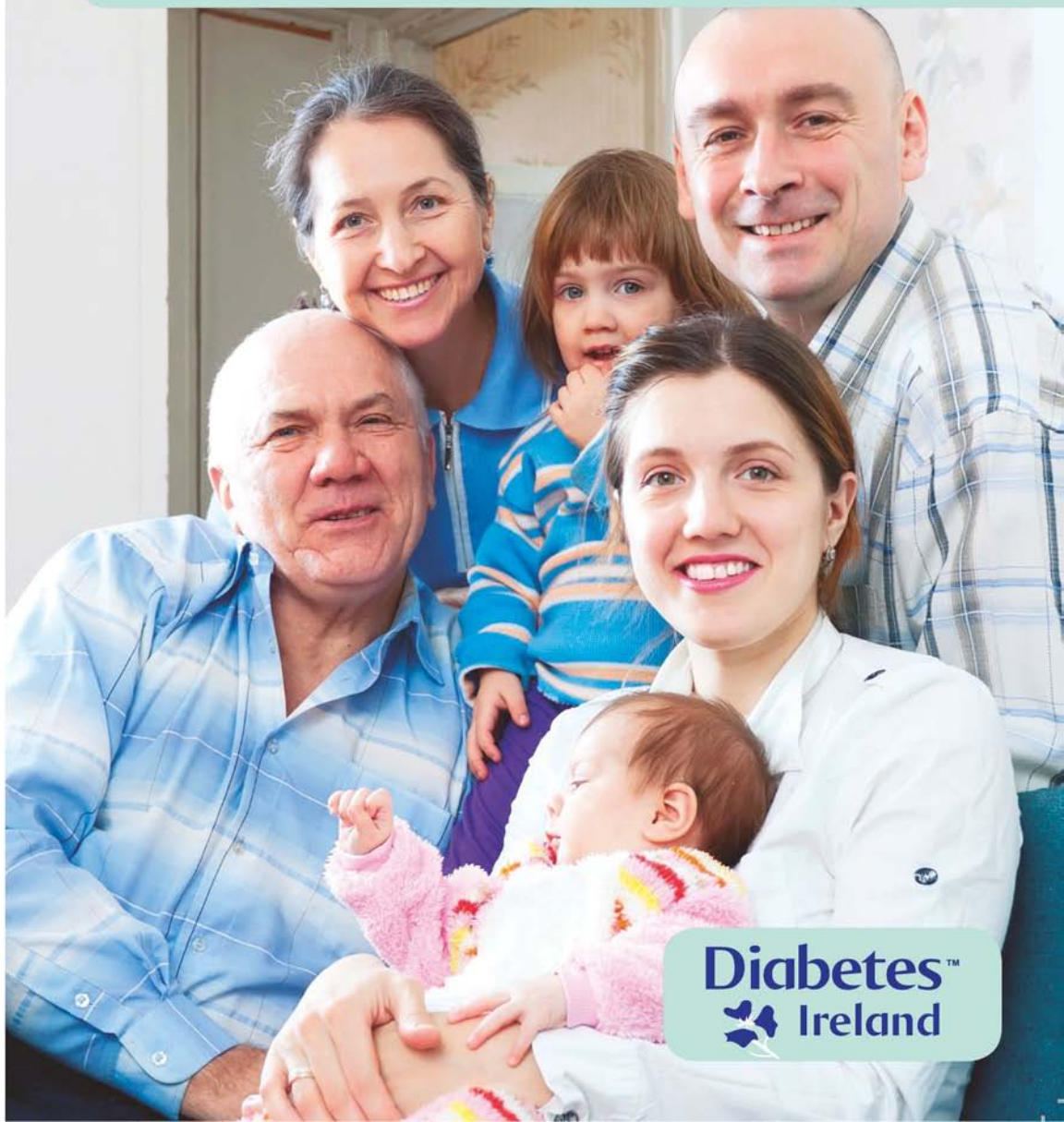


Living well with Type 2 Diabetes



Diabetes™
 **Ireland**



Introduction

Diabetes is a lifelong condition that can be managed well by following a healthy lifestyle, taking medication and with support and education from your diabetes healthcare team. It is different from other medical conditions in that **YOU** the person with diabetes need to take an active role in managing your condition.

