups.

To reap the benefits of your routine, consider the time of day you exercise. According to studies, moderate to vigorous physical activity in the afternoon and evening significantly impacts blood sugar control more than morning exercise and may help reduce insulin resistance and liver fat content.

In short, any movement is good, and more is generally better, especially when well-timed. Risk factors for type 2 diabetes
Delaying or preventing type 2 diabetes
Several factors influence the development of type 2 diabetes. The most significant are lifestyle behaviours commonly associated with urbanisation. Consistent evidence shows that a relatively modest intentional weight loss achieved through a healthy diet and regular physical activity can prevent or delay type 2 diabetes.

A healthy diet includes:

- reducing calories if you are overweight
- replacing saturated fats (eg cream, cheese, butter) with unsaturated fats (eg avocado, nuts, olive and vegetable oils)
- eating dietary fibre (eg fruit, vegetables, whole grains)
- controlling portion sizes to avoid overeating
- avoiding tobacco use, excessive alcohol and added sugar

choosing healthier cooking methods such as baking, grilling, steaming, or sautéing instead of frying

Regular health check-ups are also recommended as early detection of the risk factors can help take proactive steps to prevent or delay type 2 diabetes. Managing type 2 diabetes
Physical activity
Regular physical activity dramatically benefits people with type 1 diabetes. It improves cardiovascular health, builds strength, aids in weight management and helps manage blood glucose levels. Exercise also boosts mood, reduces stress, and increases mental well-being for a healthy lifestyle.

It is important to consider timing your physical activity to avoid low blood glucose (hypoglycaemia), which can occur during or after exercise, especially if insulin levels are too high or carbohydrate intake is too low. Recognising the signs of hypoglycaemia, such as dizziness, confusion, or shakiness, is essential for prompt treatment.

Before starting any exercise programme, consult your healthcare team to help you pick the best time for physical activity and choose an appropriate exercise plan based on your current fitness level, individual needs and insulin regimen.

Remember to:

Adjust insulin dosage to prevent hypoglycaemia.

For longer or intense workouts, consume additional carbohydrates.

Monitor blood glucose levels during exercise and consume carbohydrates if needed. Symptoms of type 1 diabetes
Choosing a type of exercise
Cardio exercises like walking, jogging, swimming or cycling can improve cardiovascular health, manage weight and increase insulin sensitivity. Strength training, using weights or resistance bands, can improve insulin sensitivity and blood sugar management and prevent muscle loss.

Flexibility exercises like yoga and Pilates reduce the risk of injury and enhance physical performance. Management of type 1 diabetes
Tips for safe and effective exercise with type 1 diabetes
Aim for regular physical activity to maintain stable blood glucose levels and enhance the effectiveness of exercise.

Listen to your body ,Â if you experience unusual symptoms, check blood glucose levels and adjust intensity or activity as needed.

Prevent dehydration and maintain normal blood glucose levels by drinking water before, during and after exercising.

When exercising with others, educate them about your condition for a safe and supportive environment.

Carry fast-acting carbs like glucose tablets or fruit juice in case of hypoglycaemia during exercise.

Monitor and track the impact of your exercise routine on blood glucose levels, including insulin and carb adjustments, to make informed decisions. Insulin
Healthy eating for type 1 diabetes
People with type 1 diabetes can eat a variety of food without restrictions. The days of following strict guidelines are long gone, thanks to advancements in insulin regimens and delivery systems. However, to help keep blood glucose levels within the target range and delay or avoid diabetes-related complications, people with type 1 diabetes should follow a healthy and balanced diet that includes all major food groups.

The amount of carbohydrates you eat will affect your blood glucose level, so counting carbohydrate intake is essential to keep these levels stable. This means matching insulin to the amount of carbohydrates you eat and drink.

Choose healthier options such as:

whole grains
starchy foods
fruits and vegetables
pulses (legumes)
unsweetened yoghurt and milk products
nuts and seeds

Avoid sugary drinks and fruit juices for thirst because these can cause spikes in blood glucose levels. However, they can be helpful when treating episodes of low blood glucose, 'hypoglycaemia'. Instead of sugary options, choose water or sugar-free drinks, tea and coffee.

Remember that moderation is key when consuming any food or beverage while managing type 1 diabetes. NoneNoneNone NoneNone NoneNone NoneNoneIDF recommendations for a healthier

diet:NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone Non-alcoholic fatty liver disease (NAFLD)NAFLD/NASH Non-alcoholic fatty liver disease (NAFLD) is linked to obesity and the risk of developing type 2 diabetes. NAFLD occurs when excess fat builds up in the liver. This can progress to non-alcoholic steatohepatitis (NASH), which causes inflammation and liver damage.Cardiovascular disease (CVD)Nerve diseaseNerve disease (diabetic neuropathy) damages nerves due to high blood glucose and pressure. It affects digestion, erectile function, and extremities, particularly the feet. Peripheral neuropathy can cause pain, tingling, and loss of feeling, leading to infections and amputations. People with diabetes have a higher risk of lower limb amputation.

However, comprehensive management and regular foot examinations can prevent this.Eye diseaseOral complicationsOral complications caused by diabetes increase the risk of gum inflammation (periodontitis), a major cause of tooth loss. Periodontitis is also linked to an increased risk of cardiovascular disease. Regular oral check-ups help detect the condition and undiagnosed diabetes, aiding the timely management of oral complications. Annual visits are recommended for symptoms of gum disease, such as bleeding and swelling.Kidney disease

Diabetes during pregnancyDiabetes during pregnancy can cause complications and risks to the foetus if not managed carefully. Women with type 1 and type 2 diabetes should achieve target glucose levels before conception to prevent possible foetal organ damage. High blood glucose can lead to excess foetal weight and complications during delivery and increase the risk of the child developing diabetes in the future. All women with diabetes during pregnancy should strive for target blood glucose levels to minimise complications.NoneNoneNone NoneNone NoneNone The link between diet and GDMDiet plays a crucial role in managing gestational diabetes. Generally, women with gestational diabetes should eat a diet rich in vegetables, whole grains, lean proteins, and healthy fats. In addition, smaller, more frequent meals throughout the day can help regulate blood sugar levels.Causes and risk factors of GDM

Managing GDM through exerciseRegular exercise can help manage gestational diabetes by lowering blood sugar levels and improving insulin sensitivity. Healthcare professionals generally recommend moderate-intensity exercise for at least 30 minutes a day, most days. This can include brisk walking, swimming, or prenatal yoga.Commons symptoms of GDMThe importance of early detectionEarly detection of gestational diabetes is crucial for prompt treatment, which can help prevent complications for both mother and baby. Women at high risk of gestational diabetes should be screened during their first prenatal visit. Further recommendations advise screening all pregnant women for gestational diabetes between 24 and 28 weeks.Managing GDMNoneNoneNoneNoneNone

NoneNone NoneNone NoneNoneOther types of

diabetesNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone InheritanceType 2 diabetes does not have a clear pattern of inheritance, although many affected individuals have at least one close family member, such as a parent or sibling, with the disease. The risk of developing type 2 diabetes increases with the number of affected family members. The increased risk is likely due in part to shared genetic factors, but it is also related to lifestyle influences (such as eating and exercise habits) that are shared by members of a family.DescriptionOther Names for This ConditionAdult-onset diabetes

Adult-onset diabetes mellitus
AODM

Diabetes mellitus, adult-onset
Diabetes mellitus, non-insulin-dependent
Diabetes mellitus, type 2
Diabetes mellitus, type II
Maturity-onset diabetes
Maturity-onset diabetes mellitus

NIDDM
Noninsulin-dependent diabetes mellitus
T2D

Type 2 diabetes mellitusFrequencyNoneNoneCausesNoneNoneNoneNoneNoneNoneNoneNone NoneNone What are the symptoms of type 2 diabetes?Many people with type 2 diabetes have no symptoms at all. If you do have them, the symptoms develop slowly over several years. They might be so mild that you do not notice them. The symptoms can include:

Increased thirst and urination
Increased hunger
Feeling tired
Blurred vision
Numbness or tingling in the feet or hands
Sores that do not heal
Unexplained weight lossWhat is type 2 diabetes?How is type 2 diabetes diagnosed?Your health care provider will use blood tests to diagnose type 2 diabetes. The blood tests include:

A1C test, which measures your average blood sugar level over the past 3 months
Fasting plasma glucose (FPG) test, which measures your current blood sugar level. You need to fast (not eat or drink anything except water) for at least 8 hours before the test.

Random plasma glucose (RPG) test, which measures your current blood sugar level. This test is used when you have diabetes symptoms and the provider does not want to wait for you to fast before having the test. What causes type 2 diabetes? What are the treatments for type 2 diabetes? Treatment for type 2 diabetes involves managing your blood sugar levels. Many people are able to do this by living a healthy lifestyle. Some people may also need to take medicine.:

A healthy lifestyle includes following a healthy eating plan and getting regular physical activity. You need to learn how to balance what you eat and drink with physical activity and diabetes medicine, if you take any. Medicines for diabetes include oral medicines, insulin, and other injectable medicines. Over time, some people will need to take more than one type of medicine to control their diabetes.

You will need to check your blood sugar regularly. Your health care provider will tell you how often you need to do it.

It's also important to keep your blood pressure and cholesterol levels close to the targets your provider sets for you. Make sure to get your screening tests regularly. Who is at risk for type 2 diabetes? Can type 2 diabetes be prevented? You can take steps to help prevent or delay type 2 diabetes by losing weight if you are overweight, eating fewer calories, and being more physically active. If you have a condition which raises your risk for type 2 diabetes, managing that condition may lower your risk of getting type 2 diabetes. NoneNoneNone NoneNone NoneNone Your Blood Sugar and Exercise The blood sugar response to exercise is not always easy to predict. Different types of exercises can make blood sugar go up or down. Most of the time, your response to any specific exercise will be the same. Testing your blood sugar more often is the safest plan.

Check your blood sugar before you exercise. Also, check it during exercise if you are working out for more than 45 minutes, especially if this is an exercise you have not done regularly.

Check your blood sugar again right after exercise, and later on. Exercise can cause your blood sugar to decrease for up to 12 hours after you are done.

If you use insulin, ask your provider when and what you should eat before you exercise. Also, find out how to adjust your insulin dose when you exercise.

Do not inject insulin in a part of your body that you are exercising, such as the shoulders or thighs.

Keep a snack nearby that can raise your blood sugar quickly. Examples are:

Five or six small hard candies

One tablespoon (tbsp), or 15 grams, of sugar, plain or dissolved in water

One tbsp, or 15 milliliters (mL) of honey or syrup

Three or four glucose tablets

One half of a 12-ounce can (177 mL) of regular, non-diet soda or sports drink

One half cup (4 ounces or 125 mL) of fruit juice

Have a larger snack if you will be exercising more than usual. You can also have more frequent snacks. You may need to adjust your medicine if you are planning unusual exercise.

If exercise frequently causes your blood sugar to be low, talk with your provider. You may need to lower the dose of your medicine. Exercise will help your diabetes. Your feet and exercise: Always check your feet and shoes for any problems before and after exercise. You might not feel pain in your feet because of your diabetes. You may not notice a sore or blister on your foot. Call your provider if you notice any changes on your feet. Small problems can become serious if they go untreated.

Wear socks that keep moisture away from your feet. Also, wear comfortable, well-fitting shoes.

If you have redness, swelling and warmth across the middle of your foot or ankle after exercise let your provider know right away. This can be a sign of a joint problem that is more common in people with diabetes, called Charcot foot. Talk to Your Doctor First

Getting Started

Questions

Treatment The goal of treatment is to stop bone loss, allow bones to heal, and prevent bones from moving out of place (deformity).

Immobilization -- Your provider will have you wear a total contact cast. This will help limit movement of your foot and ankle. You will likely be asked to keep your weight off your foot entirely, so you will need to use crutches, a knee-walker device, or wheelchair.

You will have new casts placed on your foot as the swelling comes down. Healing can take a couple of months or more.

Protective footwear -- Once your foot has healed, your provider may suggest footwear to help support your foot and prevent re-injury. These may include:

Splints

Braces

Orthotic insoles

Charcot restraint orthotic walker, a special boot that provides even pressure to the whole foot

Activity changes -- You will always be at risk for Charcot foot coming back or developing in your other foot. So your provider may recommend activity changes, such as limiting your standing or walking, to protect your feet. You may need to use a wheelchair to limit activity on your feet.

Surgery -- You may need surgery if you have foot ulcers that keep coming back or severe foot or ankle deformity. Surgery can help stabilize your foot and ankle joints and remove bony areas to prevent foot ulcers.

Ongoing monitoring -- You will need to see your provider for checkups and take steps to protect your feet for the rest of your life.

Causes

Outlook (Prognosis) The prognosis depends on the severity of foot deformity and

how well you heal without infection. Many people do well with braces, activity changes, and ongoing monitoring. SymptomsPossible ComplicationsSevere deformity of the foot increases the risk of foot ulcers. If ulcers or the underlying bone becomes infected and hard to treat, it may require amputation.

Exams and TestsWhen to Contact a Medical ProfessionalContact your provider if you have diabetes and your foot is warm, red, or swollen.PreventionNoneNone Alternative NamesCharcot joint; Neuropathic arthropathy; Charcot neuropathic osteoarthropathy; Charcot arthropathy; Charcot osteoarthropathy; Diabetic Charcot foot NoneNone

NoneNoneFunctionNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone TreatmentAt first, the goal of treatment is to lower your high blood glucose level. Long-term goals are to prevent complications. These are health problems that can result from having diabetes.

The most important lifestyle approach to treating and managing type 2 diabetes is by being active and eating healthy foods.

Everyone with diabetes should receive proper education and support about the best ways to manage their diabetes. Ask your provider about seeing a certified diabetes care and education specialist (CDCES) and a dietitian.

LEARN THESE SKILLS

Learning diabetes management skills will help you live well with diabetes. These skills help prevent health problems and the need for medical care. Skills include:

How to test and record your blood glucose

What, when, and how much to eat

How to safely increase your activity and control your weight

How to take medicines, if needed

How to recognize and treat low and high blood sugar

How to handle sick days

Where to buy diabetes supplies and how to store them

It may take several months to learn these skills. Keep learning about diabetes, its complications, and how to control and live well with the disease. Stay up-to-date on new research and treatments. Make sure you are getting information from trustworthy sources, such as your provider and diabetes educator.

MANAGING YOUR BLOOD SUGAR

Checking your blood sugar level yourself and writing down the results tells you how well you are managing your diabetes. Talk to your provider and diabetes educator about how often to check.

To check your blood sugar level, you use a device called a glucose meter. Usually, you prick your finger with a small needle, called a lancet. This gives you a tiny drop of blood. You place the blood on a test strip and put the strip into the meter. The meter gives you a reading that tells you the level of your blood sugar.

Your provider or diabetes educator will help set up a testing schedule for you. Your provider will help you set a target range for your blood sugar numbers. Keep these factors in mind:

Most people with type 2 diabetes only need to check their blood sugar once or twice a day.

If your blood sugar level is under control, you may only need to check it a few times a week.

You may test yourself when you wake up, before meals, and at bedtime.

You may need to test more often when you are sick or under stress.

You may need to test more often if you are having more frequent low blood sugar symptoms.

Keep a record of your blood sugar for yourself and your provider. This can often be done most easily using a website designed for this purpose.

Based on your numbers, you may need to make changes to your meals, activity, or medicines to keep your blood sugar level in the right range.

Always bring your blood glucose meter to medical appointments so the data can be downloaded and discussed.

Your provider may recommend that you use a continuous glucose monitor (CGM) to measure blood sugar if:

You are using insulin injections many times a day

You have had an episode of severe low blood sugar

Your blood sugar level varies a lot

The CGM has a sensor that is inserted just under the skin to measure glucose in your tissue fluid every 5 minutes.

HEALTHY EATING AND WEIGHT CONTROL

Work closely with your health care providers to learn how much fat, protein, and carbohydrates you need in your diet. Your meal plans should fit your lifestyle and habits and should include foods that you like.

Managing your weight and having a well-balanced diet are important. Some people with type 2 diabetes can stop taking medicines after losing weight. This does not mean that their diabetes is cured. They still have diabetes.

Obese people whose diabetes is not well managed with diet and medicine may consider weight loss (bariatric) surgery.

REGULAR PHYSICAL ACTIVITY

Regular activity is important for everyone. It is even more important when you have diabetes. Exercise is good for your health because it:

Lowers your blood sugar level without medicine

Burns extra calories and fat to help manage your weight

Improves blood flow and blood pressure

Increases your energy level

Improves your ability to handle stress

Talk to your provider before starting any exercise program. People with type 2 diabetes may need to take special steps before, during, and after

physical activity or exercise, including adjusting doses of insulin if needed.

Diabetes and exercise

MEDICINES TO TREAT DIABETES

If diet and exercise do not help keep your blood sugar at normal or near-normal levels, your provider may prescribe medicine. Since these medicines help lower your blood sugar level in different ways, your provider may have you take more than one medicine.

Some of the most common types of medicines are listed below. They are taken by mouth or injection.

Alpha-glucosidase inhibitors

Biguanides

Bile acid sequestrants

DPP-4 inhibitors

Injectable medicines (GLP-1 agonists)

Meglitinides

SGLT2 inhibitors

Sulfonylureas

Thiazolidinediones

You may need to take insulin if your blood sugar cannot be controlled with some of the above medicines. Most commonly, insulin is injected under the skin using a syringe, insulin pen, or pump. Another form of insulin is the inhaled type. Insulin cannot be taken by mouth because the acid in the stomach destroys the insulin.

PREVENTING COMPLICATIONS

Your provider may prescribe medicines or other treatments to reduce your chance of developing some of the more common complications of diabetes, including:

Eye disease

Kidney disease

Heart disease and stroke

FOOT CARE

People with diabetes are more likely than those without diabetes to have foot problems. Diabetes damages the nerves. This can make your feet less able to feel pressure, pain, heat, or cold. You may not notice a foot injury until you have severe damage to the skin and tissue below, or you get a severe infection.

Diabetes can also damage blood vessels. Small sores or breaks in the skin may become deeper skin sores (ulcers). The affected limb may need to be amputated if these skin ulcers do not heal or become larger, deeper, or infected.

To prevent problems with your feet:

Stop using tobacco, if you use it.

Improve control of your blood sugar.

Get a foot exam by your provider at least twice a year to learn if you have nerve damage.

Ask your provider to check your feet for problems such as calluses, bunions or hammertoes. These need to be treated to prevent skin breakdown and ulcers.

Check and care for your feet every day. This is very important when you already have nerve or blood vessel damage or foot problems.

Treat minor infections, such as athlete's foot, right away.

Use moisturizing lotion on dry skin.

Make sure you wear the right kind of shoes. Ask your provider what type of shoe is right for you.

Diabetic foot care

EMOTIONAL HEALTH

Living with diabetes can be stressful. You may feel overwhelmed by everything you need to do to manage your diabetes. But taking care of your emotional health is just as important as your physical health.

Ways to relieve stress include:

Listening to relaxing music

Meditating to take your mind off your worries

Deep breathing to help relieve physical tension

Doing yoga, tai chi, or progressive relaxation

Feeling sad or down (depressed) or anxious sometimes is normal. But if you have these feelings often and they're getting in the way of managing your diabetes, talk with your health care team. They can find ways to help you feel better.

People with diabetes should make sure to keep up on their vaccination schedule. Causes Support Groups There are many diabetes resources that can help you understand more about type 2 diabetes. You can also learn ways to manage your condition so you can live well with diabetes. Symptoms Outlook (Prognosis) Diabetes is a lifelong disease and there is no cure.

Some people with type 2 diabetes no longer need medicine for blood sugar control if they lose weight and become more active. When they reach their ideal weight, their body's own insulin and a healthy diet can control their blood sugar level. Exams and Tests Possible Complications After many years, diabetes can lead to serious health problems:

You could have eye problems, including trouble seeing (especially at night), cataracts, and light sensitivity. You could become blind. Your feet and skin can develop sores and infections. If the wounds do not heal properly, your foot or leg may need to be amputated. Infections can also cause pain and itching in the skin.

Diabetes may make it harder to control your blood pressure and cholesterol. This can lead to a heart attack, stroke, and other problems. It can become harder for blood to flow to your legs and feet.

Nerves in your body can get damaged, causing pain, tingling, and numbness.

Because of nerve damage, you could have problems digesting the food you eat. You could feel weakness or have trouble going to the bathroom. Nerve damage can make it harder for men to have an erection.

High blood sugar and other problems can lead to kidney damage. Your kidneys may not work as well as they used to. They may even stop working so that you need dialysis or a kidney transplant.

High blood sugar can weaken your immune system. This may make it more likely for you to get infections, including life-threatening skin and fungal infections.

When to Contact a Medical Professional
Prevention You can help prevent type 2 diabetes by staying at a healthy body weight. You can get to a healthy weight by eating healthy foods, controlling your portion sizes, and leading an active lifestyle. Some medicines can also delay or prevent type 2 diabetes in people with prediabetes who are at risk for developing the disease.
Alternative Names Diabetes - type II; Adult-onset diabetes; Diabetic - type 2 diabetes; Oral hypoglycemic - type 2 diabetes; High blood sugar - type 2 diabetes
Exercise Regular exercise is good for people with diabetes. It lowers blood sugar. Exercise also:

- Improves blood flow

- Lowers blood pressure

It helps burn extra fat so that you can keep your weight down. Exercise can even help you handle stress and improves your mood.

Try walking, jogging, or biking for 30 to 60 minutes every day. Pick an activity that you enjoy and you are more likely to stick with. Bring food or juice with you in case your blood sugar gets too low. Drink extra water. Try to avoid sitting for more than 30 minutes at any one time.

Wear a diabetes ID bracelet. In case of an emergency, people know you have diabetes and can help you get the right medical attention.

Always check with your provider before beginning an exercise program. Your provider can help you choose an exercise program that is safe for you.
Symptoms of Type 2 Diabetes
Check Your Blood Sugar You may be asked to check your blood sugar at home. This will tell you and your provider how well your diet, exercise, and medicines are working. A device called a glucose meter can provide a blood sugar reading from just a drop of blood.

A doctor, nurse, or diabetes educator will help set up a home testing schedule for you. Your doctor will help you set your blood sugar goals.

Many people with type 2 diabetes need to check their blood sugar only once or twice a day. Some people need to check more often.

If your blood sugar is in control, you may need to check your blood sugar only a few times a week.