This booklet contains a lot of information to hopefully get you started on the right path to managing your Type 2 diabetes well. It can be a guide and/or reference book for you in addition to the advice and information that you have received from your diabetes healthcare team. For your convenience the booklet has been divided into two sections, the first section is the main information that is needed for people who are newly diagnosed with Type 2 diabetes. The second section is further information about the ongoing management of Type 2 diabetes on a daily basis. You can dip in and out of different sections of the booklet as they apply to you and it will hopefully answer any questions that you may have.

If you have any further questions, you can telephone your healthcare team or **Diabetes Ireland** on **1850 909 909** or **01 842 8118**.

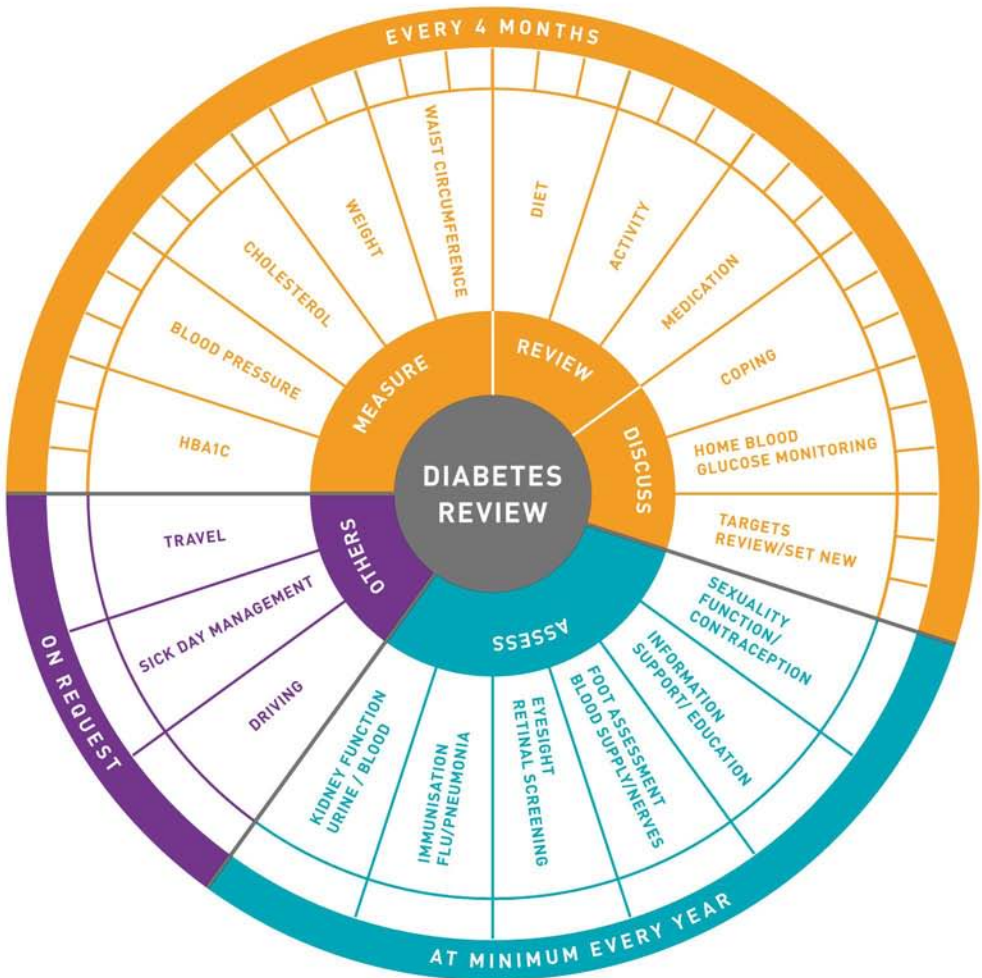
The design and printing of this booklet has been supported by an educational grant from the followings companies:





Your Diabetes Checklist

As well as managing your diabetes at home you should have check-ups to review your diabetes with your GP or with the diabetes team in the hospital. It is also important that everyone with diabetes has certain health checks regularly, e.g. eye & foot checks. Look at the centre point of the wheel below. Moving out from the centre, we advise you to measure, review, assess and discuss various factors with your healthcare team and we suggest a time line for you to have these checks.





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What is Diabetes?

Diabetes is a life-long condition where the amount of glucose (sugar) in the blood is too high. This happens when the body cannot use glucose properly due to a lack of insulin or not enough working insulin. Insulin is a hormone that acts like a key to open the doors of your cells to let glucose in. If glucose cannot get into the cells where it is needed for energy it builds up in the bloodstream. Overtime this excess glucose can cause damage to blood vessels.

There are different types of diabetes:

Type 1 diabetes occurs when the body completely stops producing insulin. Type 1 diabetes develops most frequently in young people and is not preventable at present. Type 1 diabetes is managed with insulin injections or by using an insulin pump, along with healthy eating and regular physical activity.

Type 2 diabetes occurs when the body stops producing enough insulin, or the produced insulin does not work properly (insulin resistance). Type 2 diabetes is managed by healthy eating, regular physical activity and medication which may include insulin injections.

Pre-diabetes occurs when blood glucose levels are higher than normal but not high enough to be Type 2 diabetes. Healthy eating and regular physical activity can help to delay Type 2 diabetes. A person with pre-diabetes should have annual blood tests to check for Type 2 diabetes.

Gestational diabetes is when diabetes occurs during pregnancy. Gestational diabetes usually only lasts for the pregnancy but the mother has an increased risk of developing Type 2 diabetes in the future. A woman who has had gestational diabetes should have yearly blood tests to check for Type 2 diabetes. To reduce the risk of Type 2 diabetes one should follow a healthy diet, exercise regularly and avoid weight gain.



Who is in your Diabetes Team?

YOU, the person with diabetes are the most vital member of the team.

General Practitioner (GP): Your GP will play a central role in monitoring your diabetes and prescribing treatment.

Practice Nurse: These nurses are based in your local GP surgery and will provide your diabetes care. This includes taking regular blood tests, monitoring blood pressure, reviewing your home blood glucose test results, doing a foot assessment and providing general diabetes education.

Diabetes Nurse Specialist: These nurses have expertise in diabetes management and you may be invited to see them for a review of your diabetes management. They may visit your GP surgery and provide diabetes clinics from time to time. They also work in diabetes clinics in the hospital setting.

Dietitian: A dietitian can work with you to assess your diet and advise on healthy eating to help manage your diabetes. They can be based in the community or the hospital or you may have access through attending a diabetes structured education programme e.g CODE, DESMOND or X-PERT.

Podiatrist: Podiatrists diagnose and treat foot problems. They can also carry out a foot assessment and advise you about footwear. You may be referred to one by your GP or practice nurse or if you are concerned about a potential foot problem you can arrange a private appointment yourself.

Ophthalmologists are doctors with specialist training in conditions that affect the eye. If a problem is identified during routine eye screening (diabetic retina screen) you may be referred to an ophthalmologist for further assessment and treatment.

Pharmacists dispense medications that are prescribed by your GP. They can advise on how to take your medications and inform you of the common side effects. They may also give you general health promotion information and advice.

Diabetes Endocrinologist/Diabetologist: A consultant who specialises in diabetes. Your GP may refer you to the diabetes clinic in the hospital where you will be under the care of this consultant.

Counsellor/Psychologist may help you to cope with the impact that diabetes has on your life. If necessary your GP can refer you.



Cycle of Care

An increase in Type 2 diabetes in recent years has led to changes in the way that diabetes care is delivered. In October 2015, the **Cycle of Care Initiative** was introduced which entitles people with Type 2 diabetes who have a medical card or GP visit card to have a full structured review of their diabetes by their GP/practice nurse twice a year. This approach allows people with Type 2 diabetes to have their condition managed in the community by their own GP and practice nurse with support from health professionals working in the community (diabetes nurse specialists, dietitians and podiatrists). It does not exclude people from attending the diabetes clinic in the hospital when necessary. This approach ensures continuity of care for you and frees up hospital resources to deal with more complex cases.