The most important reasons to check your blood sugar are to:

- Monitor if the diabetes medicines you're taking have a risk of causing low blood sugar (hypoglycemia).

- Use the blood sugar number to adjust the dose of insulin or other medicine you are taking.

Use the blood sugar number to help you make good nutrition and activity choices to regulate your blood sugar. **Take Control of Your Diabetes** You May Need Medicines If diet and exercise are not enough, you may need to take medicine. It will help keep your blood sugar in a healthy range.

There are many diabetes medicines that work in different ways to help control your blood sugar. Many people with type 2 diabetes need to take more than one medicine to control their blood sugar. You may take medicines by mouth or as a shot (injection). Certain diabetes medicines may not be safe if you are pregnant. So, talk to your doctor about your medicines if you're thinking of becoming pregnant.

If medicines don't help you control your blood sugar, you may need to take insulin. Insulin must be injected under the skin. You'll receive special training to learn how to give yourself injections. Most people find that insulin injections are easier than they thought. **Eat Healthy Foods and Manage Your Weight** Learn to Prevent Long-term Problems of Diabetes People with diabetes have a high chance of getting high blood pressure and high cholesterol. You may be asked to take medicine to prevent or treat these conditions. Medicines may include:

An ACE inhibitor or another medicine called an ARB for high blood pressure or kidney problems.

A medicine called a statin to keep your cholesterol low.

Aspirin to keep your heart healthy.

Do not smoke or use e-cigarettes. Smoking makes diabetes worse. If you do smoke, work with your provider to find a way to quit.

Diabetes can cause foot problems. You may get sores or infections. To keep your feet healthy:

Check and care for your feet every day.

Make sure you're wearing the right kind of socks and shoes. Check your shoes and socks daily for any worn spots, which could lead to sores or ulcerations. **See Your Doctor Regularly** NoneNone NoneNone Symptoms and Causes Symptoms of Type 2 diabetes tend to develop slowly over time. It's important to see a healthcare provider if you have them. **Overview** What are the symptoms of Type 2 diabetes? Symptoms of Type 2 diabetes tend to develop slowly over time. They can include:

Increased thirst (polydipsia).

Peeing more frequently.

Feeling hungrier than usual.

Fatigue.

Slow healing of cuts or sores.

Tingling or numbness in your hands or feet.

Blurred vision.

Dry skin.

Unexplained weight loss.

People assigned female at birth (AFAB) may experience frequent vaginal yeast infections and/or urinary tract infections (UTIs).

If you have these symptoms, it's important to see your healthcare provider. Simple blood tests can diagnose T2D. **What is Type 2**

diabetes?What causes Type 2 diabetes?The main cause of Type 2 diabetes is insulin resistance.

Insulin resistance happens when cells in your muscles, fat and liver don't respond as they should to insulin. Insulin is a hormone your pancreas makes that's essential for life and regulating blood sugar levels.

If your body isn't responding to insulin properly, your pancreas has to make more insulin to try to overcome your increasing blood glucose levels (hyperinsulinemia). If your cells become too resistant to insulin and your pancreas can't make enough insulin to overcome it, it leads to Type 2 diabetes.

Several factors can contribute to insulin resistance, including:

Genetics.

Excess body fat, especially in your belly and around your organs (visceral fat).

Physical inactivity.

Eating highly processed, high-carbohydrate foods and saturated fats frequently.

Certain medications, like long-term corticosteroid use.

Hormonal disorders, like hypothyroidism and Cushing syndrome.

Chronic stress and a lack of quality sleep.

How common is Type 2 diabetes?Is Type 2 diabetes genetic?The cause of T2D is complex, but researchers know that genetics play a strong role. Your lifetime risk of developing T2D is 40% if you have one biological parent with T2D and 70% if both of your biological parents have it.

Researchers have identified at least 150 DNA variations linked to the risk of developing T2D, some increase your risk and others decrease it. Some of these variations may directly play a role in insulin resistance and insulin production. Others may increase your risk of T2D by increasing your tendency to have overweight or obesity.

These genetic variations likely act together with health and lifestyle factors to influence your overall risk of T2D.

What are the risk factors for Type 2 diabetes?Diagnosis and TestsNone

How is Type 2 diabetes diagnosed?The following blood tests help your healthcare provider diagnose Type 2 diabetes:

Fasting plasma glucose test: This lab test checks your blood sugar level. You typically need to get this test in the morning after an eight-hour fast (nothing to eat or drink except water). A result of 126 mg/dL or higher means you have diabetes.

Random plasma glucose test: This lab test also checks your blood sugar, but you can get it at any time without fasting. A result of 200 mg/dL or higher means you have diabetes.

A1C test: This lab test measures your average blood sugar levels over the past two to three months. A result of 6.5% or higher means you have diabetes.

In some cases, your provider may order an autoantibody blood test to see if you have Type 1 Diabetes instead of T2D.

NoneNone

Who does Type 1

diabetes affect? Anyone at any age can develop Type 1 diabetes (T1D), though the most common age at diagnosis is between the ages of 4 to 6 and in early puberty (10 to 14 years).

In the United States, people who are non-Hispanic white are most likely to get Type 1 diabetes, and it affects people assigned female at birth and people assigned male at birth almost equally.

While you don't have to have a family member with Type 1 diabetes to develop the condition, having a first-degree family member (parent or sibling) with Type 1 diabetes increases your risk of developing it. Overview How common is Type 1 diabetes? Type 1 diabetes is relatively common. In the United States, approximately 1.24 million people live with Type 1 diabetes, and that number is expected to grow to five million by 2050.

Type 1 diabetes is one of the most common chronic diseases that affect children in the United States, though adults can be diagnosed with the disease as well. What is Type 1 diabetes? Symptoms and Causes None What is the difference between Type 1 diabetes and Type 2 diabetes? What are the symptoms of Type 1 diabetes? Symptoms of Type 1 diabetes typically start mild and get progressively worse or more intense, which could happen over several days, weeks or months. This is because your pancreas makes less and less insulin.

Symptoms of Type 1 diabetes include:

Excessive thirst.

Frequent urination, including frequent full diapers in infants and bedwetting in children.

Excessive hunger.

Unexplained weight loss.

Fatigue.

Blurred vision.

Slow healing of cuts and sores.

Vaginal yeast infections.

If you or your child has these symptoms, it's essential to see your healthcare provider and ask to be tested for Type 1 diabetes as soon as possible. The sooner you're diagnosed, the better.

If a diagnosis is delayed, untreated Type 1 diabetes can be life-threatening due to a complication called diabetes-related ketoacidosis (DKA). Seek emergency medical care if you or your child are experiencing any combination of the following symptoms:

Fruity-smelling breath.

Nausea and vomiting.

Abdominal (stomach) pain.

Rapid breathing.

Confusion.

Drowsiness.

Loss of consciousness. What causes Type 1 diabetes? None Diagnosis and Tests How is Type 1 diabetes diagnosed? Type 1 diabetes is relatively simple to

diagnose. If you or your child has symptoms of Type 1 diabetes, your healthcare provider will order the following tests:

Blood glucose test: Your healthcare provider uses a blood glucose test to check the amount of sugar in your blood. They may ask you to do a random test (without fasting) and a fasting test (no food or drink for at least eight hours before the test). If the result shows that you have very high blood sugar, it typically means you have Type 1 diabetes.

Glycosylated hemoglobin test (A1c): If blood glucose test results indicate that you have diabetes, your healthcare provider may do an A1c test. This measures your average blood sugar levels over three months.

Antibody test: This blood test checks for autoantibodies to determine if you have Type 1 or Type 2 diabetes. Autoantibodies are proteins that attack your body's tissue by mistake. The presence of certain autoantibodies means you have Type 1 diabetes. Autoantibodies usually aren't present in people who have Type 2 diabetes.

Your provider will also likely order the following tests to assess your overall health and to check if you have diabetes-related ketoacidosis, a serious acute complication of undiagnosed or untreated Type 1 diabetes:

Basic metabolic panel: This is a blood sample test that measures eight different substances in your blood. The panel provides helpful information about your body's chemical balance and metabolism.

Urinalysis: A urinalysis (also known as a urine test) is a test that examines the visual, chemical and microscopic aspects of your urine (pee). Providers use it to measure several different aspects of your urine. In the case of a Type 1 diagnosis, they'll likely order the test to check for ketones, which is a substance your body releases when it has to break down fat for energy instead of using glucose. A high amount of ketones causes your blood to become acidic, which can be life-threatening.

Arterial blood gas: An arterial blood gas (ABG) test is a blood test that requires a sample from an artery in your body to measure the levels of oxygen and carbon dioxide in your blood.

Management and Treatment

What kind of doctor treats Type 1 diabetes? An endocrinologist, a healthcare provider who specializes in treating hormone-related conditions, treats people who have Type 1 diabetes. Some endocrinologists specialize in diabetes.

If your child has Type 1 diabetes, they'll need to see a pediatric endocrinologist.

You'll need to see your endocrinologist regularly to ensure that your Type 1 diabetes management is working well. Your insulin needs will change throughout your life.

How common is diabetes? Diabetes is common. Approximately 37.3 million people in the United States have diabetes, which is about 11% of the population. Type 2 diabetes is the most common form, representing 90% to 95% of all diabetes cases.

About 537 million adults across the world have diabetes. Experts predict this number will rise to 643 million by 2030 and 783 million by 2045.

Overview

Symptoms and Causes

None

What is diabetes? What are the symptoms of diabetes? Symptoms of diabetes include:

Increased thirst (polydipsia) and dry mouth.
Frequent urination.
Fatigue.
Blurred vision.
Unexplained weight loss.
Numbness or tingling in your hands or feet.
Slow-healing sores or cuts.
Frequent skin and/or vaginal yeast infections.
It's important to talk to your healthcare provider if you or your child has these symptoms.

Additional details about symptoms per type of diabetes include:

Type 1 diabetes: Symptoms of T1D can develop quickly, over a few weeks or months. You may develop additional symptoms that are signs of a severe complication called diabetes-related ketoacidosis (DKA). DKA is life-threatening and requires immediate medical treatment. DKA symptoms include vomiting, stomach pains, fruity-smelling breath and labored breathing.

Type 2 diabetes and prediabetes: You may not have any symptoms at all, or you may not notice them since they develop slowly. Routine bloodwork may show a high blood sugar level before you recognize symptoms. Another possible sign of prediabetes is darkened skin on certain parts of your body (acanthosis nigricans).

Gestational diabetes: You typically won't notice symptoms of gestational diabetes. Your healthcare provider will test you for gestational diabetes between 24 and 28 weeks of pregnancy. What are the types of diabetes? What causes diabetes? Too much glucose circulating in your bloodstream causes diabetes, regardless of the type. However, the reason why your blood glucose levels are high differs depending on the type of diabetes.

Causes of diabetes include:

Insulin resistance: Type 2 diabetes mainly results from insulin resistance. Insulin resistance happens when cells in your muscles, fat and liver don't respond as they should to insulin. Several factors and conditions contribute to varying degrees of insulin resistance, including obesity, lack of physical activity, diet, hormonal imbalances, genetics and certain medications.

Autoimmune disease: Type 1 diabetes and LADA happen when your immune system attacks the insulin-producing cells in your pancreas.

Hormonal imbalances: During pregnancy, the placenta releases hormones that cause insulin resistance. You may develop gestational diabetes if your pancreas can't produce enough insulin to overcome the insulin resistance. Other hormone-related conditions like acromegaly and Cushing syndrome can also cause Type 2 diabetes.

Pancreatic damage: Physical damage to your pancreas, from a condition, surgery or injury, can impact its ability to make insulin, resulting in Type 3c diabetes.

Genetic mutations: Certain genetic mutations can cause MODY and neonatal diabetes.

Long-term use of certain medications can also lead to Type 2 diabetes, including HIV/AIDS medications and corticosteroids. What are the

complications of diabetes?NoneNone Acute diabetes complicationsAcute diabetes complications that can be life-threatening include:

Hyperosmolar hyperglycemic state (HHS): This complication mainly affects people with Type 2 diabetes. It happens when your blood sugar levels are very high (over 600 milligrams per deciliter or mg/dL) for a long period, leading to severe dehydration and confusion. It requires immediate medical treatment.

Diabetes-related ketoacidosis (DKA): This complication mainly affects people with Type 1 diabetes or undiagnosed T1D. It happens when your body doesn't have enough insulin. If your body doesn't have insulin, it can't use glucose for energy, so it breaks down fat instead. This process eventually releases substances called ketones, which turn your blood acidic. This causes labored breathing, vomiting and loss of consciousness. DKA requires immediate medical treatment.

Severe low blood sugar (hypoglycemia): Hypoglycemia happens when your blood sugar level drops below the range that's healthy for you. Severe hypoglycemia is very low blood sugar. It mainly affects people with diabetes who use insulin. Signs include blurred or double vision, clumsiness, disorientation and seizures. It requires treatment with emergency glucagon and/or medical intervention. Long-term diabetes complicationsBlood glucose levels that remain high for too long can damage your body's tissues and organs. This is mainly due to damage to your blood vessels and nerves, which support your body's tissues.

Cardiovascular (heart and blood vessel) issues are the most common type of long-term diabetes complication. They include:

Coronary artery disease.

Heart attack.

Stroke.

Atherosclerosis.

Other diabetes complications include:

Nerve damage (neuropathy), which can cause numbness, tingling and/or pain.

Nephropathy, which can lead to kidney failure or the need for dialysis or transplant.

Retinopathy, which can lead to blindness.

Diabetes-related foot conditions.

Skin infections.

Amputations.

Sexual dysfunction due to nerve and blood vessel damage, such as erectile dysfunction or vaginal dryness.

Gastroparesis.

Hearing loss.

Oral health issues, such as gum (periodontal) disease.

Living with diabetes can also affect your mental health. People with diabetes are two to three times more likely to have depression than people without diabetes.

What if I miss a dose?If you miss a dose, take it as soon as you can. If it is almost time for your next dose, take only that dose. Do not take double or extra doses.**What is this medication?**What may interact with this medication?**Do not take this medication with any of the following:**

Certain contrast medications given before X-rays, CT scans, MRI, or other procedures

Dofetilide

This medication may also interact with the following:

Acetazolamide

Alcohol

Certain antivirals for HIV or hepatitis

Certain medications for blood pressure, heart disease, irregular heart beat

Cimetidine

Dichlorphenamide

Digoxin

Diuretics

Estrogens, progestins, or birth control pills

Glycopyrrolate

Isoniazid

Lamotrigine

Memantine

Methazolamide

Metoclopramide

Midodrine

Niacin

Phenothiazines like chlorpromazine, mesoridazine, prochlorperazine, thioridazine

Phenytoin

Ranolazine

Steroid medications like prednisone or cortisone

Stimulant medications for attention disorders, weight loss, or to stay awake

Thyroid medications

Topiramate

Trospium

Vandetanib

Zonisamide

This list may not describe all possible interactions. Give your health care provider a list of all the medicines, herbs, non-prescription drugs, or dietary supplements you use. Also tell them if you smoke, drink alcohol, or use illegal drugs. Some items may interact with your medicine. What should I tell my care team before I take this medication? What should I watch for while using this medication? Visit your care team for regular checks on your progress.

A test called the HbA1C (A1C) will be monitored. This is a simple blood test. It measures your blood sugar control over the last 2 to 3 months. You will receive this test every 3 to 6 months.

Using this medication with insulin or a sulfonylurea may increase your risk of hypoglycemia. Learn how to check your blood sugar. Learn the symptoms of low and high blood sugar and how to manage them.

Always carry a quick-source of sugar with you in case you have symptoms of low blood sugar. Examples include hard sugar candy or glucose tablets.

Make sure others know that you can choke if you eat or drink when you develop serious symptoms of low blood sugar, such as seizures or unconsciousness. They must get medical help at once.

Tell your care team if you have high blood sugar. You might need to change the dose of your medication. If you are sick or exercising more than usual, you might need to change the dose of your medication.

Do not skip meals. Ask your care team if you should avoid alcohol. Many nonprescription cough and cold products contain sugar or alcohol. These can affect blood sugar.

This medication may cause ovulation in premenopausal women who do not have regular monthly periods. This may increase your chances of becoming pregnant. You should not take this medication if you become pregnant or think you may be pregnant. Talk with your care team about your birth control options while taking this medication. Contact your care team right away if you think you are pregnant.

If you are going to need surgery, an MRI, CT scan, or other procedure, tell your care team that you are taking this medication. You may need to stop taking this medication before the procedure.

Wear a medical ID bracelet or chain, and carry a card that describes your disease and details of your medication and dosage times.

This medication may cause a decrease in folic acid and vitamin B12. You should make sure that you get enough vitamins while you are taking this medication. Discuss the foods you eat and the vitamins you take with your care team. How should I use this medication? What side effects may I notice from receiving this medication? Side effects that you should report to your care team as soon as possible:

Allergic reactions, skin rash, itching, hives, swelling of the face, lips, tongue, or throat
High lactic acid level, muscle pain or cramps, stomach pain, trouble breathing, general discomfort or fatigue
Low vitamin B12 level, pain, tingling, or numbness in the hands or feet, muscle weakness, dizziness, confusion, difficulty concentrating
Side effects that usually do not require medical attention (report to your care team if they continue or are bothersome):

Diarrhea

Gas

Headache

Metallic taste in mouth

Nausea

This list may not describe all possible side effects. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088. Where should I keep my medication? None None None None None None What are the types of oral diabetes medications? There are several different classes of diabetes medications that work in different ways to help manage blood sugar levels. They include:

Alpha-glucosidase inhibitors.
Biguanides.
Bile acid sequestrants (BASs).
Dopamine-2 agonists.
DPP-4 inhibitors (gliptins).
Meglitinides (glinides).
SGLT2 inhibitors.
Sulfonylureas.

Thiazolidinediones (TZDs). What are oral diabetes medications? Alpha-glucosidase inhibitors Alpha-glucosidase inhibitors help lower blood sugar levels by blocking the breakdown of starches and some forms of sugar in your intestines. Starch is a carbohydrate in foods like potatoes, bread and rice. Carbohydrates (starch and sugar) increase your blood glucose levels the most compared to other nutrients (protein and fat) you get from food.

Side effects of alpha-glucosidase inhibitors may include gas (flatulence), bloating and diarrhea.

Alpha-glucosidase inhibitors include:

Acarbose (Precose[®]).
Miglitol (Glyset[®]). Are there oral medications for Type 1 diabetes? Biguanides Biguanides lower blood glucose levels by decreasing the amount of glucose your liver produces and releases into your bloodstream. They also help lower blood glucose levels by making your muscle tissue more sensitive to insulin so it can absorb glucose for energy.

Side effects may include diarrhea, upset stomach and a metallic taste in your mouth.

Metformin is the main type of biguanide. Its brand names include:

Glucophage[®].
Glucophage XR[®].
Glumetza[®].
Fortamet[®].

Riomet[®]. How do oral diabetes medications work? Bile acid sequestrants (BASs) Bile acid sequestrants are primarily cholesterol-lowering drugs. They can also help lower blood glucose levels, though researchers don't know exactly how they do it. These drugs can be helpful since people with diabetes often have high cholesterol.

BASs help remove LDL cholesterol (low-density lipoproteins or the "bad" cholesterol). The drug prevents bile acid in your stomach from being absorbed into your blood. Your liver then needs the cholesterol from your blood to make more bile acid. This process lowers your cholesterol level.

Side effects may include gas and constipation.

The main BAS medication for Type 2 diabetes is colesevelam (Welchol[®]). Dopamine-2 agonists None None DPP-4 inhibitors (gliptins) DPP-4

inhibitors (gliptins) help improve blood sugar levels by preventing the breakdown of GLP-1, a compound in your body.

GLP-1 naturally reduces blood glucose levels, but it normally breaks down and stops working very quickly. By interfering with this process, DPP-4 inhibitors allow GLP-1 to remain active in your body longer, lowering blood sugar levels only when they're elevated. They can also increase satiety (feeling full after eating).

Possible side effects of DPP-4 inhibitors include headaches and gastrointestinal issues.

DPP-4 inhibitors include:

Alogliptin (Nesina®).

Linagliptin (Tradjenta®).

Saxagliptin (Onglyza®).

Sitagliptin (Januvia®). Meglitinides (glinides) Meglitinides are medications that stimulate your pancreas to release insulin. You take them before each meal to help prevent your blood sugar from increasing too much from the food. Because they increase insulin production, you're more at risk for low blood sugar (hypoglycemia).

Meglitinides include:

Nateglinide (Starlix®).

Repaglinide (Prandin®). Glucose meters and test strips The most common type of blood sugar monitoring involves using a glucose meter and test strips. This is a "finger stick check." You prick your fingertip with a small needle called a lancet to produce a blood drop. You then place the drop against the test strip in the glucose meter, and the meter shows your blood sugar level within seconds.

Finger stick checks only measure blood glucose at one moment in time, so people with diabetes, especially those taking insulin, often have to check their blood sugar several times a day using this method.

Glucose meters and test strips are available at your local pharmacy, through mail order or through your healthcare provider. There are many different types of glucose meters. Your healthcare provider can help you select the meter that's best for you.

If you have medical insurance, check with your insurance company to see if they cover glucose meters and test strips. Some insurances only cover certain brands. If you don't have insurance, check with your provider for other options. Overview CGMs CGM involves wearing a device that measures your glucose levels 24 hours a day. The device uses this data to form a graph that shows a more complete picture of how your blood sugar levels change over time.

Most CGM devices use a tiny sensor that you insert under your skin. The sensor measures glucose levels in the fluids between your body's cells (interstitial fluid).

There are a few different types and brands of CGMs. Some CGMs link to specific insulin pumps. Others operate independently. Most CGMs can send alarms or alert messages when they detect low or high glucose levels.

Like all technology, CGMs can sometimes fail or be inaccurate. So, don't completely rely on CGMs without finger stick checks, especially if your CGM readings don't match the symptoms of low or high blood sugar you're experiencing, or if your CGM gives you an error message.

Ask your healthcare provider about CGM options if you're interested in using this technology. You'll also need to check with your insurance company to see if they cover the costs and which brands they cover.

Why should I monitor my blood sugar? Tracking blood sugar levels Most glucose meters allow you to save the results. You may be able to use an app on your smartphone to track your levels. If you don't have a smartphone, keep a written record of your blood sugar levels that includes the date, time of the test and any other details, like if it was before or after a meal. You should bring your glucose meter, phone or written record with you each time you visit your healthcare provider.

CGM systems save the data of your glucose levels. Your provider will be able to access the information.

How can I monitor my blood sugar at home? Procedure Details None

How do I check my blood sugar? How often should I check my blood sugar? How often you should check your blood sugar depends on what type of diabetes you have and other factors, like the diabetes medicines you take, your overall health and the demands of your daily life. Your healthcare provider will give you suggestions for how often you should check.

You may benefit from more regular blood sugar monitoring if you:

Take insulin.

Are pregnant.

Are having difficulty reaching your blood glucose targets.

Have frequent low blood sugar episodes.

Have low blood glucose levels without experiencing the usual warning signs.

Are sick.

Just had surgery. When should I check my blood sugar? Your healthcare provider will give you suggestions for the best times to check your blood sugar. This will vary from person to person.

It's especially important to check your blood sugar when you experience symptoms of low or high blood sugar.

There are also some general guidelines about which times of the day are most beneficial to check your blood sugar to assess how well your management plan is working. Low blood sugar Most people with diabetes have symptoms of low blood sugar (hypoglycemia) when their blood sugar is less than 70 mg/dL (milligrams per deciliter). When your blood sugar is low, your body gives out signs that you need food.

Common early symptoms of low blood sugar include:

Weakness.

Dizziness.

Intense hunger (polyphagia).

Trembling and feeling shaky.

Sweating.

Pounding heart.

Feeling frightened or anxious.

When you have these symptoms, it's important to check your blood sugar to see if your levels are low and how low they are. This will inform how you treat the low blood sugar.

You need to consume carbohydrates (sugar), like a banana or apple juice, to treat hypoglycemia. Severe hypoglycemia can be life-threatening. How common is hypoglycemia? Hypoglycemia is common in people with diabetes, especially people who take insulin to manage the condition.

One study found that 4 in 5 people with Type 1 diabetes and nearly half of all people with Type 2 diabetes who take insulin reported a low blood sugar episode at least once over a four-week period.

People with Type 2 diabetes who take meglitinide or sulfonylurea oral diabetes medications are also at an increased risk for low blood sugar.

You can experience hypoglycemia without having diabetes, but it's uncommon. Overview Symptoms and Causes None What is hypoglycemia (low blood sugar)? What are the signs and symptoms of hypoglycemia (low blood sugar)? Symptoms of hypoglycemia can start quickly, and they can vary from person to person. One person can also experience different symptoms for each episode.

The signs of hypoglycemia are unpleasant. But they provide good warnings that you should take action before your blood sugar drops more. The signs include:

Shaking or trembling.

Weakness.

Sweating and chills.

Extreme hunger (polyphagia).

Faster heart rate.

Dizziness or lightheadedness.

Confusion or trouble concentrating.

Anxiety or irritability.

Color draining from your skin (pallor).

Tingling or numbness in your lips, tongue or cheeks.

Signs of severe hypoglycemia include:

Blurred or double vision.

Slurred speech.

Clumsiness or difficulty with coordination.

Being disoriented.

Seizures.

Loss of consciousness.

Severe hypoglycemia is life-threatening. It needs immediate medical treatment. In rare cases, severe hypoglycemia that isn't treated can result in a coma and/or death.

You can also experience low blood sugar while sleeping (nocturnal hypoglycemia). Symptoms may include:

Restless sleep.

Sweating through your pajamas or sheets.

Crying out during sleep.

Having nightmares.

Feeling tired, disoriented or confused after waking up. What is blood sugar? When do hypoglycemia symptoms appear? The glucose level at which symptoms begin varies from person to person for people who have diabetes.

In general, symptoms often begin for people with diabetes when their blood glucose is around 70 mg/dL or lower. If your blood sugar is falling rapidly, you may experience symptoms before this point.

Some people with diabetes can have symptoms of hypoglycemia at relatively higher glucose levels. This is because, when you have chronic hyperglycemia (high blood sugar), your body gets used to that as its "normal" level. It alters the set point at which low blood sugar symptoms become apparent.

Some people who have low blood sugar episodes don't have symptoms or don't notice them. Healthcare providers call this hypoglycemia unawareness. People with hypoglycemia unawareness are more likely to have severe episodes and need medical help.

Hypoglycemia unawareness can happen in people with diabetes who live with chronically low blood sugar levels. Their body stops having symptoms when low blood sugar occurs.

If you have hypoglycemia unawareness, it's important to let your friends and family know so that they know how to help you if you experience a severe low blood sugar episode. You may also benefit from the following:

Using a continuous glucose monitoring (CGM) device that can alert you when you have hypoglycemia.

More frequent manual blood sugar checks.

A service dog called a diabetes alert dog that's specially trained to alert you when you have low blood sugar. What are the complications of low blood sugar? None None What causes hypoglycemia (low blood sugar) in people with diabetes? Hypoglycemia happens when your blood sugar drops below a healthy range. Several factors can contribute to this for people with diabetes. Hypoglycemia can develop if things like food, exercise and diabetes medications are out of balance.

Common situations that can lead to hypoglycemia for people with diabetes include:

Taking too much insulin, the wrong insulin or injecting it into your muscle instead of in your fat tissue.

Not timing insulin and carb intake correctly (for example, waiting too long to eat a meal after taking insulin for the meal).

Taking too much or too high of a dose of oral diabetes medications.

Being more active than usual.

Drinking alcohol without eating.

Eating meals later than usual or skipping meals.

Not balancing meals by including fat, protein and fiber.

People who are pregnant and have Type 1 diabetes are also more likely to experience low blood sugar during the first trimester due to hormone changes.

What causes hypoglycemia in people without diabetes? There are two main types of non-diabetes-related hypoglycemia: reactive hypoglycemia and fasting hypoglycemia.

Reactive hypoglycemia

Reactive hypoglycemia happens when you experience low blood sugar after a meal. It typically occurs about two to four hours after a meal.

Researchers don't yet know the exact cause. But they think it happens due to a sudden spike and then fall in blood sugar after eating certain foods, especially simple carbohydrate foods like white rice, potatoes, white bread, cake and pastries.

Bariatric surgery can also result in reactive hypoglycemia. After certain types of bariatric surgery, such as gastric bypass surgery, your body absorbs sugars very quickly, which stimulates excess insulin production. This can then cause hypoglycemia.

Your body usually corrects reactive hypoglycemia on its own, but consuming carbohydrates may help your symptoms go away more quickly.

Fasting hypoglycemia

For the majority of people without diabetes, not eating food for a long time (fasting) doesn't lead to hypoglycemia. This is because your body uses hormones and stored glucose to manage your blood sugar.

However, certain conditions and situations can lead to fasting hypoglycemia in people without diabetes, including:

Excessive alcohol consumption: Alcohol prevents your body from forming new glucose cells (gluconeogenesis). If you drink excessive amounts of alcohol over several days and don't eat much, your body can run out of stored glucose (glycogen). This can lead to hypoglycemia because your body can't properly regulate your blood sugar.

Critical illness: You can experience hypoglycemia in critical illness states, such as end-stage liver disease, sepsis, starvation or kidney failure. This is because your body is using stored glucose for energy faster than your body can create new glucose cells from the food you eat.

Adrenal insufficiency: Adrenal insufficiency causes lower-than-normal cortisol levels. As cortisol (a hormone) helps regulate your blood sugar by increasing it, having low levels of cortisol can lead to hypoglycemia episodes.

Non-islet cell tumor hypoglycemia (NICTH): This is a rare but serious syndrome in which a tumor releases excess insulin-like growth factor 2 (IGF-2). This is a hormone that has similar effects as insulin. Excess IGF-2 causes hypoglycemia. A wide variety of benign (noncancerous) and malignant (cancerous) tumors can cause NICTH.

Insulinoma: An insulinoma is a rare tumor in your pancreas that produces excess insulin. It leads to hypoglycemia episodes ,Â most commonly in the early morning.

In rare cases, non-diabetes-related medications can lead to hypoglycemia, such as beta-blockers and certain antibiotics.

If you,Âre experiencing hypoglycemia and don,Ât have diabetes, talk to your healthcare provider. TreatmentType 2 diabetes can sometimes be reversed with lifestyle changes, especially losing weight with exercise and by eating different foods. Some cases of type 2 diabetes can also be improved with weight loss surgery.

There is no cure for type 1 diabetes (except for a pancreas or islet cell transplant).

Treating either type 1 diabetes or type 2 diabetes involves nutrition, activity and medicines to control blood sugar level.

Everyone with diabetes should receive proper education and support about the best ways to manage their diabetes. Ask your provider about seeing a certified diabetes care and education specialist (CDCES).

Getting better control over your blood sugar, cholesterol, and blood pressure levels helps reduce the risk for kidney disease, eye disease, nervous system disease, heart attack, and stroke.

To minimize diabetes complications, visit your provider at least 2 to 4 times a year. Talk about any problems you are having. Follow your provider's instructions on managing your diabetes.CausesSupport GroupsMany resources can help you understand more about diabetes. If you have diabetes, you can also learn ways to manage your condition and prevent diabetes complications.SymptomsOutlook (Prognosis)Diabetes is a lifelong disease for most people who have it.

Tight control of blood glucose can prevent or delay diabetes complications. But these problems can occur, even in people with good diabetes control.Exams and TestsPossible ComplicationsAfter many years, diabetes can lead to serious health problems:

You could have eye problems, including trouble seeing (especially at night), cataracts, and light sensitivity. You could become blind. Your feet and skin can develop sores and infections. After a long time, your foot or leg may need to be amputated. Infection can also cause pain and itching in other parts of the body.

Diabetes may make it harder to control your blood pressure and cholesterol. This can lead to a heart attack, stroke, and other problems. It can become harder for blood to flow to your legs and feet.

Nerves in your body can get damaged, causing pain, tingling, and numbness.

Because of nerve damage, you could have problems digesting the food you eat. You could feel weakness or have trouble going to the bathroom. Nerve damage can make it harder for men to have an erection.

High blood sugar and other problems can lead to kidney damage. Your kidneys may not work as well as they used to. They may even stop working so that you need dialysis or a kidney transplant.

Your immune system can weaken, which can lead to frequent infections.
Prevention
None
None
None
Managing Diabetes
Unlike many health conditions, diabetes is managed mostly by you, with support from your health care team (including your primary care doctor, foot doctor, dentist, eye doctor, registered dietitian nutritionist, diabetes educator, and pharmacist), family, and other important people in your life. Managing diabetes can be challenging, but everything you do to improve your health is worth it!

You may be able to manage your diabetes with healthy eating and being active, or your doctor may prescribe insulin, other injectable medications, or oral diabetes medicines to help manage your blood sugar and avoid complications. You,Äôll still need to eat healthy and be active if you take insulin or other medicines. It,Äôs also important to keep your blood pressure and cholesterol close to the targets your doctor sets for you and get necessary screening tests.

You,Äôll need to check your blood sugar regularly. Ask your doctor how often you should check it and what your target blood sugar levels should be. Keeping your blood sugar levels as close to target as possible will help you prevent or delay diabetes-related complications.

Stress is a part of life, but it can make managing diabetes harder, including managing your blood sugar levels and dealing with daily diabetes care. Regular physical activity, getting enough sleep, and relaxation exercises can help. Talk to your doctor and diabetes educator about these and other ways you can manage stress.

Make regular appointments with your health care team to be sure you,Äôre on track with your treatment plan and to get help with new ideas and strategies if needed.

Whether you were just diagnosed with diabetes or have had it for some time, meeting with a diabetes educator is a great way to get support and guidance, including how to:

- Develop a healthy eating and activity plan
- Test your blood sugar and keep a record of the results
- Recognize the signs of high or low blood sugar and what to do about it
- If needed, give yourself insulin by syringe, pen, or pump
- Monitor your feet, skin, and eyes to catch problems early
- Buy diabetes supplies and store them properly
- Manage stress and deal with daily diabetes care
- Ask your doctor about diabetes self-management education and support services and to recommend a diabetes educator, or search the Association of Diabetes Care & Education Specialists,Äô (ADCES) nationwide directory for a list of programs in your community.

What Causes Type 2 Diabetes?Type 2 Diabetes in Children and TeensChildhood obesity rates are rising, and so are the rates of type 2 diabetes in youth. More than 75% of children with type 2 diabetes have a close relative who has it, too. But it,Ås not always because family members are related; it can also be because they share certain habits that can increase their risk. Parents can help prevent or delay type 2 diabetes by developing a plan for the whole family:

Drinking more water and fewer sugary drinks
Eating more fruits and vegetables
Making favorite foods healthier
Making physical activity more fun
Healthy changes become habits more easily when everyone makes them together. Find out how to take charge family style with these healthy tips.Symptoms and Risk FactorsNoneNoneTesting for Type 2 DiabetesNoneNonePrediabetesNoneNoneGestational DiabetesNoneNoneSymptoms of Type 1 DiabetesNoneNoneSymptoms of Type 2 DiabetesNoneNoneSymptoms of Gestational DiabetesNoneNoneGestational DiabetesYou,Åre at risk for gestational diabetes (diabetes while pregnant) if you:

Had gestational diabetes during a previous pregnancy.
Have given birth to a baby who weighed over 9 pounds.
Are overweight.
Are more than 25 years old.
Have a family history of type 2 diabetes.
Have a hormone disorder called polycystic ovary syndrome (PCOS).
Are an African American, Hispanic or Latino, American Indian, Alaska Native, Native Hawaiian, or Pacific Islander person.
Gestational diabetes usually goes away after you give birth, but increases your risk for type 2 diabetes. Your baby is more likely to have obesity as a child or teen, and to develop type 2 diabetes later in life.

Before you get pregnant, you may be able to prevent gestational diabetes with lifestyle changes. These include losing weight if you,Åre overweight, eating a healthy diet, and getting regular physical activity.
Type 1 DiabetesNoneNoneType 2

DiabetesNoneNonePrediabetesNoneNoneNoneNoneNoneNoneNoneNoneNoneTreatmentSee your health care provider if you have irregular monthly periods, are having trouble getting pregnant, or have excess acne or hair growth. If you,Åre told you have PCOS, ask about getting tested for type 2 diabetes and how to manage the condition if you have it. Making healthy changes such as losing weight if you,Åre overweight and increasing physical activity can lower your risk for type 2 diabetes, help you better manage diabetes, and prevent or delay other health problems.

There are also medicines that can help you ovulate, as well as reduce acne and hair growth. Make sure to talk with your health care provider about all your treatment options.What is PCOS?NoneNoneWhat Causes PCOS?NoneNoneDo You Have PCOS?NoneNoneNoneNoneNoneNoneNoneNoneNoneDiabetes Affects Hispanic or Latino People MoreNoneNoneManaging DiabetesNoneNonePrediabetesNoneNoneNoneNoneNoneNoneNoneNoneNoneBirth

ControlIt,Äs important to use birth control if you don,Ät want to become pregnant or if you want to wait until your blood sugar levels are in your target range, since high blood sugar can cause problems during pregnancy for you and your baby. There are many types of birth control methods, including intrauterine devices (IUDs), implants, injections, pills, patches, vaginal rings, and barrier methods like condoms and diaphragms. Choosing the right option for you will depend on whether you have any other medical conditions, current medicines you take, and other factors.

What You Can Do: Talk with your doctor about all your birth control options and risks. Continue checking your blood sugar, track the results, and let your doctor know if your levels go up.Yeast and Urinary Tract InfectionsGetting PregnantIf you know you want to have a baby, planning ahead is really important. Diabetes can make it harder to get pregnant, and high blood sugar can increase your risk for:

Preeclampsia (high blood pressure)
Delivery by cesarean section (C-section)
Miscarriage or stillbirth

A baby,Äs organs form during the first 2 months of pregnancy, and high blood sugar during that time can cause birth defects. High blood sugar during pregnancy can also increase the chance that your baby could:

Be born too early
Weigh too much (making delivery harder)
Have breathing problems or low blood sugar right after birth
What You Can Do: Work with your health care team to get your blood sugar levels in your target range and establish good habits such as eating healthy and being active. Your blood sugar levels can change quickly, so check them often and adjust your food, activity, and medicine as needed with guidance from your doctor.Menstrual CycleDuring PregnancyGestational diabetes,Ähigh blood sugar during pregnancy,Äcan develop in women who don,Ät already have diabetes. It affects 2% to 10% of pregnancies in the United States every year. Any woman can have gestational diabetes, but some are at higher risk, including those who are overweight or have obesity, are more than 25 years old, or have a family history of type 2 diabetes. Careful management is important to ensure a healthy pregnancy and healthy baby.

What You Can Do: If you,Äre diagnosed with gestational diabetes, your doctor will work with you to create a treatment plan to help keep your blood sugar in your target range by eating healthy food in the right amounts and being active most days of the week. You may need diabetes medicine or insulin shots to keep you and your baby healthy.

Gestational diabetes usually goes away after your baby is born. However, about 50% of women with gestational diabetes go on to develop type 2 diabetes. It,Äs important to get tested for diabetes 4 to 12 weeks after delivery and continue to get tested every 1 to 3 years to make sure your blood sugar levels are in a healthy range. Ask your doctor about participating in the CDC-led National Diabetes Prevention Program, which includes a lifestyle change program scientifically proven to prevent or delay type 2 diabetes in people at risk.SexMenopauseAfter menopause, your

body makes less estrogen, which can cause unpredictable ups and downs in blood sugar. You may gain weight, which increases your need for insulin or other diabetes medicines. Hot flashes and night sweats may disrupt your sleep, making managing blood sugar harder. This is also a time when sexual problems can occur, such as vaginal dryness or nerve damage.

What You Can Do: Ask your doctor about ways you can manage menopause symptoms. If your blood sugar levels have changed, you may need to change the dosage of any diabetes medicines you're taking. Heart disease risk goes up after menopause, so make heart-healthy choices that also help manage your diabetes, such as eating healthy food and being active.

NoneNoneNone NoneNone NoneNone Other ProblemsIn addition to ED, nerve damage from diabetes can cause other problems for men, including:

Overactive bladder (needing to urinate often, urinating often at night, leaking urine)

Male incontinence (leaking urine)

Urinary tract infections (UTIs)

Retrograde ejaculation (semen is released into the bladder)

These problems could mean you need to change how you're managing your diabetes. Erectile Dysfunction (ED) Diabetes Treatment Work with your health care team to keep your blood sugar levels close to your target to avoid or lessen nerve and blood vessel damage. The less damage, the better your body will be able to function in every part of life. Healthy habits help you stay in the game, being active on most days, eating healthy food, checking your blood sugar, managing your blood pressure and cholesterol levels, and going to doctor appointments.

Be sure to take advantage of diabetes self-management education and support services. Working with a diabetes educator can help you stay on track no matter what life throws at you.

Ready to step up your game? Find a doctor you can be open with. And earlier is better for best results. The ball is in your court! Causes of ED NoneNone ED Treatment NoneNoneNoneNone NoneNone NoneNone Testing for Gestational Diabetes It's important to be tested for gestational diabetes so you can begin treatment to protect your health and your baby's health.

Gestational diabetes usually develops around the 24th week of pregnancy, so you'll probably be tested between 24 and 28 weeks.

If you're at higher risk for gestational diabetes, your doctor may test you earlier. Blood sugar that's higher than normal early in your pregnancy may indicate you have type 1 or type 2 diabetes rather than gestational diabetes. What Causes Gestational Diabetes? Prevention Before you get pregnant, you may be able to prevent gestational diabetes by losing weight if you're overweight and getting regular physical activity.

Don't try to lose weight if you're already pregnant. You'll need to gain some weight, but not too quickly, for your baby to be healthy. Talk to your doctor about how much weight you should gain for a healthy pregnancy.

Symptoms and Risk FactorsTreatment for Gestational DiabetesYou can do a lot to manage your gestational diabetes. Go to all your prenatal appointments and follow your treatment plan, including:

Checking your blood sugar to make sure your levels stay in a healthy range.

Eating healthy food in the right amounts at the right times. Follow a healthy eating plan created by your doctor or dietitian.

Being active. Regular physical activity that,Äs moderately intense (such as brisk walking) lowers your blood sugar and makes you more sensitive to insulin so your body won,Ät need as much. Make sure to check with your doctor about what kind of physical activity you can do and if there are any kinds you should avoid.

Monitoring your baby. Your doctor will check your baby,Äs growth and development.

If healthy eating and being active aren,Ät enough to manage your blood sugar, your doctor may prescribe insulin, metformin, or other

medication.Related Health ProblemsNoneNoneNoneNoneNone NoneNone NoneNone

What Should I Do if I Have Diabetes?Before Pregnancy

doctor and woman

For women with type 1 or type 2 diabetes, it,Äs important to see your doctor before getting pregnant. Preconception care (preventive health care before and between pregnancies) provides an opportunity to discuss changes in blood sugar levels, make adjustments to monitoring and medications, and check for and treat related health problems, such as high blood pressure.

During Pregnancy

woman taking blood sugar

Managing diabetes can help you have a healthy pregnancy and a healthy baby. To manage your diabetes, see your doctor as recommended, monitor your blood sugar levels, follow a healthy eating plan developed with your doctor or dietitian, be physically active, and take insulin as directed (if needed). Learn more about how to manage type 1 or type 2 diabetes during pregnancy and gestational diabetes.

After Pregnancy

doctor and a mother

Women who had gestational diabetes are more likely to develop type 2 diabetes later in life. If you had gestational diabetes, it,Äs important to see your doctor to get tested for diabetes 4 to 12 weeks after your baby is born. If you don,Ät have diabetes at that time, continue to get tested every 1 to 3 years to make sure your blood sugar levels are in a healthy range.

To help reduce the risk of type 2 diabetes, follow these steps:

Achieve a healthy body mass index. Obesity is a strong risk factor for diabetes; losing even a few pounds can help prevent type 2 diabetes. Increase physical activity to 30 minutes a day, at least 5 days a week. You can break up your activity into smaller chunks of time,Äfor example, a brisk 10-minute walk 3 times a day.

Make healthy food choices. Eat a variety of fruits and vegetables, limit fat intake to 30% or less of daily calories, and limit portion size to help improve weight loss and prevent type 2 diabetes. Women who had gestational diabetes or who develop prediabetes can also participate in the CDC-recognized diabetes prevention lifestyle change program. Find a CDC-recognized lifestyle change class near you, or join one of the online programs.

What Are the Different Types of Diabetes?

NoneNone

How Common Is Diabetes During Pregnancy?

NoneNone

How Might Diabetes Affect My Pregnancy?

NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone

How to Reverse Insulin Resistance

If you have insulin resistance, you want to become the opposite, *more* insulin sensitive (cells are more effective at absorbing blood sugar so less insulin is needed).

Physical activity makes you more sensitive to insulin, one reason why it, *is* a cornerstone of diabetes management (and good health in general!). Don, *not* wait until you, *are* diagnosed with diabetes to start moving more. The earlier you take action (literally), the better off you, *will* be.

Weight loss is important too, as is avoiding high blood sugar, reducing stress, and getting enough sleep (physical activity can help you get more zzz, *is* too).

These lifestyle changes really work. Talk with your health care provider about how to get started.

Insulin, Blood Sugar, and Type 2 Diabetes

NoneNone

Do You Have Insulin Resistance?

NoneNone

What Causes Insulin Resistance?

NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone

The progression from having a genetic predisposition to type 2 diabetes and the development of an elevated blood sugar or overt diabetes is affected by environmental factors

Risk Factors

Development of type 2 diabetes

The development of type 2 diabetes is thought to be a progression from normal blood sugars to pre-diabetes to a diagnosis of overt diabetes. These stages are defined by blood sugar levels.

The timeline to developing an elevated blood sugar depends on many environmental factors (such as being overweight, physical activity, age, diet, illness, pregnancy, and medication) and also on how strong the gene traits are for diabetes. Ultimately, pre-diabetes and diabetes occur when the pancreas cannot make enough insulin to overcome the insulin resistance. Historically pre-diabetes and type 2 diabetes has been diagnosed when individuals are older; however, because of a wide-spread epidemic of obesity which causes insulin resistance, the diagnosis of type 2 diabetes is occurring more frequently at younger and younger ages.

People born with the genetic traits for diabetes are considered to be pre-disposed. Genetically predisposed people may have normal blood sugar levels, but many will have other markers of insulin resistance such, as elevated triglycerides and hypertension. When environmental factors are introduced, such as weight gain, lack of physical activity, or pregnancy, they are likely to develop diabetes.

Some individuals with other types of diabetes may be misdiagnosed as having type 2 diabetes. Up to 10% of individuals who are initially diagnosed with type 2 diabetes may actually have an adult onset of type 1

diabetes also known as LADA or Latent Autoimmune Diabetes of Adults. Type 2 diabetes is strongly inherited. Pre-diabetes is a stage between not having diabetes and having type 2 diabetes. You have pre-diabetes when your blood sugars are above normal, but not so high as to meet the diagnostic criteria for type 2 diabetes. One in three people with pre-diabetes will go on to develop type 2 diabetes; however, with the correct lifestyle changes, including exercise, weight loss, a healthy diet, and the correct medications, the odds decrease so that only one in nine pre-diabetic people develop type 2 diabetes. In some cases, your blood sugar levels can return to normal. However, even if blood sugar levels return to normal, the genetic risk for type 2 diabetes remains unchanged, so you must continue positive lifestyle changes, and medication or risk the return of elevated blood sugar levels. Is Type 2 diabetes increasing? Type 2 diabetes is increasing at an epidemic rate, and is being diagnosed at younger and younger ages. The most likely reason for this increase is that individuals with a genetic susceptibility to type 2 diabetes are developing the disease due to lifestyle changes, namely less physical activity, weight gain, and longer life span.

The good news is that scientific research confirms that by eating healthy foods, exercising regularly and maintaining an ideal body weight, you can delay or prevent the onset of type 2 diabetes.

Other conditions associated with type 2 diabetes The insulin resistance syndrome Individuals with type 2 diabetes are more likely to be diagnosed with other medical problems such as atherosclerosis, coronary artery disease, hypertension, obesity and dyslipidemia. Insulin resistance is thought to worsen and possibly directly cause these problems. The optimal medical care of type 2 diabetes includes not only controlling the blood glucose but also treating high blood pressure, high cholesterol or triglycerides, reducing excess weight and staying physically fit.

None None None None

None None None None None None None None None None None None None None None None None None None None

None None None None None None None None None None None None None None None None None None None None

None None None None What is pre-diabetes? Pre-diabetes means your blood sugar levels are higher than normal, but not high enough to meet a diagnosis of type 2 diabetes. Without lifestyle changes, a person with pre-diabetes is at high risk of going on to develop type 2 diabetes. Key facts What are the first symptoms of type 2 diabetes? Many people with type 2 diabetes do not experience any symptoms at first and it may go undiagnosed for years. If they do have symptoms, these may include:

being very thirsty

passing more urine

feeling tired

feeling hungry

having cuts that heal slowly

Over time, diabetes can lead to complications, which can then cause other symptoms.

Blood glucose testing is important for detecting pre-diabetes and type 2 diabetes before complications arise. What is type 2 diabetes? What causes type 2 diabetes? The exact cause of type 2 diabetes is not known. However, risk factors for developing type 2 diabetes include:

family history of type 2 diabetes
being overweight or obese, especially with excess weight around the waist
a low level of physical activity
poor diet
being over 55 years of age
for women ,Äi having had gestational diabetes
for women ,Äi having polycystic ovarian syndrome
for women ,Äi having had a baby weighing over 4.5kg
Certain groups of people are more likely to get type 2 diabetes,
including:

Aboriginal and Torres Strait Islander people
people with Pacific Islander, Southern European or Asian backgrounds
What is the difference between type 1 and type 2 diabetes?
How is type 2 diabetes diagnosed?
If your doctor suspects you have diabetes, you will probably need to have a blood test to assess your glucose level. It is important for diabetes to be diagnosed early, whether it,Äs type 1 or type 2 diabetes. That way, it can be better controlled and complications can be avoided or minimised.

During a test, blood is taken from a vein and sent to a pathology lab.
The tests that can be done include:

a fasting blood glucose test ,Äi fasting is required for at least 8 hours, which may mean not eating or drinking (except water) overnight
an oral glucose tolerance test (OGTT) ,Äi after fasting for 8 hours, you have a blood glucose test, then you drink a sugary drink and then have another blood test done 1 and then 2 hours later
HbA1c ,Äi this blood test shows your average blood glucose levels over a period of time ,Äi it does not involve fasting beforehand
How is type 2 diabetes managed?
Lifestyle changes for type 2 diabetes
Following a healthy lifestyle is very important in managing type 2 diabetes, and can reduce or delay the need for medications and help prevent complications. The recommendations are:

follow a healthy diet
be physically active
lose weight if you are overweight or obese
quit smoking
limit alcohol consumption
Medicines for type 2 diabetes
There are many types of diabetes medications and they work in different ways to control blood glucose. If you have diabetes, over time it can change, meaning your medications may need to change too. For example, you may need more than one medication to control your blood glucose levels. Some people with type 2 diabetes may eventually need insulin to manage their condition.

If you are living with type 2 diabetes you can join the National Diabetes Services Scheme (NDSS) for free to access a range of resources, support services and subsidised diabetes products. Visit Diabetes Australia for information and resources.
Healthy eating for type 2 diabetes
A dietitian or your doctor will be able to advise you on what to eat to meet your

nutritional needs and control your blood sugar. Your doctor should be able to refer you to a registered dietitian for personalised advice.

Eating healthy foods with a low glycaemic index (GI) can help to optimise your blood sugar levels. This includes wholegrain breads, minimally processed breakfast cereals like rolled or steel cut oats, legumes, fruit, pasta and dairy products.

Avoid high-carbohydrate, low-nutrient foods such as cakes, lollies and soft drinks, and eat a diet low in saturated fat.

You should eat at regular times of the day and may also need snacks. Try to match the amount of food you eat with the amount of activity you do, so that you don't put on weight.

If you are overweight or obese, losing even 5-10 per cent of your body weight can significantly improve blood sugar control.

Metformin Most people with type 2 diabetes start treatment with metformin. This is a medicine that reduces the amount of glucose released into your blood, and increases the amount taken up by your cells. **Key facts** Sulphonylureas Sulphonylureas stimulate the pancreas to produce more insulin. Sometimes, a sulphonylurea is prescribed for people with type 2 diabetes as an alternative to metformin. However, it is usually used in addition to metformin, if diet, exercise and metformin alone do not control your diabetes adequately.

Both metformin and sulphonylureas have been used for many years. They are known to successfully reduce the complications of diabetes.

How is insulin used to treat diabetes? Other medicines Other, newer medicines for type 2 diabetes include:

glitazones ,Â help the body to use insulin more effectively
acarbose ,Â prevents the carbohydrate you eat from being broken down into glucose

GLP-1 analogues ,Â increase the amount of insulin in the blood and are usually given as an injection

SGLT2 inhibitors ,Â increase the amount of glucose excreted in urine and are usually used in combination with other diabetes medicines

DPP-4 inhibitors ,Â also known as ,Âgliptins,Â, increase your body,Âs own insulin secretion and decrease the activity of the hormone glucagon, to lower your blood glucose levels

Your doctor will recommend the best medicine or combination of medicines for you, depending on your individual circumstances. **What non-insulin treatments are available to treat diabetes?** **Will I take the same diabetes medicines for life?** Over time, your diabetes can change, meaning your medicines may need to change too. For example, you may need to increase the dose, switch medicines or add more medicines.

Regardless of the type of diabetes you have, it,Âs important you continue to monitor your blood glucose levels over time. This is to make sure your diabetes remains well managed and your blood glucose levels stay within your target range.

Make sure you have regular check-ups with your doctor. Most people with diabetes should see their doctor every 3 to 6 months. Your doctor will help you monitor your diabetes and recommend the right treatment for you. What should I do if I take too much or the wrong type of medicine? None None None None None None How do I take insulin? Insulin needs to be injected to work properly. It is usually injected into the fatty tissue of your abdomen, thighs or buttocks.

There are a few different types of delivery devices available to inject insulin. For more information, read the healthdirect page on insulin devices.

Your doctor or diabetes nurse or educator will advise you about how to take insulin using your device. It is important that you always follow this advice exactly.

Contact your diabetes nurse or educator if you:

have forgotten or missed a dose of insulin
are late taking your insulin
have not taken enough insulin

Key facts

What should I do if I take too much insulin? Taking too much insulin or other diabetes medicines can cause your blood sugar level to drop too low. This is known as hypoglycaemia (low blood sugar) or a 'hypo'. Hypoglycaemia can develop into a serious situation if not addressed. If you think you have taken too much insulin, check your blood glucose level as soon as possible, and repeat this frequently.

If your blood glucose level is low, you will need to address this straight away. Read the healthdirect page on hypoglycaemia for how to do this.

What types of insulin are available? What should I do if I take too little insulin? Taking too little insulin can cause your blood glucose level to rise too high. This is called hyperglycaemia (high blood sugar).

If you have forgotten or missed a dose of insulin, or have not taken enough insulin:

Do not take the missed dose or extra insulin unless your diabetes nurse or educator or doctor advises you to do so.

Drink plenty of sugar-free, non-alcoholic fluids such as water to stay well hydrated. Avoid alcohol and drinks containing caffeine, such as cola, tea and coffee because these can dehydrate you.

Continue to monitor your blood glucose level regularly.

If you find your blood glucose level stays high, you will need to address this. See the healthdirect page on hyperglycaemia.

How do I store insulin correctly? What should I do if I run out of insulin? It is a good idea to always keep at least one spare vial of insulin for emergencies, and to take your insulin with you when you go out.

If you run out of insulin:

Contact your doctor or diabetes nurse or educator for advice.

Ask your pharmacist if they can give you an emergency supply (they may charge for this service).What should I do if my insulin is expired?NoneNone NoneNone NoneNone What symptoms are related to hyperglycaemia?If you have hyperglycaemia, you might:

feel very thirsty
feel tired or lethargic
need to pass urine (wee) frequently
have blurred vision
find it hard to concentrate
feel irritable
If your hyperglycaemia gets worse, you might have diabetic ketoacidosis.

Watch out for:

fruity smelling breath
nausea and vomiting
abdominal pain
shortness of breath
dry mouth
weakness or confusionKey factsWhen should I see my doctor?If you have type 1 diabetes, it,Äôs important that you act on hyperglycaemia. If not treated, a high blood sugar level can lead to a serious condition called diabetic ketoacidosis.

Call 000 or go to the hospital emergency department if:

you cannot keep any food or fluids down
your blood glucose level stays above 15mmol/L and you have ketones
your symptoms are getting worse and you are unable to manage your condition yourself

Make an appointment to see your doctor if:

you have diarrhoea or vomiting but are able to eat and drink something
you have a fever for more than 24 hours
your blood glucose is above 15mmol/L even after taking your diabetes medicines
you are finding it difficult to keep your blood glucose levels in the target range
If your high blood sugar doesn,Äôt go down, or you can,Äôt keep fluids down, see your doctor immediately, or go to your nearest emergency department

If you have type 2 diabetes, an occasional high blood glucose level is not a reason to worry.

If you often have high blood glucose levels, this can lead to diabetes complications. You can ask your doctor to review your diabetes management plan.What is hyperglycaemia?How is hyperglycaemia diagnosed?When you are diagnosed with diabetes you will be given a blood glucose meter. If your blood glucose level is higher than your target range, this is high blood sugar.

If your blood glucose level is over 15mmol/L this is hyperglycaemia.

It is normal for your blood glucose levels to vary at different times during the day

If you think that your blood glucose level doesn't seem quite right, check that:

your hands and the meter is clean
the test strips are correct and have not expired
the battery

What causes hyperglycaemia? How is hyperglycaemia treated? If you have diabetes your doctor has probably given you a diabetes management plan or a sick day plan. Check your plan for advice on what to do when your blood sugar is too high.

You may need to:

get extra rest
drink plenty of water and avoid drinks containing sugar, alcohol or caffeine
check your blood glucose level regularly
check your urine (wee) for ketones
change your dose of insulin

Can hyperglycaemia be prevented? None None

Complications of hyperglycaemia If you have hyperglycaemia, a short-term complication is dehydration (not having enough fluids in your body).

If you have type 1 diabetes and your blood glucose level is high, you can develop diabetic keto acidosis. You should:

check for ketones in your blood or urine
follow your sick day action plan

If you have type 2 diabetes and very high blood sugar, you can develop a condition called hyperosmolar hyperglycaemic state.

Long-term complications of high blood glucose can be serious. Some examples are:

heart disease
stroke
kidney disease
vision problems
nerve problems

None None

What is insulin? Insulin is a hormone naturally made by the body. It helps your body move the sugar from the food you eat into your cells, where it can be used as energy.

If you have diabetes, your body may not have enough insulin to control your blood sugar. Insulin can be given as a medicine to help you maintain healthy blood sugar levels.

At present, insulin is only available as an injection.

Key facts

What devices are available to deliver insulin to the body? A range of devices can be used to deliver doses of insulin to the body. These include:

insulin pens
insulin pumps

insulin jets

syringesWhat is diabetes?What are insulin pens?Insulin pens look similar to a fountain pen, and may come pre-filled or with refillable insulin cartridges. The required dose of insulin is automatically measured and delivered by a needle attached to the pen.

Many different types of insulin pens are available, but most work in the same way.How is diabetes treated?Using an insulin penIf you have a reusable insulin pen, insert an insulin cartridge and dial the right dose. Your doctor, pharmacist, or diabetes educator can show you how. Give yourself the injection, and then dispose of the needle in a sharps bin.

If you are using a disposable insulin pen, dial the right dose, give yourself the injection and then dispose of the pen in a sharps bin.What other injectable medicines are used to treat diabetes?NoneNone How do I use my pen delivery device?You may be given a pen delivery device to inject insulin or a different, non-insulin diabetes medicine. While the different medicines work differently, the pens used to administer them often work in a similar way.

Here are some tips for using your pen delivery device safely and effectively:

Prime (prepare) your pen before using it by dialling in a very small amount of medicine and then expel (eject) it into the air. Then dial in your correct dose and inject. This ensures the needle is working before use and that no air bubbles are injected into your skin.

To avoid medicine leakage, pinch your skin, inject the needle and then slowly remove the needle at the same angle at which you put it in. Press on the injection site for a few seconds to stop any insulin leaking out. If any medicine leaks or spills when you are using your pen, do not take another dose. Monitor your blood sugar level until your next dose is due, then continue to take your medicine as normal.

Remove the needle from the pen immediately after use and safely dispose of in a sharps bin.

Never inject through clothing ,Ã this can cause soreness and infection. It also blocks your view of the injection site, making it hard to tell if the injection has been successful or not. How do I avoid problems with my pen delivery device?Always keep your pen separate from the needles until you need to use it ,Ã do not carry the pen around loaded with a needle. Make sure you have a spare insulin pen in case yours breaks or gets lost. If you use the spare, make sure that you replace it immediately.

Never attempt to use a pen that is not working properly ,Ã use your spare instead. If you don't have one, contact your doctor or diabetes nurse educator for advice. What problems might I have with testing and monitoring equipment?If you have a problem using your diabetes equipment, or if it breaks or becomes faulty, check the manufacturer,Ãs user manual or contact its customer care department. Your doctor, diabetes nurse or educator or pharmacist will also be able to advise you.Key factsBlood glucose metersBlood glucose meters can stop working properly if:

the meter gets old, too hot, damp or dirty
the batteries need replacing or recharging

the testing strips are out of date
the calibration code is incorrect
you are using the wrong strip for the meter
there isn't enough blood on the strip, or the strip has been inserted the wrong way
there was something sweet on your hands before you did the test
To avoid problems with your blood glucose meter:

Read the manufacturer's instructions on caring for and using the device correctly.

Before testing, wash your hands with soap, then rinse and dry them. Dirt can cause an inaccurate reading.

Always check you have the right strip for the meter and that it has been inserted correctly.

Each time you visit your doctor or diabetes nurse educator, use your device while you are there. See if the readings it gives you match the readings taken by the doctor. What equipment is available to monitor blood sugar levels? Continuous glucose monitoring (CGM) When using CGM, the sensor must be removed and a new one placed in a different part of the body once a week.

If you use a CGM, you will still need to check your blood sugar level regularly using a finger prick blood test to calibrate your CGM. This means checking that your blood level readings match, to ensure your CGM is measuring properly. Check with your diabetes nurse educator how often you need to calibrate your CGM and in which other situations you may need to do a finger prick blood test. What equipment is available to test for ketones? Flash glucose monitoring It is important to ensure your skin is clean and dry before applying the flash glucose monitor or it may not work correctly. Some activities, such as swimming or exercising can also make it difficult to keep the sensor attached. If you are having difficulties, ask your diabetes nurse educator for advice.

Tips for using flash glucose monitoring correctly can be found at [diabetes australia](#). Other equipment problems None None None None How do I prepare for a blood glucose test? For a fasting blood glucose test, you can't eat anything for 8 to 12 hours before the test. You should drink only water. Drinking water before your blood test may make it easier to take your blood.

There is no special preparation for a random blood glucose test. Key facts What happens during a blood glucose test? Blood glucose tests are usually done at a pathology collection centre. You will have blood taken, usually from a vein in your arm. The blood will then be sent to a laboratory for testing. What is a blood glucose test? What is an oral glucose tolerance test (OGTT)? An OGTT measures how your body responds to glucose. When is a blood glucose test recommended? When is an oral glucose tolerance test recommended? An OGTT is sometimes used to check for type 2 diabetes and pre-diabetes.

Pre-diabetes is when blood glucose levels are higher than normal, but not high enough to diagnose type 2 diabetes.

OGTTs are routinely recommended to check for gestational diabetes, a type of diabetes that starts in pregnancy. What happens during an oral glucose tolerance test? What do my blood glucose test results mean? Your doctor will look at your blood test results in the context of your situation and why you are having the test. They will discuss with you what the test results mean for you.

High blood glucose levels are usually caused by diabetes, pre-diabetes or gestational diabetes. But there are also some other conditions that can cause high and low blood glucose levels.

If your result shows a high blood glucose level, your doctor may suggest repeating the test and having other tests. What if the blood glucose check result doesn't sound right? If you're not convinced that a result is correct, here's a suggested check list:

Have the strips expired?

Is the strip the right one for the meter?

Is there enough blood on the strip?

Has the strip been put into the meter the right way?

Have the strips been affected by climate, heat or light?

Did you wash and thoroughly dry your hands before doing a check?

(handling sweet foods such as jam or fruit can give higher results)

Is the meter clean?

Is the meter too hot or too cold?

Is the battery low or flat?

All meters will give a different result with a different drop of blood.

As long as there is not a big difference (more than 2mmol/L) there is not usually cause for concern.

The accuracy of all meters can be checked with meter-specific liquid drops called control solutions. If you are concerned, you can arrange to have your meter checked with a control solution. Your Credentialed Diabetes Educator or pharmacist may be able to help you with this.

Why is it important to monitor your BGLs? Caring for strips It is important to care for your strips so that you get an accurate reading. To do this, refer to the manufacturer's instructions. It will include recommendations like:

Storing them in a dry place

Replacing the cap immediately after use

Checking the expiry date is valid. When should I check my BGLs? How can I record my BGLs? Keeping a record of your blood glucose readings is only helpful if you are going to use your results to manage your diabetes. Share your readings with your diabetes health care team and ask them how to interpret your readings to make decisions about your diabetes management.

A paper diary. Write your BGLs down. Some blood glucose meter manufactures make a diary or your health care team may also have one for you to use.

Phone apps. Some meters can Bluetooth your BGLs directly to your smart phone via an app. The app stores this information for you and can also be sent directly to your health care team.

Your blood glucose meter.,
Some health care providers are able to download the information from your meter. You would need to give your meter to your team for downloading. How do I monitor my BGLs? Subsidised blood glucose monitoring products
The National Diabetes Services Scheme (NDSS) is an initiative of the Australian Government. Once you are registered with the NDSS, you can access subsidised blood glucose monitoring products.

Registration with the,
NDSS,
is free and open to everyone in Australia with a Medicare card (or from a country with reciprocal medicare agreement), diagnosed with diabetes. NDSS registration forms must be filled out by you and a member of your health care team ,
a GP, Endocrinologist, Obstetrician, Paediatrician, Nurse Practitioner, Credentialed Diabetes Educator or GP practice nurse.

A selection of blood glucose monitoring strips are subsidised by the NDSS. All NDSS registrants can access subsidised blood glucose monitoring strips. If you are living with type 2 diabetes not using insulin, you will require a,
Blood Glucose Test Strip Six Month Approval,
form to access strips after an initial six-month period.

People with type 1 diabetes are eligible to access free or subsidised Flash GM and CGM. The NDSS website provides information on the,
CGM initiative.

If you are already registered with the NDSS, you can search healthdirect,
for a list of pharmacies or access points in your area that provide diabetes products at discounted rates.

For more information about blood glucose monitoring, talk to your Credentialed Diabetes Educator or call our Helpline on 1800 637 700.

NoneNoneNone NoneNone NoneNone

NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone NoneNone

NoneNone NoneNoneGap in CareNoneNoneGet Ready To Make the

LeapNoneNoneBridge the GapNoneNoneNoneNoneNoneNone NoneNone NoneNone Insulin

InhalerInhaled insulin is taken using an oral inhaler to deliver ultra-rapid-acting insulin at the beginning of meals. Inhaled insulin is used with an injectable long-acting insulin.

Advantages of insulin inhalers

Is not an injection.

Acts very fast and is as effective as injectable rapid-acting insulins.

Can be taken at the beginning of meals.

Could lower risk of low blood sugar.

Could cause less weight gain.

Inhaler device is small.

Disadvantages of insulin inhalers

Might cause mild or severe coughing.

May be more expensive.

Still requires injections or a pump for basal insulin.

Dosing isn't as precise.

Make sure to talk to your doctor and diabetes educator when your lifestyle or needs change. They will know about the latest devices and have tips to make taking insulin and all aspects of diabetes easier to

manage. Need help finding a diabetes educator?Terms To
KnowNoneNoneSyringe or PenNoneNoneInsulin PumpNoneNoneNoneNoneNone
NoneNone NoneNone Important: Treating Low Blood SugarLow blood sugar can
happen quickly and needs to be treated immediately. It,Âs most often
caused by too much insulin, waiting too long for a meal or snack, not
eating enough, or getting extra physical activity. Low blood sugar
symptoms vary, so school staff should be familiar with your child,Âs
specific symptoms (see the DMMP), which could include:

Shakiness

Nervousness or anxiety

Sweating, chills, or clamminess

Irritability or impatience

Dizziness and difficulty concentrating

Hunger or nausea

Blurred vision

Weakness or fatigue

Anger, stubbornness, or sadness

If your child has low blood sugar several times a week, visit his or her
health care provider to see if the treatment plan needs to be
adjusted.Make a Diabetes Management PlanStay Well All YearMake sure your
child has had all recommended shots, including the flu shot. Kids with
diabetes can get sicker from the flu and stay sick longer. Being sick can
make blood sugar monitoring harder.

Regular hand washing, especially before eating and after using the
bathroom, is one of the best ways to avoid getting sick and spreading
germs to others.Team Up With School StaffNoneNoneMake a Diabetes

ChecklistNoneNoneNoneNoneNone NoneNone NoneNone Managing Blood SugarTime
in range

Time in range is how long your blood sugar stays in your target range
throughout the day. Most people with diabetes aim for 70% time in range,
or between 16 and 17 hours out of 24.Anyone Can Get Type 1 DiabetesHigh
and low blood sugarBlood sugar levels change often during the day.

You,Âll need to notice if your blood sugar drops too low (hypoglycemia)
and be prepared to treat it right away.

If your blood sugar spikes very high and your insulin is low, you can
develop diabetic ketoacidosis (DKA), a serious complication of diabetes
that can be life-threatening. You,Âll need medical care immediately if
you develop DKA.

Your health care team will let you know how to identify and treat high
and low blood sugar and related health problems. Be sure to get in touch
with your doctor or diabetes educator if you have any questions.Living
With Type 1 DiabetesHow managing blood sugar helps nowKeeping your blood
sugar levels on target can help you avoid serious health problems like
heart disease and nerve damage down the road. But did you know avoiding
ups and downs in blood sugar can help you feel better right away?

Steady blood sugar levels can help you have more energy, better sleep, an
easier-to-manage appetite, better focus, and stable moods. If you,Âre
having trouble meeting your target, talk to your doctor or diabetes
educator about making changes to your treatment plan so you can stay in

range longer and feel better. Get diabetes education Doctor Visits Your diabetes care team

It takes a health care team to help you manage diabetes. And you, you're the most important member of the team because you, you're the one managing diabetes every day. And it really is a team, it's a group of dedicated, focused health care experts to assist you in feeling good and living a long, healthy life.

Your team will include your primary care doctor, endocrinologist (a doctor who treats diabetes and other hormone problems), foot doctor, eye doctor, dentist, pharmacist, nurse, dietitian, and diabetes educator. They specialize in helping you manage every aspect of diabetes, and you, you'll schedule regular visits with them to ensure your treatment plan is on track. Ask your primary care doctor for referrals to these specialists to begin building your team.

Parents: Diabetes Care Tips

If you have a young child or teen who is newly diagnosed, they will need help with everyday diabetes care especially at first, such as checking blood sugar, taking insulin, and adjusting levels if they use an insulin pump. Your child, your health care team will give you detailed information about managing your child, your diabetes, but here are some highlights:

If your insurance and finances allow, have your child use an insulin pump to lower the risk of low blood sugar and help keep blood sugar levels in range. Your diabetes educator will need to train you and your child on using the pump.

Also have your child use a continuous glucose monitor (CGM), if possible, for around-the-clock blood sugar readings. Your child will still need twice-daily finger sticks to ensure the CGM is measuring blood sugar levels accurately.

Talk to your child about healthy eating and being active. Both have a big impact on blood sugar levels and on feeling well in general. Get Support Can Type 1 Diabetes Be Cured? Currently, there isn't a cure for type 1 diabetes. However, what we know about the condition is constantly evolving, new technologies and medicines are being developed, and researchers are making important breakthroughs. Right now, people of all ages are leading full, healthy lives with type 1 diabetes. You can too!

None None None None

None None Overview None None None None None None None None None None None None None None None None

None None None None Symptoms None None None None None None None None None None None None None None None

None None None None Prevention and

treatment None None None None None None None None None None None None None None None None None None None

None None Maybe it, it's a different type None None Gestational

diabetes None None None None None None None None None None None None None None None None None None None

diabetes None None None None None None None None None None None None None None None None None None None

None None Check if you have type 2

diabetes None None None None None None None None None None None None None None None None None None None

None None If you're diagnosed with diabetes None None If you have questions

about your diagnosis None None What happens after the

diagnosis None None None None None None None None None Travelling with diabetes

medicines If you're going on holiday:

pack extra medicine ,Äi speak to your diabetes nurse about how much to take
carry your medicine in your hand luggage just in case checked-in bags go missing or get damaged
if you're flying with a medicine you inject, get a letter from your GP that says you need it to treat diabetesMedicines for type 2
diabetesNoneNoneSide effectsNoneNoneHow to get free prescriptions for diabetes medicineNoneNoneNoneNoneNone NoneNone NoneNone Being active lowers your blood sugar levelPhysical exercise helps lower your blood sugar level. You should aim for 2.5 hours of activity a week.

You can be active anywhere as long as what you're doing gets you out of breath.

This could be:

fast walking
climbing stairs
doing more strenuous housework or gardening
The charity Diabetes UK has tips on how to get active.Staying healthy if you have type 2 diabetesYour weight is importantLosing weight (if you're overweight) will make it easier for your body to lower your blood sugar level, and can improve your blood pressure and cholesterol.

To know whether you're overweight, work out your body mass index (BMI).

If you need to lose weight, it is recommended for most people to do it slowly over time. Aim for around 0.5 to 1kg a week.

The charity Diabetes UK has more information on healthy weight and weight loss.

There is evidence that eating a low-calorie diet (800 to 1,200 calories a day) on a short-term basis (around 12 weeks) can help with symptoms of type 2 diabetes. And some people have found that their symptoms go into remission.

A low-calorie diet is not safe or suitable for everyone with type 2 diabetes, such as people who need to take insulin. So it is important to get medical advice before going on this type of diet.

Diabetes UK has more information on low-calorie diets.You can eat many types of foodsNoneNoneHelp with changing your dietNoneNoneNoneNoneNoneNoneNone NoneNone Every 3 monthsNoneNoneOnce a yearNoneNoneNoneNoneNoneNoneNone NoneNone Checking your eyesYour eyes should be checked every year for damaged blood vessels, which can cause sight problems (diabetic retinopathy) and blindness.

Eye checks can detect damage before it affects your sight. Treating damaged blood vessels early can prevent sight problems.

Speak to your GP immediately if you notice changes to your sight, including:

blurred vision, especially at night
shapes floating in your vision (floaters)
sensitivity to lightGetting your heart checkedPregnancy and diabetesSpeak
to your GP or care team if you're thinking of having a baby. You can have
a safe pregnancy and birth if you have type 2 diabetes. You will need
additional check-ups during the pregnancy.

If you,Äre trying to get pregnant, you should be able to have your HbA1c
levels measured monthly to help manage your blood glucose levels.Loss of
feelingNoneNoneLooking after your feetNoneNoneNoneNoneNone NoneNone
NoneNone Blogs, forums and appsDiabetes.co.uk forum ,Äi discussions about
living with and managing diabetes
Diabetes UK blogs ,Äi a collection of blogs on work and diabetes, food,
eyes and more
Diabetes Chat ,Äi scheduled chats with healthcare professionals or just
the chance to talk to others
NHS Apps Library ,Äi find apps and tools to help you manage your
diabetes, including some that link you to a lifestyle coachTake a course
to help you manage your diabetesTelling others can be difficultIt can be
difficult to tell others you have diabetes, but it can help for certain
people to know:

family can support you ,Äi especially as you will need to make changes to
what you eat
it's important your colleagues or employer know in case of an emergency
being diagnosed with diabetes can affect your mood ,Äi telling your
partner will help them understand how you feelTelling DVLA you have type
2 diabetesCarry medical ID in case of an emergencySome people choose to
wear a special wristband or carry something in their wallet that says
they have diabetes, in case of an emergency.

If it's known that you have diabetes, this can make a difference to the
treatment you'll receive.

Search the internet for "medical ID" to find websites that sell
them.Support groups for type 2 diabetesNoneNoneNoneNoneNone NoneNone
NoneNone CausesAcanthosis nigricans might be related to:

Insulin resistance. Most people who have acanthosis nigricans have also
become resistant to insulin. Insulin is a hormone secreted by the
pancreas that allows the body to process sugar. Insulin resistance is
what leads to type 2 diabetes. Insulin resistance is also related to
polycystic ovarian syndrome and might be a factor in why acanthosis
nigricans develops.
Certain drugs and supplements. High-dose niacin, birth control pills,
prednisone and other corticosteroids may cause acanthosis nigricans.
Cancer. Some types of cancer cause acanthosis nigricans. These include
lymphoma and cancers of the stomach, colon and liver.OverviewRisk
factorsThe risk of acanthosis nigricans is higher in people who have
obesity. The risk is also higher in people with a family history of the
condition, especially in families where obesity and type 2 diabetes are
also common.SymptomsComplicationsPeople who have acanthosis nigricans are
much more likely to develop type 2 diabetes.When to see a
doctorNoneNoneNoneNoneNone NoneNone NoneNone Overweight, obesity, and

physical inactivity You are more likely to develop type 2 diabetes if you are not physically active and are overweight or have obesity. Extra weight sometimes causes insulin resistance and is common in people with type 2 diabetes. The location of body fat also makes a difference. Extra belly fat is linked to insulin resistance, type 2 diabetes, and heart and blood vessel disease. What are the symptoms of diabetes? Insulin resistance Type 2 diabetes usually begins with insulin resistance, a condition in which muscle, liver, and fat cells do not use insulin well. As a result, your body needs more insulin to help glucose enter cells. At first, the pancreas makes more insulin to keep up with the added demand. Over time, the pancreas can't make enough insulin, and blood glucose levels rise. What causes type 1 diabetes? Genes and family history As in type 1 diabetes, certain genes may make you more likely to develop type 2 diabetes. The disease tends to run in families and occurs more often in these racial/ethnic groups:

African Americans
Alaska Natives
American Indians
Asian Americans
Hispanics/Latinos
Native Hawaiians
Pacific Islanders

Genes also can increase the risk of type 2 diabetes by increasing a person's tendency to become overweight or have obesity. What causes type 2 diabetes? What causes gestational diabetes? Scientists believe gestational diabetes, a type of diabetes that develops during pregnancy, is caused by the hormonal changes of pregnancy along with genetic and lifestyle factors. Insulin resistance None None Genes and family history Having a family history of diabetes makes it more likely that a woman will develop gestational diabetes, which suggests that genes play a role. Genes may also explain why the disorder occurs more often in African Americans, American Indians, Asians, and Hispanics/Latinas. What else can cause diabetes? Genetic mutations, other diseases, damage to the pancreas, and certain medicines may also cause diabetes.

Genetic mutations

Monogenic diabetes is caused by mutations, or changes, in a single gene. These changes are usually passed through families, but sometimes the gene mutation happens on its own. Most of these gene mutations cause diabetes by making the pancreas less able to make insulin. The most common types of monogenic diabetes are neonatal diabetes and maturity-onset diabetes of the young (MODY). Neonatal diabetes occurs in the first 6 months of life. Doctors usually diagnose MODY during adolescence or early adulthood, but sometimes the disease is not diagnosed until later in life.

Cystic fibrosis NIH external link produces thick mucus that causes scarring in the pancreas. This scarring can prevent the pancreas from making enough insulin.

Hemochromatosis causes the body to store too much iron. If the disease is not treated, iron can build up in and damage the pancreas and other organs.

Hormonal diseases

Some hormonal diseases cause the body to produce too much of certain hormones, which sometimes cause insulin resistance and diabetes.

Cushing's syndrome occurs when the body produces too much cortisol, often called the "stress hormone."
Acromegaly occurs when the body produces too much growth hormone.
Hyperthyroidism occurs when the thyroid gland produces too much thyroid hormone.

Damage to or removal of the pancreas

Pancreatitis, pancreatic cancer, and trauma can all harm the beta cells or make them less able to produce insulin, resulting in diabetes. If the damaged pancreas is removed, diabetes will occur due to the loss of the beta cells.

Medicines

Sometimes certain medicines can harm beta cells or disrupt the way insulin works. These include

niacin, a type of vitamin B3

certain types of diuretics, also called water pills

anti-seizure drugs

psychiatric drugs

drugs to treat human immunodeficiency virus (HIV [NIH external link](#))

pentamidine, a drug used to treat a type of pneumonia [External link](#)

glucocorticoids, medicines used to treat inflammatory illnesses such as rheumatoid arthritis [NIH external link](#), asthma [NIH external link](#), lupus [NIH external link](#), and ulcerative colitis

anti-rejection medicines, used to help stop the body from rejecting a transplanted organ

Statins, which are medicines to reduce LDL ("bad") cholesterol levels, can slightly increase the chance that you'll develop diabetes. However, statins help protect you from heart disease and stroke. For this reason, the strong benefits of taking statins outweigh the small chance that you could develop diabetes.

If you take any of these medicines and are concerned about their side effects, talk with your doctor. Waist circumference
Another way to estimate your risk of developing diabetes is to measure your waist circumference. Men have a higher risk of developing diabetes if their waist circumference is more than 40 inches, while women who are not pregnant have a higher risk if their waist circumference is more than 35 inches.^{6,7}

Waist circumference is an indirect measurement of the amount of fat in your abdomen. Having a large waist circumference is a risk factor for diabetes and heart disease, even if you have a normal BMI.
What are the risk factors for type 2 diabetes?
None
None
Does your weight put you at risk for type 2 diabetes?
None
None
Body mass index
None
None
None
None
None
What causes type 1 diabetes?
Experts think type 1 diabetes is caused by genes and factors in the environment, such as viruses, that might trigger the disease. Researchers are working to pinpoint the causes of type 1 diabetes through studies such as TrialNet
What is type 1 diabetes?
How do health care professionals diagnose type 1 diabetes?
Health care professionals usually test people for type 1 diabetes if they have

clear-cut diabetes symptoms. Health care professionals most often use the random plasma glucose (RPG) test to diagnose type 1 diabetes. This blood test measures your blood glucose level at a single point in time. Sometimes health professionals also use the A1C blood test to find out how long someone has had high blood glucose.

Even though these tests can confirm that you have diabetes, they can't identify what type you have. Treatment depends on the type of diabetes, so knowing whether you have type 1 or type 2 is important.

To find out if your diabetes is type 1, your health care professional may test your blood for certain autoantibodies. Autoantibodies are antibodies that attack your healthy tissues and cells by mistake. The presence of certain types of autoantibodies is common in type 1 but not in type 2 diabetes.

Because type 1 diabetes can run in families, your health care professional can test your family members for autoantibodies. Type 1 diabetes TrialNet, an international research network, also offers autoantibody testing to family members [External link of people diagnosed with the disease](#). The presence of autoantibodies, even without diabetes symptoms, means the family member is more likely to develop type 1 diabetes. If you have a brother or sister, child, or parent with type 1 diabetes, you may want to get an autoantibody test. People age 20 or younger who have a cousin, aunt, uncle, niece, nephew, grandparent, or half-sibling with type 1 diabetes also may want to get tested. [Who is more likely to develop type 1 diabetes?](#) [What medicines do I need to treat my type 1 diabetes?](#) If you have type 1 diabetes, you must take insulin because your body no longer makes this hormone. Different types of insulin start to work at different speeds, and the effects of each last a different length of time. You may need to use more than one type. You can take insulin a number of ways. Common options include a needle and syringe, insulin pen, or insulin pump.

Some people who have trouble reaching their blood glucose targets with insulin alone also might need to take another type of diabetes medicine that works with insulin, such as pramlintide [NIH external link](#). Pramlintide, given by injection, helps keep blood glucose levels from going too high after eating. Few people with type 1 diabetes take pramlintide, however. The NIH has recently funded a large research study to test use of pramlintide along with insulin and glucagon in people with type 1 diabetes. Another diabetes medicine, metformin, may help decrease the amount of insulin you need to take, but more studies are needed to confirm this. Researchers are also studying other diabetes pills that people with type 1 diabetes might take along with insulin.

Hypoglycemia, or low blood sugar, can occur if you take insulin but don't match your dose with your food or physical activity. Severe hypoglycemia can be dangerous and needs to be treated right away. [Learn more about hypoglycemia and how to prevent or treat it.](#) [What are the symptoms of type 1 diabetes?](#) [How else can I manage type 1 diabetes?](#) Along with insulin and any other medicines you use, you can manage your diabetes by taking care of yourself each day. Following your diabetes meal plan, being physically active, and checking your blood

glucose often are some of the ways you can take care of yourself. Work with your health care team to come up with a diabetes care plan that works for you. If you are planning a pregnancy with diabetes, try to get your blood glucose levels in your target range before you get pregnant. Do I have other treatment options for my type 1 diabetes?NoneNone What health problems can people with type 1 diabetes develop?None Over time, high blood glucose leads to problems such as

- heart disease
- stroke
- kidney disease
- eye problems
- dental disease
- nerve damage
- foot problems
- depression
- sleep apnea

If you have type 1 diabetes, you can help prevent or delay the health problems of diabetes by managing your blood glucose, blood pressure, and cholesterol, and following your self-care plan.None How is monogenic diabetes diagnosed?Genetic testing can diagnose most forms of monogenic diabetes. A correct diagnosis with proper treatment should lead to better glucose control and improved health in the long term.

Genetic testing is recommended if 6

diabetes is diagnosed within the first 6 months of age diabetes is diagnosed in children and young adults, particularly those with a strong family history of diabetes, who do not have typical features of type 1 or type 2 diabetes, such as the presence of diabetes-related autoantibodies, obesity, and other metabolic features a person has stable, mild fasting hyperglycemia, especially if obesity is not presentWhat are monogenic forms of diabetes?What do I need to know about genetic testing and counseling?Genetic testing for monogenic diabetes involves providing a blood or saliva sample from which DNA NIH external link is isolated. The DNA is analyzed for changes in the genes that cause monogenic diabetes. Genetic testing is done by specialized labs.

Abnormal results can determine the gene responsible for diabetes in a particular individual or show whether someone is likely to develop a monogenic form of diabetes in the future. Genetic testing can be helpful in selecting the most appropriate treatment for individuals with monogenic diabetes. Testing is also important in planning for pregnancy and to understand the risk of having a child with monogenic diabetes if you, your partner, or your family members have monogenic diabetes.

Most forms of NDM and MODY are caused by autosomal dominant NIH external link mutations, meaning that the condition can be passed on to children when only one parent carries or has the disease gene. With dominant mutations, a parent who carries the gene has a 50 percent chance of having an affected child with monogenic diabetes.

In contrast, with autosomal recessive NIH disease, a mutation must be inherited from both parents. In this instance, a child has a 25 percent chance of having monogenic diabetes.

For recessive forms of monogenic diabetes, testing can indicate whether parents or siblings without disease are carriers for recessive genetic conditions that could be inherited by their children.

While not as common, it is possible to inherit mutations from the mother only (X-linked mutations). Also not as common are mutations that occur spontaneously.

More information about the genes that cause NDM and MODY, the types of mutations responsible for the disease (autosomal dominant, autosomal recessive, X-linked, etc.), and clinical features is provided in the American Diabetes Association Standards of Medical Care in Diabetes External link.

If you suspect that you or a member of your family may have a monogenic form of diabetes, you should seek help from health care professionals, physicians and genetic counselors, who have specialized knowledge and experience in this area. They can determine whether genetic testing is appropriate; select the genetic tests that should be performed; and provide information about the basic principles of genetics, genetic testing options, and confidentiality issues. They also can review the test results with the patient or parent after testing, make recommendations about how to proceed, and discuss testing options for other family members.

What is neonatal diabetes mellitus (NDM)? How is monogenic diabetes treated and managed? Treatment varies depending on the specific genetic mutation that has caused a person's monogenic diabetes. People with certain forms of MODY and NDM can be treated with a sulfonylurea, an oral diabetes medicine that helps the body release more insulin into the blood. Other people may need insulin injections. Some people with MODY may not need medications and are able to manage their diabetes with lifestyle changes alone, which include physical activity and healthy food choices. Your physician and diabetes care team will work with you to develop a plan to treat and manage your diabetes based on the results of genetic testing.

What is maturity onset diabetes of the young (MODY)? Clinical Trials The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and other components of the National Institutes of Health (NIH) conduct and support research into many diseases and conditions. What are clinical trials, and are they right for you? None None None None None None

None None None None None None None None None None None None None None None None

None None Why is there anxiety around blood sugar testing? None None 5 Ways to overcome blood sugar test

anxiety None None None None None None None None None None None None 4. YAZIO , "LOSE WEIGHT FASTA new free weight loss app, Yazio encourage mindfulness and helps bring health and wellness to the forefront of the user," "mind to promote sustainable weight loss. The app does more than just allow you to log calories and track food, but also helps users increase or decrease activity levels. Premium members can also take advantage of the app," "coaching system to receive daily nutritional advice. Yazio centers less

around low-carb lifestyles specifically, but still features a carb chart front and center on the status page.¹ MYFITNESSPAL⁵. MYNETDIARYThis app features a searchable database with almost a million food entries for users. Those using MyNetDiary can also utilize their website to log their entries. It boasts itself as the quickest of food data entry apps on the market, scanning barcodes with ease and retrieving nutritional info almost immediately. My Net Diary also has a separate Diabetes Tracking app that allows users to track blood sugar, A1c, insulin, cholesterol, as well as other custom trackers. The app helps users see the big picture of their health. MyNetDiary also has a community of users who share videos of their success stories to help people keep up the motivation. Also, if you need help creating a plan and have a target weight, MyNetDiary can craft a balanced diet plan for you.

Thankfully, in this day and age, there is no shortage of helpful information or tools to equip ourselves with to live optimally and make the best choices for maintaining our health. Carb and calorie-counting apps are no different and there,Äs one out there for you and your goals.² CARB MANAGER,ÄiLOW CARB AND KETO DIET TRACKERNoneNone³. LIFESUM HEALTH APP ,Äi GET HEALTHY AND LOSE WEIGHTNoneNoneNoneNoneNoneNoneNoneNone ADVANCED SYMPTOMS OF HYPERGLYCEMIAFruity-smelling breath

Weight loss

Abdominal pain

Confusion

Vomiting

Exhaustion

ComaWHAT IS HYPERGLYCEMIA?HOW DO I TREAT HYPERGLYCEMIA?Check your blood sugar and see if it is above your target blood sugar range,Äitarget ranges vary per person.

If your blood glucose is above your upper target level, try to lower with steady-state cardio such as a brisk walk, a brief workout on the elliptical or treadmill, or a slow jog.

Adjust insulin dosages, per your doctor,Äs instructions.

Drink water. Water helps prevent dehydration and helps your kidneys remove sugar through urine.

If your blood sugar is abnormally high, contact your health care team in the event of an emergency.

Take note of any reasons or potential changes to your routine that may be contributing to high blood sugar:

What did you eat or drink? Did you eat something higher in carbohydrates than usual?

Are you stressed?

Are you getting enough sleep?

Did you just finish working out? Read why your blood sugar can be high after exercise.

Are you traveling or has your exercise/eating schedule changed?

Along with a ,Äsick day,Äu plan, make a plan with your doctor about when you should seek medical assistance or when to take extra units of insulin or other medications. As you learn which methods are most effective at treating hyperglycemia, take note of them to use later. In your notes, be sure to include how much your blood sugar drops, any adjustments to medication and any relief of hyperglycemic symptoms.WHY DOES IT OCCUR?NoneNoneINITIAL SIGNS AND SYMPTOMS OF

HYPERGLYCEMIANoneNoneNoneNoneNoneNoneNoneNoneNone

MAKE FRIENDS

WITH YOUR NUMBERSNoneNoneHOW TO USE A BLOOD SUGAR

METERNoneNoneNoneNoneNoneNoneNoneNone NoneNone NoneNone WHAT CAN YOU EAT?People with type 2 can eat anything that they choose to eat, as long as they correctly dose the amount of insulin needed (when using insulin) for the food that is eaten or as long as they consider the effects of these foods in their blood glucose levels. Although someone might assume that sticking to a strict no-carb diet would help us, there are MANY other things that affect our blood sugar. Everything in moderation! WHAT IS TYPE 2?HOW MIGHT IT AFFECT OUR MOOD?Type 2 diabetes can be stressful at times, so bear with us! Here are the symptoms of highs and lows.

High symptoms: nausea, deep sighing breaths, confusion, flushed and warm skin, drowsiness

Low symptoms: shaky, pale and sweaty skin, headache, hunger, weakness, tremblingHOW DO YOU MANAGE IT?GENERAL TREATMENTThe day in the life of someone with type 2 involves frequent blood sugar testing and oral meds.WHAT ARE THE DEVICES THAT YOU USE?WHAT DO YOU DO IN CASE OF AN EMERGENCY?In case of an emergency, there are few things to do. If we are ever passed out or unconscious, immediately call emergency services and react to the situation as if we were ,Äuhaving a low,Äù or experiencing severe hypoglycemia. If we are unconscious, you may have to administer emergency glucagon. If we are conscious, fast-acting glucose needs to be taken immediately. This means juice boxes, candy, glucose tablets, or any other sugary food or drink that can be consumed easily.TOP

QUESTIONS/COMMENTS FOR FRIENDS AND FAMILY TO AVOIDNoneNone NoneNone

NoneNone NoneNoneWHAT CAUSES TYPE 2 DIABETES?NoneNoneTHE RISKS OF HAVING TYPE 2 DIABETESNoneNoneWHAT CAN I DO TODAY TO DECREASE THE RISKS OF TYPE 2 DIABETES COMPLICATIONS?NoneNoneNoneNoneNone NoneNone NoneNone See your regular health care team twice a year or more.

See an eye doctor, foot doctor, and dentist once a year or more.

Regular health care helps you stay healthy, especially when you have diabetes. Ask to set up your next visit before you leave your health care provider,Äs office.None2. How will I know if my medicines are working? bulls eye and medicine bottle

Are your ABC numbers close to or at your target levels?

If the answer is yes, then your medicines and efforts are working. Keep up the good work!

If the answer is no, then meet with your health care team to see if your treatment plan needs to be changed. Be sure to take all of your medicines and blood sugar records when you meet with your care team. Bring prescription and over-the-counter medicines.NoneNoneWhen:

The best times for diabetes education and support are:

When you,Äre first diagnosed with diabetes.

Once a year when you review your educational, nutritional, and emotional needs.

When new complications come up,Äifor example, changes in your physical or emotional health or financial needs.

During changes in your care,Äifor example, changes to your health care team, treatment plan, or living situation.NoneNoneGetting vaccinated is an important part of staying healthy, especially when you have diabetes.

That, because people with diabetes have a higher risk of serious health problems that vaccines can prevent.

Ask your health care team what vaccines you need and when.

NoneNoneNoneNoneNone NoneNone NoneNone Grains and StarchesTake only as much grain or starchy vegetables, such as rice, bread, potatoes, or green peas, to fill 1/2 of your plate.

Choose high-fiber grains like steamed brown rice and whole-grain breads like whole wheat and cornbread.

Avoid using butter or margarine on bread, rice, and other grains and starches.

Take small portions or avoid starches with heavy sauces like macaroni and cheese and potato salad.

ProteinsTake 2-3 ounces of protein, such as chicken or other lean meat, fish, or bean dishes (like three-bean salad), to fill 1/2 of your plate.

Pick dishes with baked or grilled lean meat (like chicken without the skin or beef with the fat cut off), fish, game, or shrimp.

Try a turkey burger. And top off your burger or sandwich with fresh veggies and mustard rather than mayonnaise and cheese.

Take just a taste of meats that are breaded, fried, or cooked with a lot of fat or heavy sauces, like fried chicken or chicken-fried steak.

Choose protein-rich bean dishes. Chickpeas and black-eyed peas are good choices. But take only small amounts of bean dishes cooked with added sugar and fat.

SweetsChoose fresh fruits, such as pears, apples, strawberries, or melons, or a fruit salad without sugar or whipped cream added. Fruit is an excellent source of fiber, vitamins, and minerals.

Have small servings of foods that are high in sugar and fat, like cookies, cake, cobblers, or pies. Or skip the sweets

altogether.

DrinksDrink water, unsweetened coffee or tea, or other sugar-free beverages.

If you drink alcoholic beverages, have no more than one drink a day if you're a woman and no more than two drinks a day if you're a man.

Always eat food when drinking alcohol, and never drink on an empty stomach.

NoneNoneNone NoneNone NoneNone Find resources.Different kinds of organizations can help with different kinds of resources, like meal planning, diabetes care, diabetes camps for children, housekeeping, or emotional support. Here are some places to go for help:

Local diabetes groups, senior centers, faith communities, and other community groups that provide support services. Your loved one's health care provider may have a list of local services. You can also check the Resources for Everyone section for ideas.

Local pharmacies. Many pharmacies offer individual and group counseling.

Your loved one's health insurance company or Medicare. Ask what diabetes education and support services are covered. For example, Medicare Part B covers a wide range of diabetes education and training.

State health and social services. Look for information on the state government website where your loved one lives. Ask about community programs for children, seniors, and people with disabilities.

Your loved one may need a referral from a health care provider to get services from some organizations. You can help them work with their doctors to get what they need. Remind your loved one that asking for a referral to a diabetes self-management education and support (DSMES) program might be helpful.

To find a DSMES program recognized by the American Diabetes Association or accredited by the Association of Diabetes Care & Education Specialists, go to the Find a Diabetes Education Program in Your Area website. Offer your support. Plan your visits. When you visit your loved one, you may worry that you don't have enough time to do everything you want to. Talk with your loved one ahead of time about the kind of help they may need. You may feel less stressed if you can focus on a few important errands or chores during your visit.

Research your company's leave policies. Some companies allow sick leave to be used to care for a relative.

Remember that your loved one may need help with things like home cleaning and repairs, shopping, or other tasks that are not directly related to their health.

Check with your loved one or a caregiver to learn what medical care they may need. This information will help you set clear, realistic goals for your visit. For example:

Do they need to see specialists, such as a foot doctor (podiatrist) or eye doctor (optometrist or ophthalmologist)?

Do they need more testing supplies?

Try to make time to do things that are fun and relaxing with your loved one. Suggest taking a walk together. Offer to play a game of cards or a board game. Learn about diabetes. Stay in touch. From time to time, ask your loved one how they are coping with their diabetes and how you can help. With your loved one's permission, try to find people in the community, like other family members, friends, or neighbors, who can visit and provide support if needed.

Check in regularly with the people who are providing care to your loved one. Find out how they are coping and how you can help them. Gather information and keep in one place. NoneNoneNoneNoneNone NoneNone NoneNone Manage Your ABCsAsk your health care team to help you set and reach goals to manage your blood sugar, blood pressure, and cholesterol and stop smoking,Äalso known as the ABCs of diabetes.

A1C (a measure of your average blood sugar over 3 months): The goal set for many people is less than 7% for this blood test, but your doctor might set a different goal for you.

Blood pressure: High blood pressure causes heart disease. The goal is less than 140/90 mmHg for most people but check with your doctor to see what your goal should be.

Cholesterol: LDL or , 'bad,' cholesterol builds up and clogs your blood vessels. HDL or , 'good,' cholesterol helps remove the , 'bad,' cholesterol from your blood vessels. Ask your doctor what your cholesterol numbers should be.

Smoking: If you smoke or use other tobacco products, take steps to quit.
Call 1-800-QUIT-NOW (1-800-784-8669) for support.

Teach your family about your diabetes and the ABCs so they can help you. Tips To Keep Your Eyes Healthy None None How Can Diabetes Harm Your Eyes? None None Common Eye Diseases Among People With Diabetes None None None None None None None None None None Questions To Ask Your Pharmacist What are the brand and generic (nonbrand) names of my medicines?

What is each of my medicines for?

When should I take each medicine and how much should I take?

How long should I use this medicine? Can I stop using it if I feel better?

What should I do if I miss a dose or take too much?

What are the possible side effects?

How should I store my medicine? Does it have to be kept in the fridge?

Will this medicine take the place of anything I already take?

Are there other medicines I should avoid? Are there foods, drinks, or activities that I should avoid? Tips To Manage Your Medicines Manage Your ABCs Ask your health care team to help you set and reach goals to manage your blood sugar, blood pressure, and cholesterol and stop smoking, also known as the ABCs of diabetes.

A1C (a measure of your average blood sugar over 3 months): The goal set for many people is less than 7% for this blood test, but your doctor might set a different goal for you.

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Cholesterol: LDL or ,bad, cholesterol builds up and clogs your blood vessels. HDL or ,good, cholesterol helps remove the ,bad, cholesterol from your blood vessels. Ask your doctor what your cholesterol numbers should be.

Smoking: If you smoke or use other tobacco products, take steps to quit. Call 1-800-QUIT-NOW (1-800-784-8669) for support.

Teach your family about your diabetes and the ABCs so they can help you. Why Do Your Medicines Matter? None None How Can Your Pharmacist Help You? None None None None None None None None None None Manage Your ABCs Ask your health care team to help you set and reach goals to manage your blood sugar, blood pressure, and cholesterol and stop smoking, also known as the ABCs of diabetes.

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Teach your family about your diabetes and the ABCs so they can help you. Tips To Keep Your Teeth Healthy None None How Can Diabetes Harm Your Teeth? None None What Are the Signs of Gum Disease? None None None None None

NoneNone NoneNone What Are the Signs of Balance Problems?Feeling dizzy or lightheaded.

Feeling like your head is spinning.

Falling or feeling like you may fall.Tips To Keep Your Ears HealthyWhat

You Should Know About Hearing LossHearing loss can make you appear confused or as if you are not paying attention.

Uncorrected hearing loss can make you feel depressed or anxious.

Family and friends may be aware of your hearing loss before you are.

Hearing loss affects how you communicate at work, with family, and with

your health care team.Visit Your Audiologist Right Away if YouManage Your

ABCsAsk your health care team to help you set and reach goals to manage

your blood sugar, blood pressure, and cholesterol and stop smoking,Äalso known as the ABCs of diabetes.

A1C (a measure of your average blood sugar over 3 months): The goal set for many people is less than 7% for this blood test, but your doctor might set a different goal for you.

Blood pressure: High blood pressure causes heart disease. The goal is less than 140/90 mmHg for most people but check with your doctor to see what your goal should be.

Cholesterol: LDL or ,Äbad,Ä cholesterol builds up and clogs your blood vessels. HDL or ,Ägood,Ä cholesterol helps remove the ,Äbad,Ä cholesterol from your blood vessels. Ask your doctor what your cholesterol numbers should be.

Smoking: If you smoke or use other tobacco products, take steps to quit.

Call 1-800-QUIT-NOW (1-800-784-8669) for support.

Teach your family about your diabetes and the ABCs so they can help you.How Can Diabetes Harm Your Ears?NoneNoneNoneNoneNone NoneNone

NoneNone What is the Best Way to Keep Your Kidneys Healthy?Keep your blood pressure below 140/90, or ask your doctor what the best blood pressure target is for you.

Stay in your target cholesterol range.

Eat foods lower in salt.

Eat more fruits and vegetables.

Stay active.

Take your medications as directed.What Happens If You Have Kidney

Damage?Who is More Likely to Develop Kidney Disease?Approximately 1 of 3 adults with diabetes and 1 of 5 adults with high blood pressure may have CKD.

In addition to diabetes and high blood pressure, other problems that put you at greater chance of kidney disease include: heart disease, obesity

(being overweight), and a family history of CKD. Kidney infections and a physical injury can also cause kidney disease.How Will You Know If You

Have Kidney Problems?What Can You Do to Prevent Kidney Failure?Get tested for CKD regularly if you are at risk.

Find it early. Treat it early.

Ask your doctor to test your blood or pee. If you have diabetes, get tested yearly.

If you have diabetes, stay in your target blood sugar range as much as possible.

Lose weight if you are overweight.

Get active. Physical activity helps control blood sugar levels.

Quit smoking.

Getting a checkup? Make sure to get your kidneys checked too.

Take medications as directed.

If you have CKD, meet with a dietitian to make a kidney-healthy eating plan. If You Have Diabetes, Take These Steps:NoneNoneNoneNoneNone NoneNone NoneNone SmokingThe risk of developing type 2 diabetes is 30% to 40% higher for people who currently smoke than for those who don,Äôt. Evidence shows that smoking is associated with increased belly fat, a known risk factor for type 2 diabetes. The more cigarettes a person smokes, the higher their risk of developing type 2 diabetes. People with diabetes who smoke are more likely than people who don,Äôt smoke to have trouble managing their blood sugar.

People with diabetes who smoke also have higher risks of serious complications, such as heart disease, kidney disease, and poor blood flow in the legs and feet that can lead to infections, ulcers, and amputations. Other complications include retinopathy (eye disease that can cause blindness) and peripheral neuropathy (nerve damage in the arms and legs that causes numbness, pain, weakness, and poor coordination).

About 34 million US adults smoke cigarettes, and 58 million people who don,Äôt smoke are exposed to secondhand smoke.

CDC,Äôs Response

CDC,Äôs Office of Smoking and Health is at the forefront of the nation,Äôs efforts to reduce deaths and prevent chronic diseases that result from commercial* tobacco use, including type 2 diabetes. OSH prioritizes health equity by creating resources and opportunities for all people to be as healthy as possible.

CDC and its partners promote efforts to:

Prevent young people from starting to use tobacco.

Promote quitting among adults and young people.

Reduce people,Äôs exposure to secondhand smoke.

Advance health equity by identifying and eliminating tobacco-related disparities.

Since 2012, CDC has been educating the public about the consequences of smoking and exposure to secondhand smoke and encouraging people who smoke to quit through its Tips From Former Smokers-Æ (Tips-Æ) education campaign. The Tips campaign features real people who are living with serious health conditions caused by smoking and secondhand smoke exposure. The newest Tips series adds compelling stories from family members who take care of loved ones affected by a smoking-related disease or disability.

Tips connects people who smoke with resources to help them quit, including 1-800-QUIT-NOW, which directs people to free services from their state quitlines.

,àóWhen CDC references tobacco on this web page, we are referring to the use of commercial tobacco and not the sacred and traditional use of tobacco by some American Indian communities.

Preventable Risk Factors and CDC,Äôs ResponseDiabetes Complications and CDC,Äôs ResponseCDC strives to safeguard the health and improve the quality of life of all people with diabetes. Central to that effort is

helping them prevent or reduce the severity of diabetes complications, including heart disease (the leading cause of early death among people with diabetes), kidney disease, blindness, and nerve damage that can lead to lower-limb amputations.

CDC's Response

Diabetes self-management education and support (DSMES) services help people meet the challenges of self-care by providing them with the knowledge and skills to deal with daily diabetes management: eating healthy foods, being active, checking blood sugar, taking medicines, and managing stress. DSMES has been shown to reduce A1C levels (average blood sugar over the last 2 to 3 months), reduce the onset and severity of diabetes complications, improve quality of life, and lower health care costs.

People who live in rural areas have higher rates of diabetes compared to people who live in urban areas, but 62% of rural counties have limited DSMES services. Using telehealth (delivery by phone, Internet, or videoconference) allows more patients in rural areas to benefit from DSMES. CDC funds state and local health departments to improve access to, participation in, and health benefit coverage for DSMES, with emphasis on programs that achieve Association of Diabetes Care & Education Specialists accreditation or American Diabetes Association recognition. These programs meet national quality standards and may be more sustainable because of reimbursement eligibility. Prediabetes, None, Overweight and Lack of Physical Activity, None, None, None, None, None, None, None, None, Waist circumference. Another way to estimate your risk of developing diabetes is to measure your waist circumference. Men have a higher risk of developing diabetes if their waist circumference is more than 40 inches, while women who are not pregnant have a higher risk if their waist circumference is more than 35 inches.^{6,7}

Waist circumference is an indirect measurement of the amount of fat in your abdomen. Having a large waist circumference is a risk factor for diabetes and heart disease, even if you have a normal BMI. What are the risk factors for type 2 diabetes? None. Does your weight put you at risk for type 2 diabetes? None. Body mass index, None, None, None, None, None, None, None. Treating type 2 diabetes. Type 2 diabetes is treated with changes in your diet and depending on the response of your blood glucose levels, sometimes tablets and insulin. Early in the course of type 2 diabetes, planned weight loss can even reverse the disease. About type 2 diabetes. Complications of type 2 diabetes. Diabetes can cause serious long-term health problems. It's the most common cause of vision loss and blindness in people of working age.

Everyone with diabetes aged 12 or over should be invited to have their eyes screened once a year for diabetic retinopathy.

Diabetes is also responsible for most cases of kidney failure and lower limb amputation, other than accidents. Symptoms of diabetes. Preventing type 2 diabetes. If you're at risk of type 2 diabetes, you may be able to prevent it developing by making lifestyle changes.

These include:

losing weight if you're overweight, and maintaining a healthy weight
eating a healthy, balanced diet

stopping smoking if you smoke

drinking alcohol in moderation

taking plenty of regular exercise

Causes of type 2 diabetes
Living with type 2 diabetes
If you already have type 2 diabetes, it may be possible to control your symptoms by making the above changes. This also minimises your risk of developing complications.

Check if you have type 2

diabetes
See a GP if:

What causes diabetes?
The amount of glucose in the blood is controlled by a hormone called insulin, which is produced by the pancreas (a gland behind the stomach).

When food is digested and enters your bloodstream, insulin moves glucose out of the blood and into cells, where it's broken down to produce energy.

However, if you have diabetes, your body is unable to break down glucose into energy. This is because there's either not enough insulin to move the glucose, or the insulin produced doesn't work properly.
Pre-diabetes
Type 1 diabetes
In type 1 diabetes, the body's immune system attacks and destroys the cells that produce insulin. As insulin production decreases until no more is produced, your glucose levels increase, which can seriously damage the body's organs.

Type 1 diabetes usually develops before the age of 40, often during the teenage years.

Type 1 diabetes is less common than type 2 diabetes. In the UK, it affects about 10% of all adults with diabetes.

If you're diagnosed with type 1 diabetes, you'll need insulin injections for the rest of your life.

You'll also need to pay close attention to certain aspects of your lifestyle and health to ensure your blood glucose levels stay balanced.

For example, you'll need to eat healthily, take regular exercise and carry out regular blood tests.
When to see a doctor
Type 2 diabetes
Type 2 diabetes is where the body doesn't produce enough insulin, or the body's cells don't react to insulin. This is known as insulin resistance.

If you're diagnosed with type 2 diabetes, you may be able to control your symptoms simply by eating a healthy diet, exercising regularly, and monitoring your blood glucose levels.

However, as type 2 diabetes is a progressive condition, you may eventually need medication, usually in the form of tablets.

Type 2 diabetes is often associated with obesity. Obesity-related diabetes is sometimes referred to as maturity-onset diabetes because it,Äôs more common in older people.Symptoms of diabetesDiabetic eye screeningEveryone with diabetes aged 12 or over should be invited to have their eyes screened once a year by the national diabetes retinal screening service.

If you have diabetes, your eyes are at risk from diabetic retinopathy, a condition that can lead to sight loss if it,Äôs not treated.

Screening, which involves a half-hour check to examine the back of the eyes, is a way of detecting the condition early so it can be treated more effectively.Gestational diabetes (in pregnancy)Other types of diabetesIn addition to Type 1, Type 2 and gestational diabetes, there are a range of other types of diabetes.

These types of diabetes are much rarer, with about 2% of people having them. The rare types of diabetes include:

different types of monogenic diabetes
cystic fibrosis-related diabetes
diabetes caused by rare syndromes
diabetes caused by certain medications such as steroids and antipsychotics
diabetes caused by surgery or hormonal imbalances
Unfortunately, many people with rarer types of diabetes are misdiagnosed leading to delays in getting the right treatment.

NoneNone NoneNone Symptoms of diabetic retinopathyYou won,Äôt usually notice diabetic retinopathy in the early stages, as it doesn,Äôt tend to have any obvious symptoms until it,Äôs more advanced.

However, early signs of the condition can be picked up by taking photographs of the eyes during diabetic eye screening.

Contact your optician immediately if you experience:

gradually worsening vision
sudden vision loss
shapes floating in your field of vision (floaters)
blurred or patchy vision
eye pain or redness
These symptoms don,Äôt necessarily mean you have diabetic retinopathy, but it,Äôs important to get them checked out. Don,Äôt wait until your next screening appointment.About diabetic retinopathyDiabetic eye screeningEveryone with diabetes who is 12 years old or over is invited for eye screening once a year.

Screening is offered because:

diabetic retinopathy doesn,Äôt tend to cause any symptoms in the early stages
the condition can cause permanent blindness if not diagnosed and treated promptly

screening can detect problems in your eyes before they start to affect your vision

if problems are caught early, treatment can help prevent or reduce vision loss

The screening test involves examining the back of the eyes and taking photographs. Depending on your result, you may be advised to return for another appointment a year later, attend more regular appointments, or discuss treatment options with a specialist. How diabetes can affect the eyes Reduce your risk of diabetic retinopathy You can reduce your risk of developing diabetic retinopathy, or help prevent it getting worse, by:

controlling your blood sugar, blood pressure and cholesterol levels

taking your diabetes medication as prescribed

attending all your screening appointments

getting medical advice quickly if you notice any changes to your vision

maintaining a healthy weight, eating a healthy, balanced diet, exercising regularly and stopping smoking Am I at risk of diabetic

retinopathy? Treatments for diabetic retinopathy Treatment for diabetic

retinopathy is only necessary if screening detects significant problems

that mean your vision is at risk.

If the condition hasn't reached this stage, the above advice on managing your diabetes is recommended.

The main treatments for more advanced diabetic retinopathy are:

laser treatment

injections of medication into your eyes

an operation to remove blood or scar tissue from your eyes None None None

None None None None Stage three: proliferative retinopathy This means that new blood vessels and scar tissue have formed on your retina, which can cause significant bleeding and lead to retinal detachment (where the retina pulls away from the back of the eye).

At this stage:

there, it's a very high risk you could lose your vision

treatment will be offered to stabilise your vision as much as possible,

although it won't be possible to restore any vision you've lost Stages

of diabetic retinopathy Diabetic maculopathy In some cases, the blood

vessels in the part of the eye called the macula (the central area of the retina) can also become leaky or blocked. This is known as diabetic maculopathy.

If this is detected:

there, it's a high risk that your vision could eventually be affected

you may be advised to have more frequent specialised testing to monitor your eyes

you may be referred to a hospital specialist to discuss treatments that can help stop the problem getting worse Stage one: background

retinopathy None None Stage two: pre-proliferative

retinopathy None None None None None None None None Laser treatment Laser

treatment is used to treat new blood vessels at the back of the eyes in

the advanced stages of diabetic retinopathy. This is done because the new blood vessels tend to be very weak and often cause bleeding into the eye.

Treatment can help stabilise the changes in your eyes caused by your diabetes and stop your vision getting any worse, although it won't usually improve your sight.

Laser treatment:

involves shining a laser into your eyes ,Ài you,Àôll be given local anaesthetic drops to numb your eyes; eye drops are used to widen your pupils and special contact lenses are used to hold your eyelids open and focus the laser onto your retina
normally takes around 20-40 minutes
is usually carried out on an outpatient basis, which means you won,Àôt need to stay in hospital overnight
may require more than one visit to a laser treatment clinic
isn,Àôt usually painful, although you may feel a sharp pricking sensation when certain areas of your eye are being treated
Treating diabetic retinopathy
Side effects
After treatment, you may have some side effects for a few hours. These can include:

blurred vision ,Ài you won,Àôt be able to drive until this passes, so you,Àôll need to arrange for a friend or relative to drive you home, or take public transport
increased sensitivity to light ,Ài it might help to wear sunglasses until your eyes have adjusted
aching or discomfort ,Ài over-the-counter painkillers, such as paracetamol, should help
Managing your diabetes
Possible complications
You should be told about the risks of treatment in advance. Potential complications include:

reduced night or peripheral (side) vision ,Ài some people may have to stop driving as a result of this
bleeding into the eye or objects floating in your vision (floaters)
being able to ,Àúsee,Àù the pattern made by the laser on the back of your eye for a few months
a small, but permanent, blind spot close to the centre of your vision
Get medical advice if you notice that your sight gets worse after treatment.
Treatments for advanced diabetic retinopathy
Eye injections
In some cases of diabetic maculopathy, injections of a medicine called anti-VEGF may be given directly into your eyes to prevent new blood vessels forming at the back of the eyes.

The main medicines used are called ranibizumab (Lucentis) and aflibercept (Eylea). These can help stop the problems in your eyes getting worse, and may also lead to an improvement in your vision.

During treatment:

the skin around your eyes will be cleaned and covered with a sheet
small clips will be used to keep your eyes open
you,Àôll be given local anaesthetic drops to numb your eyes

a very fine needle is carefully guided into your eyeball and the injection is given

The injections are usually given once a month to begin with. Once your vision starts to stabilise, they'll be stopped or given less frequently.

Injecting steroid medication may sometimes be given instead of anti-VEGF injections, or if the anti-VEGF injections don't help. Risks and side effects
Eye surgery
Surgery may be carried out to remove some of the vitreous humour from the eye. This is the transparent, jelly-like substance that fills the space behind the lens of the eye.

The operation, known as vitreoretinal surgery, may be needed if:

a large amount of blood has collected in your eye
there's extensive scar tissue that's likely to cause, or has already caused, retinal detachment
During the procedure, the surgeon will make a small incision in your eye before removing some of the vitreous humour, removing any scar tissue and using a laser to prevent a further deterioration in your vision.

Vitreoretinal surgery is usually carried out under local anaesthetic and sedation. This means you will not experience any pain or have any awareness of the surgery being performed. After the procedure
You should be able to go home on the same day or the day after your surgery.

For the first few days, you may need to wear a patch over your eye. This is because activities such as reading and watching television can quickly tire your eye to begin with.

You will probably have blurred vision after the operation. This should improve gradually, although it may take several months for your vision to fully return to normal.

Your surgeon will advise you about any activities you should avoid during your recovery. Risks and side effects
Possible risks of vitreoretinal surgery include:

developing a cataract
further bleeding into the eye
retinal detachment
fluid build-up in the cornea (outer layer at the front of the eye)
infection in the eye
There's also a small chance that you will need further retinal surgery afterwards. Your surgeon will explain the risks to you. Blood sugar
If you check your blood sugar level at home, it should be 4 to 10mmol/l. The level can vary throughout the day, so try to check it at different times.

The check done at your GP surgery is a measure of your average blood sugar level over the past few weeks. You should know this number, as it is the most important measure of your diabetes control.

It's called HbA1c, and for most people with diabetes it should be around 48 mmol/l or 6.5%. Preventing diabetic retinopathy
Blood pressure
You

can ask for a blood pressure test at your GP surgery, or you can buy a blood pressure monitor to use at home. Blood pressure is measured in millimetres of mercury (mmHg) and is given as two figures.

If you have diabetes, you'll normally be advised to aim for a blood pressure reading of no more than 140/80mmHg, or less than 130/80mmHg if you have diabetes complications, such as eye damage. Healthy lifestyle Cholesterol Your cholesterol level can be measured with a simple blood test carried out at your GP surgery. The result is given in millimoles per litre of blood (mmol/l).

If you have diabetes, you'll normally be advised to aim for a total blood cholesterol level of no more than 4 mmol/l. Know your blood sugar, blood pressure and cholesterol levels Regular screening Even if you think your diabetes is well controlled, it's still important to attend your annual diabetic eye screening appointment, as this can detect signs of a problem before you notice anything is wrong.

The earlier that retinopathy is detected, the greater the chance of effectively treating it and stopping it getting worse.

You should also contact your optician immediately if you develop any problems with your eyes or vision, such as:

- gradually worsening vision
- sudden vision loss
- shapes floating in your field of vision (floaters)
- blurred vision
- eye pain or redness

These symptoms don't necessarily mean you have diabetic retinopathy, but it's important to get them checked out straight away. None None None None None Causes of type 1 diabetes Type 1 diabetes is an autoimmune condition, where the immune system (the body's natural defence against infection and illness) mistakes the cells in your pancreas as harmful and attacks them.

Without insulin, your body will break down its own fat and muscle, resulting in weight loss. This can lead to a serious short-term condition called diabetic ketoacidosis. This is when the bloodstream becomes acidic, you develop dangerous levels of ketones in your blood stream and become severely dehydrated.

This results in the body being unable to produce insulin, which is required to move glucose out of the blood and into your cells to be used for energy. This is called Type 1 diabetes. About type 1 diabetes Treating type 1 diabetes It's important that diabetes is diagnosed as early as possible. If left untreated, type-1 diabetes is a life-threatening condition. It's essential that treatment is started early.

Diabetes can't be cured, but treatment aims to keep your blood glucose levels as normal as possible and control your symptoms, to prevent health problems developing later in life.

If you're diagnosed with diabetes, you'll be referred to a diabetes care team for specialist treatment and monitoring.

As your body can't produce insulin, you'll need regular insulin injections to keep your glucose levels normal. You'll be taught how to do this and how to match the insulin you inject to the food (carbohydrate) you eat, taking into account your blood glucose level and how much exercise you do.

Insulin injections come in several different forms, with each working slightly differently. You'll most likely need a combination of different insulin preparations.

Insulin is given to some patients by a continuous infusion of fast (rapid) acting insulin (pump therapy). This is where a small device constantly pumps insulin (at a rate you control) into your bloodstream through a plastic tube (cannula) that's inserted under the skin with a needle.

There are alternatives to insulin injections and pumps, but they're only suitable for a small number of patients. They are:

islet cell transplantation , where healthy insulin-producing cells from the pancreas of a deceased donor are implanted into the pancreas of someone with type 1 diabetes
a complete pancreas transplant , this is still relatively rare and only a few centres of excellence offer this. Type 1 diabetes complications If diabetes is left untreated, it can cause a number of different health problems. Large amounts of glucose can damage blood vessels, nerves and organs.

Having a consistently raised glucose level that doesn't cause any symptoms can have damaging effects in the long term.

There are also complications that can arise if your insulin is not balanced with your food intake and exercise. Your diabetes team will work with you to manage your insulin correctly. Diabetes symptoms Living with diabetes If you have type 1 diabetes, you'll need to look after your health very carefully. Caring for your health will also make treating your diabetes easier and minimise your risk of developing complications.

For example, eating a healthy, balanced diet and exercising regularly will lower your blood glucose level. Stopping smoking (if you smoke) will also reduce your risk of developing cardiovascular disease.

Your healthcare team will discuss this with you, and you can see your own results through My Diabetes My Way. It's important that you learn the skills to self manage your diabetes and there are people to help and support you to do this.

If you have diabetes, your eyes are at risk from diabetic retinopathy, a condition that can lead to sight loss if it's not treated. Everyone with diabetes aged 12 or over should be invited to have their eyes screened once a year. None None None None None None Hyperglycaemia (high

blood glucose)As diabetes occurs as a result of your body being unable to produce any, or enough, insulin to regulate your blood glucose, your blood glucose levels may become very high. This happens because there,Äôs insufficient insulin to move glucose out of your bloodstream and into your cells to produce energy.

If your blood glucose levels become too high, you may experience hyperglycaemia. The symptoms of hyperglycaemia are similar to the main symptoms of diabetes, but they may come on suddenly and be more severe. They include:

extreme thirst
a dry mouth
blurred vision
drowsiness

a need to pass urine frequently

Left untreated or if you already have an infection, hyperglycaemia can lead to diabetic ketoacidosis. This is a life-threatening condition, where the body breaks down fat and muscle as an alternative source of energy. This leads to a build-up of acids in your blood, which can cause vomiting, dehydration, unconsciousness and even death.

Your healthcare team will teach you about looking out for these symptoms and how to manage your ,ÄòSick Day,Äò rules.Symptoms of type 1 diabetesNoneNoneWhen to seek urgent medical

attentionNoneNoneHypoglycaemia (low blood glucose)NoneNoneNoneNoneNoneNoneNoneNoneNoneNoneCauses of type 1 diabetesNoneNoneAutoimmune conditionNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNoneNone

NoneNoneDiagnosing type 1 diabetesNoneNoneUrine and blood testsNoneNoneGlycated haemoglobin (HbA1c)NoneNoneNoneNoneNoneNoneNoneNoneNone

NoneNoneTreating hypoglycaemia (low blood glucose)Hypoglycaemia can occur when your blood glucose level becomes very low. It,Äôs likely that you,Äòll develop hypoglycaemia from time to time.

Mild hypoglycaemia (or a ,Äúhypo,Äù) can make you feel shaky, weak and hungry, and can be controlled by eating or drinking something sugary, such as:

200ml pure fruit juice
5 to 7 Dextrose tablets
4 to 5 Glucotabs
60ml Glucojuice
5 jelly babies

You may also be able to take pure glucose, in the form of a tablet or fluid, if you need to control the symptoms of a hypo quickly.

If you develop severe hypoglycaemia, you can become drowsy and confused, and you may even lose consciousness. If this occurs, you,Äòll need assistance from another person who may be able to give you a glucose gel rubbed into your cheeks or an injection of glucagon into your muscle. Glucagon is a hormone that quickly increases your blood glucose levels.

Your diabetes care team may show several of your family members and close friends how to inject glucagon or give you glucose gel, should you need it.

Once you begin to come round, you'll need to eat something sugary when you're alert enough to do so. If you lose consciousness as a result of hypoglycaemia, there's a risk that it could happen again within a few hours. You'll need to rest afterwards and have someone with you to ensure that you eat some food to replace the glucose stores in your body.

If the glucagon injection into your muscle doesn't work, and you're still drowsy or unconscious 10 minutes after the injection, you'll need urgent medical attention.

You'll need to have an injection of dextrose straight into a vein, which must be given by a trained healthcare professional.

If you have type 1 diabetes, it's recommended that you carry identification with you so that people are aware of the problem if you become hypoglycaemic.

If significant hypoglycaemia is a regular problem or you have lost your awareness of hypoglycaemia your health care team may consider using a continuous glucose monitor (CGM). Treating type 1 diabetes
Islet cell transplantation
Some people with type 1 diabetes may benefit from a fairly new procedure known as islet cell transplantation. It involves implanting healthy islet cells from the pancreas of a deceased donor into the pancreas of someone with type 1 diabetes.

In 2008, a government-funded islet cell transplant programme was introduced, and the procedure is now available through the NHS for people who satisfy certain criteria (see below).

You may be suitable for an islet cell transplant if you've had:

two or more severe hypos within the last two years and you have a poor awareness of hypoglycaemia
a working kidney transplant, severe hypos and poor hypoglycaemia awareness, or poor blood glucose control even after receiving the best medical treatment

You may not be suitable for an islet cell transplant if you:

weigh over 85kg (13st 5.4lb)
have poor kidney function
need a lot of insulin, for example, over 50 units a day for a 70kg (11st) person

An islet cell transplant is a minor, low-risk procedure that's carried out under local anaesthetic.

The procedure has been shown to be effective at reducing the risk of severe hypos. So far, the results of islet cell transplants carried out in the UK have shown a significant reduction in the number of hypos, from 23 per person per year before transplantation to less than one per person per year afterwards.
Monitoring blood glucose
Pancreas transplant
People

with type 1 diabetes who are having a kidney transplant from a donor may also be offered a pancreas transplant at the same time.

Others may be offered a pancreas transplant after they've had a kidney transplant because they're already on anti-rejection tablets.

If you're having repeated, severe and life-threatening hypoglycaemic attacks, a pancreas transplant may also be recommended.

During the procedure, your faulty pancreas will be replaced with a healthy pancreas from a donor. This will allow you to get a new source of insulin.

Pancreas transplants are complicated operations and, like other types of major surgery, there's a risk of complications. In the UK, about 200 pancreas transplants are carried out each year, with more than 300 people on the waiting list.

The waiting time for a pancreas transplant is one to two years, because there's a shortage of suitable donor organs.

Having your blood glucose levels checked
Treating high blood glucose (hyperglycaemia)
Hyperglycaemia can occur when your blood glucose levels become too high. It can happen for several reasons, such as eating too much, being unwell or not taking enough insulin.

If you develop hyperglycaemia, you may need to adjust your diet or your insulin dose to keep your glucose levels normal. Your diabetes care team can advise you about the best way to do this.

If hyperglycaemia isn't treated, it can lead to a condition called diabetic ketoacidosis, where the body begins to break down fats for energy instead of glucose, resulting in a build-up of ketones (acids) in your blood.

Diabetic ketoacidosis is very serious and, if not addressed quickly, it can lead to unconsciousness and, eventually, death.

The signs of diabetic ketoacidosis include:

- frequently passing urine
- thirst
- tiredness and lethargy (lack of energy)
- blurry vision
- abdominal (stomach) pain
- nausea and vomiting
- deep breathing
- smell of ketones on breath (described as smelling like pear drops)
- collapse and unconsciousness

Read more about the symptoms of diabetic ketoacidosis

Your healthcare team will educate you on how to decrease your risk of ketoacidosis by testing your own blood for ketones using blood ketone sticks if you're unwell.

If you develop diabetic ketoacidosis, you'll need urgent hospital treatment. You'll be given insulin directly into a vein (intravenously). You may also need other fluids given by a drip if you're dehydrated, including salt solution and potassium. Other treatments

Care standards for diabetes

The aim of treating diabetes is to help people with the condition control their blood glucose levels and minimise the risk of developing future complications.

In Scotland there is a National Diabetes Improvement Plan produced by the Scottish Diabetes Group, patients and health care professionals.

The Diabetes National Service Framework has also been developed by diabetes clinical experts and patients with diabetes. Good diabetes care includes:

- access to information and appropriate support for people with type 1 diabetes, including access to a structured education programme
- an agreed care plan, helping all people with diabetes to manage their care and lead a healthy lifestyle , including a named contact for their care

- information, care and support to enable all people with diabetes to control their blood glucose, maintain an acceptable blood pressure and minimise other risk factors for developing complications

- access to services to identify and treat possible complications , such as screening for diabetic retinopathy (where high blood glucose levels damage the retina at the back of the eye) and specialised foot care
- effective care for all people with diabetes admitted to hospital, for whatever reason

The Diabetes UK website has more information about care from healthcare professionals. They highlight the 15 care essentials for patients with diabetes. NoneNone NoneNone

Retinopathy

Retinopathy is where the retina (the light-sensitive layer of tissue) at the back of the eye is damaged. Blood vessels in the retina can become blocked or leaky, or can grow haphazardly. This prevents the light from fully passing through to your retina. If it isn't treated, it can damage your vision.

The better you control your blood glucose levels, the lower your risk of developing serious eye problems. Having an annual eye check with a specialist (an ophthalmologist or optometrist) can help pick up signs of a potentially serious eye problem early so that it can be treated.

Treatment for diabetic retinopathy is only necessary if screening detects significant problems that mean your vision is at risk.

If the condition hasn't reached this stage, the advice on managing your diabetes, BP and cholesterol level is recommended.

The main treatments for more advanced diabetic retinopathy are:

- laser treatment

- injections of medication into your eyes

- an operation to remove blood or scar tissue from your eyes

Complications

of type 1 diabetes

Kidney disease

If the small blood vessels in your kidney become blocked and leaky, your kidneys will work less efficiently.

In rare, severe cases, this can lead to kidney failure and the need for dialysis (treatment to replicate the functions of the kidneys). In some cases, a kidney transplant may be necessary. Heart disease and stroke
Foot problems
Damage to the nerves of the foot can mean that small nicks and cuts aren't noticed, which can lead to a foot ulcer developing. About 1 in 10 people with diabetes get a foot ulcer, which can cause serious infection.

If you develop nerve damage, you should check your feet every day and report any changes to your doctor, nurse or podiatrist. Look out for sores and cuts that don't heal, puffiness or swelling, and skin that feels hot to the touch. You should also have a foot examination at least once a year. Nerve damage
Sexual dysfunction
In men with diabetes, particularly those who smoke, nerve and blood vessel damage can lead to erection problems. This can usually be treated with medication.

Women with diabetes may experience:

- a reduced sex drive (loss of libido)
- reduced pleasure from sex
- vaginal dryness
- a reduced ability to orgasm
- pain during sex

If you experience a lack of vaginal lubrication, or you find sex painful, you can use a vaginal lubricant or a water-based gel. Miscarriage and stillbirth
None
None
None
None
Diabetes sick day rules
If you need to take insulin to control your diabetes, you should have received instructions about looking after yourself when you're ill, known as your 'sick day rules'.

Contact your diabetes care team or GP for advice if you haven't received these.

The advice you're given will be specific to you, but some general measures that your sick day rules may include could be to:

- keep taking your insulin, it's very important not to stop treatment when you're ill; your treatment plan may state whether you need to temporarily increase your dose
- test your blood glucose level more often than usual, most people are advised to check the level at least four times a day
- keep yourself well hydrated, make sure you drink plenty of sugar-free drinks
- keep eating, eat solid food if you feel well enough to, or liquid carbohydrates such as milk, soup and yoghurt if this is easier
- check your ketone levels if your blood glucose level is high

Seek advice from your diabetes care team or GP if your blood glucose or ketone level remains high after taking insulin, if:

- you're not sure whether to make any changes to your treatment
- you develop symptoms of diabetic ketoacidosis

you have any other concernsLiving with type 1 diabetesPregnancyIf you have diabetes and you,Äre thinking about having a baby, it,Äs a good idea to discuss this with your diabetes care team.

A planned pregnancy enables you to make sure your blood glucose levels are as well controlled as possible before you get pregnant. Most women with diabetes have a healthy baby.

You,Äll need to keep your blood glucose under tight control, particularly before becoming pregnant and during the first eight weeks of pregnancy, to reduce the risk of the baby developing serious birth defects.

You should also take a higher dose of folic acid tablets. Folic acid helps prevent your baby developing spinal cord problems. Doctors now recommend that all women planning to have a baby take folic acid. Women with diabetes are advised to take 5mg a day until they,Äre 12 weeks pregnant (only available on prescription).

Folic acid should be taken alongside pregnancy multivitamins that include vitamin D. Insulin and metformin are safe to take during pregnancy. It,Äs important to review any other medications you take to ensure these are safe to take during pregnancy.

You should also have your eyes checked. Retinopathy (see above) affects the blood vessels in the eyes and is a risk for all people with diabetes. Pregnancy can place extra pressure on the small vessels in your eyes, so it,Äs important to treat retinopathy before you become pregnant.

Your GP or diabetes care team can give you further advice. Diabetes UK and JDRF also provide more useful information about pregnancy and diabetes to help you get your pregnancy off to a healthy start.Look after your feetEducationYou,Äll be best equipped to manage your diabetes if you,Äre given information and education when you,Äre diagnosed, and then on an ongoing basis.

The National Institute for Health and Care Excellence (NICE) strongly recommends that all people who have diabetes should be offered a structured patient education programme, providing information and education to help them care for themselves.

This gives people the best chance of developing the skills they need to effectively treat their condition, maintain their glucose levels at a normal level and help prevent long-term complications. It also reduces the risk of developing hypoglycaemia (low blood glucose levels). Regular eye testsStructured patient educationStructured patient education means there,Äs a planned course that:

covers all aspects of diabetes
is flexible in content
is relevant to a person,Äs clinical and psychological needs
is adaptable to a person,Äs educational and cultural background
There are also several local adult education programmes, many of which are working towards the criteria for structured education. Ask your

diabetes care team about the adult education programmes they provide. Diabetes and your child Help and support Many people find it helpful to talk to others in a similar position, and you may find support from a group for people with diabetes. Patient organisations have local groups where you can meet others who, have been diagnosed with the condition.

The Diabetes UK website enables you to find your local diabetes support group. If you want to contact a trained counsellor directly, you can phone Diabetes UK, care line on 0345 123 2399, or email careline@diabetes.org.uk

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The Juvenile Diabetes Research Foundation (JDRF) also holds regular local events. Financial support and benefits Some people with diabetes may be eligible to receive disability benefits and incapacity benefits, depending on the impact the condition has on their life.

The main groups likely to qualify for welfare benefits are children, elderly people, people with learning disabilities or mental health problems, and those with complications of diabetes.

People over 65 who are severely disabled, may qualify for a type of disability benefit called Attendance Allowance.

Carers may also be entitled to some benefit too, depending on their involvement in caring for the person with diabetes.

Staff at your local Citizen's Advice Bureau (CAB) can check whether you, are getting all of the benefits you, are entitled to. Both they and your diabetes specialist nurse should also be able to give you advice about filling in the forms.

GOV.uk has more information about benefits, and the Diabetes UK website has further advice about the Disability Living Allowance (DLA).

Driving with diabetes It, is a common myth that people with diabetes aren, allowed to drive anymore. Although there are some restrictions on drivers with diabetes, it, is not as severe as you may think.

You should always tell your insurer that you are diabetic as this may affect your insurance claim. Only individuals who use insulin have to tell the DVLA that they have diabetes. A high majority of individuals who use insulin can carry on driving on a restricted licence. This usually has to be renewed every 3 years.

Additional restrictions may apply for different licences (e.g Group 2 HGV) so always refer to the DVLA guidelines.

Unfortunately, some individuals do lose their driving license, most commonly due to experiencing severe hypos or being unable to recognise symptoms of a hypo (hypo unawareness).

To prevent hypos whilst driving you should

check your blood glucose levels before driving
keep medication close by in the car
take regular breaks on long journeys over 2 hours
avoid missing meals

Treating type 2 diabetes

Type 2 diabetes is treated with changes in your diet and depending on the response of your blood glucose levels, sometimes tablets and insulin. Early in the course of type 2 diabetes, planned weight loss can even reverse the disease.

About type 2 diabetes

Complications of type 2 diabetes

Diabetes can cause serious long-term health problems. It's the most common cause of vision loss and blindness in people of working age.

Everyone with diabetes aged 12 or over should be invited to have their eyes screened once a year for diabetic retinopathy.

Diabetes is also responsible for most cases of kidney failure and lower limb amputation, other than accidents.

Symptoms of diabetes

Preventing type 2 diabetes

If you're at risk of type 2 diabetes, you may be able to prevent it developing by making lifestyle changes.

These include:

losing weight if you're overweight, and maintaining a healthy weight
eating a healthy, balanced diet
stopping smoking if you smoke
drinking alcohol in moderation
taking plenty of regular exercise

Causes of type 2 diabetes

Living with type 2 diabetes

If you already have type 2 diabetes, it may be possible to control your symptoms by making the above changes. This also minimises your risk of developing complications.

NoneNoneNone NoneNone NoneNone

NoneNoneSymptoms of type 2 diabetes

NoneNoneHyperglycaemiaNoneNoneNoneNoneNoneNoneNone NoneNone

NoneNoneGenetics

Genetics is one of the main risk factors for type 2 diabetes. Your risk of developing the condition is increased if you have a close relative such as a parent, brother or sister who has the condition.

The closer the relative, the greater the risk. A child who has a parent with type 2 diabetes has about a one in three chance of also developing the condition.

Causes of type 2 diabetes

Being overweight or obese

You're more likely to develop type 2 diabetes if you're overweight or obese with a body mass index (BMI) of 30 or more.

Fat around your tummy (abdomen) particularly increases your risk. This is because it releases chemicals that can upset the body's cardiovascular and metabolic systems.

This increases your risk of developing a number of serious conditions, including coronary heart disease, stroke and some types of cancer.

Measuring your waist is a quick way of assessing your diabetes risk. This is a measure of abdominal obesity, which is a particularly high-risk form of obesity.

Women have a higher risk of developing type 2 diabetes if their waist measures 80cm (31.5 inches) or more.

Asian men with a waist size of 89cm (35 inches) or more have a higher risk, as do white or black men with a waist size of 94cm (37 inches) or more.

Exercising regularly and reducing your body weight by about 5% could reduce your risk of getting diabetes by more than 50%. Risk factors for type 2 diabetes

Ethnicity People of south Asian, Chinese, African-Caribbean and black African origin are more likely to develop type 2 diabetes.

Type 2 diabetes is up to six times more common in south Asian communities than in the general UK population, and it's three times more common among people of African and African-Caribbean origin.

People of south Asian and African-Caribbean origin also have an increased risk of developing complications of type 2 diabetes, such as heart disease, at a younger age than the rest of the population.

Age Other risks Your risk of developing type 2 diabetes is also increased if your blood glucose level is higher than normal, but not yet high enough to be diagnosed with diabetes.

This is sometimes called pre-diabetes, and doctors sometimes call it impaired fasting glycaemia (IFG) or impaired glucose tolerance (IGT). Pre-diabetes is reversible if you lose weight. Discuss your options with your GP.

Pre-diabetes can progress to type 2 diabetes if you don't take preventative steps, such as making lifestyle changes. These include eating healthily, losing weight if you're overweight, and taking plenty of regular exercise.

Women who have had gestational diabetes during pregnancy also have a greater risk of developing diabetes in later life.

NoneNoneNone NoneNone

SGLT2 inhibitors SGLT2 inhibitors work by increasing the amount of glucose excreted in urine. They're particularly useful in people with type 2 diabetes and who have cardiac disease.

The three SGLT2 inhibitors that may be prescribed include:

dapagliflozin

canagliflozin

empagliflozin

Each medication is taken as a tablet once a day. The main side effect is a higher risk of genital and urinary tract infections.

If you're unwell and have a dehydrating illness (e.g. fever, vomiting or diarrhoea), it's important you stop these medications. Get your glucose and ketone level checked by your healthcare professional to prevent diabetic ketoacidosis developing.

Treating type 2 diabetes GLP-1 agonists GLP-1 agonists acts in a similar way to the natural hormone GLP-1 (see the section on gliptins, below).

They,Âre given by injection and boost your own insulin production when there are high blood glucose levels, reducing blood glucose without the risk of hypoglycaemia episodes (,Âhypos,Â). They,Âre also particularly useful for people with type 2 diabetes and cardiac disease. Medicines for type 2 diabetes Sulphonylureas Sulphonylureas increase the amount of insulin that,Âs produced by your pancreas.

Examples include:

glibenclamide

gliclazide

glimepiride

glipizide

gliquidone

You may be prescribed one of these medicines if you can,Ât take metformin.

Alternatively, you may be prescribed sulphonylurea and metformin if metformin doesn,Ât control blood glucose on its own.

Sulphonylureas can increase the risk of hypoglycaemia (low blood glucose) because they increase the amount of insulin in your body. They can sometimes cause side effects, including weight gain, nausea and diarrhoea. Metformin Pioglitazone Pioglitazone is a type of thiazolidinedione medicine (TZD), which make your body,Âs cells more sensitive to insulin so more glucose is taken from your blood.

It,Âs usually used in combination with other oral diabetes medication. It may cause weight gain and ankle swelling (oedema).

You shouldn,Ât take pioglitazone if you have heart failure or a high risk of bone fracture. Gliptins (DPP-4 inhibitors) Insulin treatment If glucose-lowering tablets aren,Ât effective in controlling your blood glucose levels, you may need to have insulin treatment.

This can be taken instead of or alongside your tablets, depending on the dose and the way you take it.

Insulin comes in several different preparations, and each works slightly differently. Your treatment may include a combination of these different insulin preparations. Insulin injections Insulin must be injected because it would be broken down in your stomach like food and unable to enter your bloodstream if it were taken as a tablet.

If you need to inject insulin, your diabetes care team will advise you about when you need to do it.

They will show you how to inject it yourself, and will also give you advice about storing your insulin and disposing of your needles properly.

Insulin injections are given using either a syringe or an injection pen, also called an insulin pen (auto-injector). Most people need between two and four injections of insulin a day.

Your GP practice or diabetes nurse will also teach a relative or a close friend how to inject the insulin properly.

Treatment for low blood glucose (hypoglycaemia) If you have type 2 diabetes that's controlled using insulin or certain types of tablets (e.g. sulfonylurea), you may experience episodes of hypoglycaemia.

Hypoglycaemia is where your blood glucose levels become very low.

Mild hypoglycaemia (a 'hypo') can make you feel shaky, weak and hungry, but it can usually be controlled by eating or drinking something sugary.

If you have a hypo, you should initially have a form of carbohydrate that will act quickly, such as a sugary drink or glucose tablets.

This should be followed by a longer-acting carbohydrate, such as a cereal bar, sandwich or piece of fruit.

In most cases, these measures will be enough to raise your blood glucose level to normal. You should aim for a hypo to be treated and to recheck your blood glucose level within 15 minutes.

If blood glucose still less than 4mmol/l then repeat the treatment using a fast acting carbohydrate. When your blood glucose returns to normal then have your longer acting carbohydrate.

If you develop severe hypoglycaemia, you may become drowsy and confused, and you may even lose consciousness.

If this occurs, you may need to have an injection of glucagon into your muscle or glucose into a vein. Glucagon is a hormone that quickly increases your blood glucose levels.

You may require input from a health care professional. If the glucagon is not successful, you may require an injection of dextrose into your vein.

Your diabetes care team can advise you on how to avoid a hypo and what to do if you have one. Diabetic retinopathy Diabetic retinopathy is when the retina, the light-sensitive layer of tissue at the back of the eye, becomes damaged.

Blood vessels in the retina can become blocked or leaky, or can grow haphazardly. This prevents light fully passing through to your retina. If it isn't treated, it can damage your vision.

Annual eye checks are usually organised by a regional photographic unit. If significant damage is detected, you may be referred to a doctor who specialises in treating eye conditions (ophthalmologist) such as cataract and glaucoma.

The better you control your blood glucose levels, the lower your risk of developing serious eye problems.

Treatment for diabetic retinopathy is only necessary if screening detects significant problems that mean your vision is at risk.

If the condition hasn't reached this stage, the advice on managing your diabetes, BP and cholesterol level is recommended.

The main treatments for more advanced diabetic retinopathy are:

- laser treatment

- injections of medication into your eyes

- an operation to remove blood or scar tissue from your eyes

Complications of type 2 diabetes

Kidney disease

If the small blood vessels of your kidney become blocked and leaky, your kidneys will work less efficiently.

It's usually associated with high blood pressure, and treating this is a key part of management.

In rare, severe cases, kidney disease can lead to kidney failure. This can mean a kidney replacement, treatment with dialysis or sometimes kidney transplantation becomes necessary.

Heart disease and stroke

Foot problems

Damage to the nerves of the foot can mean small nicks and cuts aren't noticed and this, in combination with poor circulation, can lead to a foot ulcer.

About 1 in 10 people with diabetes get a foot ulcer, which can cause a serious infection.

If you have diabetes, look out for sores and cuts that don't heal, puffiness or swelling, and skin that feels hot to the touch. You should also have your feet examined at least once a year.

If poor circulation or nerve damage is detected, check your feet every day and report any changes to your doctor, nurse or podiatrist.

Nerve damage

Sexual dysfunction

In men with diabetes, particularly those who smoke, nerve and blood vessel damage can lead to erection problems. This can usually be treated with medication.

Women with diabetes may experience:

- a reduced sex drive (loss of libido)

- less pleasure from sex

- vaginal dryness

- less ability to orgasm

- pain during sex

If you experience a lack of vaginal lubrication or find sex painful, you can use a vaginal lubricant or a water-based gel.

Miscarriage and stillbirth

Looking after your eyes

The NHS diabetic eye screening programme will arrange for you to have your eyes checked every year.

Everyone who is on a diabetes register will be given the opportunity to have a digital picture taken of the back of their eye. Speak to your GP to register.

None None None None

Pregnancy

If you have diabetes and you're thinking about having a baby, it's a good idea to discuss this with your diabetes care team.

If you're taking oral medications to manage your diabetes, this may need to change before you are pregnant. It's important that you plan your pregnancy and discuss it with your diabetes team.

Planning your pregnancy means you can ensure your blood glucose levels are as well controlled as they can be before you get pregnant.

You'll need to tightly control your blood glucose level, particularly before becoming pregnant and during the first eight weeks of your baby's development, to reduce the risk of birth defects.

You should also:

check your medications, some tablets used to treat type 2 diabetes may harm your baby, so you may have to switch to insulin injections, stop statin medication or some blood pressure medications
take a higher dose of folic acid tablets, folic acid helps prevent your baby developing spinal cord problems, and it's recommended all women planning to have a baby take folic acid; women with diabetes are advised to take 5mg each day (only available on prescription) along with pregnancy multivitamins that include vitamin D
have your eyes checked, retinopathy, which affects the blood vessels in the eyes, is a risk for all people with diabetes; as pregnancy can place extra pressure on the small vessels in your eyes, it's important to treat retinopathy before you become pregnant
Your GP or diabetes care team can give you further advice. Living with type 2 diabetes
Diabetes education
You'll be best equipped to manage your diabetes day-to-day if you're given information and education when you're diagnosed and on an ongoing basis.

The National Institute for Health and Care Excellence (NICE) recommends that all people who have diabetes should be offered a structured patient education programme, providing information and education to help them care for themselves. Look after your feet
Structured patient education
Structured patient education means there's a planned course that:

covers all aspects of diabetes
is flexible in content
is relevant to a person's clinical and psychological needs
is adaptable to a person's educational and cultural background
For type 2 diabetes, there are several local adult education programmes, many of which are working towards the criteria for structured education.

Ask your diabetes care team about the adult education programmes they provide. Regular eye tests
Talk to others
Many people find it helpful to talk to others in a similar position, and you may find support from a group for people with diabetes.

Patient organisations have local groups where you can meet others diagnosed with the condition. To find your local diabetes support group, visit Diabetes UK.

If you want to get in touch with a trained counsellor directly, you can call the Diabetes UK Helpline on 0345 123 2399 (Monday to Friday, 9am to 7pm) or email

helpline@diabetes.org.uk Financial support and benefits Driving with diabetes It's a common myth that people with diabetes aren't allowed to drive anymore. Although there are some restrictions on drivers with diabetes, it's not as severe as you may think.

You should always tell your insurer that you have diabetes as this may affect your insurance claim. Only individuals who use insulin have to tell the DVLA that they have diabetes. A high majority of individuals who use insulin can carry on driving on a restricted licence. This usually has to be renewed every 3 years.

Additional restrictions may apply for different licences (e.g Group 2 HGV) so always refer to the DVLA guidelines.

Unfortunately, some individuals do lose their driving license, most commonly due to experiencing severe hypos.

If you start to have a hypo whilst driving you should:

Pull over safely

Switch off your car engine

Take fast-acting carbs, like glucose tablets or sweets, and some longer-acting carbohydrates too, like plain biscuits or crackers

Don't drive until 45 minutes after your blood sugar level has gone back to 5mmol/l or above Diabetes sick day rules If you need to take insulin to control your diabetes, you should have received instructions about looking after yourself when you're ill, known as your 'sick day rules'.

Contact your diabetes care team or GP for advice if you haven't received these.

The advice you're given will be specific to you, but some general measures that your sick day rules may include could be to:

keep taking your insulin, it's very important not to stop treatment when you're ill; your treatment plan may state whether you need to temporarily increase your dose

test your blood glucose level more often than usual, most people are advised to check the level at least four times a day

keep yourself well hydrated, make sure you drink plenty of sugar-free drinks

keep eating, eat solid food if you feel well enough to, or liquid carbohydrates such as milk, soup and yoghurt if this is easier

check your ketone levels if your blood glucose level is high

Seek advice from your diabetes care team or GP if your blood glucose or ketone level remains high after taking insulin, if:

you're not sure whether to make any changes to your treatment
you develop symptoms of diabetic ketoacidosis

damage your pancreas has. And you may benefit from more regular reviews by your healthcare team.

You,Äre likely to start on metformin to help manage your blood sugar levels. Metformin works by helping the insulin you produce to work better. This should then reduce your blood sugar levels.

But if this isn,Ät enough to manage your blood sugar and you,Äre losing weight then you,Äll move on to insulin. Many people with type 3c diabetes require insulin at an earlier stage compared to people with type 2 diabetes to help manage their blood sugar levels. But if metformin is working for you, then you should have a check every six months to see if you need to move on to insulin with your healthcare team. Conditions related to type 3cOther treatmentst's likely that your healthcare team will also discuss with you any diet and lifestyle change you might need to make. This might include treatment to help with digesting food.Symptoms of type 3c diabetesWhat is type 3 diabetes?The term type 3 diabetes has been used unofficially to describe diabetes that affects people with Alzheimer's, and is not the same as type 3c which is caused by damage to the pancreas. We're currently funding a research project that looks into the link between Alzheimer's and type 2 diabetes. This should provide more insight into why people with type 2 diabetes are more likely to develop Alzheimer's.

NoneNoneNone NoneNone NoneNone Diagnosing cystic fibrosis diabetesCystic fibrosis diabetes can be diagnosed through continuous glucose monitoring (CGM) or an oral glucose tolerance test (OGTT).

We understand that coming to terms with having the condition can feel overwhelming, especially as you,Äre already living with cystic fibrosis. But getting diagnosed will help you get the treatment and advice you need, so that you can find ways to manage your blood sugar levels and live well with the condition. What is cystic fibrosis? Treating cystic fibrosis diabetesThere are a number of treatments available to help you manage cystic fibrosis diabetes.

Diet

If you are diagnosed with cystic fibrosis diabetes, you will receive dietary advice from a specialist cystic fibrosis dietitian. They will be able to look at your diet and tailor their advice to you.

Often, people with cystic fibrosis diabetes need to continue to eat their usual high-calorie, high-protein and high-fat diet.

It,Äs important to recognise that this dietary advice is different to the advice usually given to people with type 1 or type 2 diabetes. This is because it may be difficult to maintain a healthy weight when you have cystic fibrosis, as you,Äre using up a lot of energy to fight infections or keep your lungs functioning.

If you are on cystic fibrosis transmembrane conductance regulator (CFTR) modulators as part of your treatment for cystic fibrosis, you may experience weight gain. This means you may need to make some changes to your diet to maintain a healthy weight.

Insulin

Insulin injections are a common treatment option for people with cystic fibrosis diabetes. We've got more information about insulin and how it works, including tips on injecting it safely.

Physical activity

Being active has many health benefits if you have cystic fibrosis diabetes, and so you may find it useful to introduce some form of physical activity into your lifestyle.

We've got more information about the benefits and types of exercise you may want to try. Your physio in your cystic fibrosis team will also be able to chat to you more about this and advise on the right exercise for you.

What causes cystic fibrosis diabetes? Cystic fibrosis diabetes complications

Having diabetes can mean you're at risk of developing complications, such as eye problems (retinopathy) and nerve damage (neuropathy). But there are steps you can take to prevent them.

These include keeping your blood sugar, blood pressure and blood fats within your target range. Your healthcare team will discuss your targets with you.

Some people with cystic fibrosis diabetes may also be eligible for a FreeStyle Libre flash glucose monitor on prescription from the NHS. If you live in England and are having insulin treatment for your condition, speak to your cystic fibrosis team for more information.

You should also go to your annual diabetes health checks. We have lots more information about what they include.

Signs and symptoms of cystic fibrosis diabetes

Where to find support

Learning how to live with cystic fibrosis diabetes can be challenging, but we want you to know that there's lots of support available to help you through this time.

The Cystic Fibrosis Trust provide lots of specialised support for people with the condition through their fact sheet, website and helpline.

And we're here for you too. We've got information about looking after your emotional wellbeing that you might find useful. Or you can give our confidential helpline a call to talk through how you're feeling.

NoneNoneNone NoneNone NoneNone