Type 2 Diabetes Risk Factors

The following are some things that increase the risk of Type 2 diabetes developing:

- Type 2 diabetes may be in the family
- As one gets older the body may not produce insulin as efficiently as it once did
- Being overweight
- Not taking enough regular physical activity
- Having had gestational diabetes or a baby weighing over 4.1kgs (10lbs)
- Having to take steroids (steroids cause insulin resistance)
- Having high blood pressure or high cholesterol (often conditions that accompany Type 2 diabetes).

Sometimes there is no obvious reason why people get Type 2 diabetes.



Family

Having a family history of Type 2 diabetes increases a person's risk of developing the condition, so you should encourage your family (siblings and adult children) to get checked for diabetes with their GP. They can reduce the chances of developing Type 2 diabetes by adopting a healthy lifestyle i.e. healthy eating, regular physical activity and maintaining a weight that is appropriate for their height.

Signs and Symptoms of Diabetes

Before you were diagnosed with diabetes you may have experienced some of the following signs and symptoms:

- Always being thirsty or having a dry mouth
- Needing to pass urine very frequently (even during the night)
- Feeling tired all the time
- Having frequent infections
- Slow healing sores or cuts
- Genital irritation or thrush
- Blurred vision
- Unexplained weight loss
- Numbness, pain or tingling in hands or feet (often worse at night).



If you have diabetes and you still experience the above signs and symptoms you should contact your GP. Your blood glucose levels may be high and your treatment for diabetes (medications) may need to be adjusted.



Recently Diagnosed with Diabetes

If you have been recently diagnosed with Type 2 diabetes it may be an opportunity for you to lead a healthier lifestyle. You may also be feeling a range of emotions. Some common emotions and reactions are:

- A feeling of loss - "life will never be the same again"
- Anger - "Why me?"
- Disbelief or feeling devastated - "but I did nothing wrong"
- Fear - "am I going to go blind?"
- Shock - "This can't be happening to me"
- Stress - "I won't be able to manage this"
- Guilt - "I should have watched my weight"
- Denial - "I can't accept I have diabetes."

All these feelings are normal. Talking about how you are feeling may be enough to help you feel better. Talk to your family, friends, GP or nurse about how you are feeling and they will help provide the support you need.

Counselling Service

If you are finding it difficult to cope with your diagnosis of diabetes or are feeling depressed or anxious your GP may refer you to Counselling Services in Primary Care (CIPC).

Diabetes Ireland also provides a full counselling service.

For queries or to make an appointment please call

01 - 842 8118 or **1850 909 909**
or email carecentre@diabetes.ie

All enquiries will be dealt with in confidence.





Diabetes Self Management

Many things you do on a daily basis will affect your blood glucose levels, so it is very important that you take an active part in the management of your diabetes. Before you developed diabetes your pancreas kept your blood glucose levels within the normal range by producing the right amount of insulin at the right time. Now, **YOU** must help your body do what it once did automatically.

This includes:

- Eating a healthy diet
- Doing regular physical activity
- Aiming for a healthy weight
- Taking medication if prescribed
- Checking your blood glucose levels if advised to do so



Change isn't easy but you will not be alone. Your diabetes care team will support and guide you to maintain the best possible blood glucose control.

It takes time to learn new behaviours, to understand them, practice them and turn them into new habits.

Remember, **YOU are the most important person in managing YOUR diabetes.**



Healthy Eating for Type 2 Diabetes

The following healthy eating guidelines are recommended by the Department of Health. When you have Type 2 diabetes no special foods or complicated diets are needed. Healthy eating guidelines include:

- Eating regular meals
- Include a starchy carbohydrate food such as bread, cereal, potato, rice or pasta at each meal
- Be aware of portion sizes
- Aim to include 5 - 7 portions of a mix of vegetables, salad and fruit a day.
- Have oily fish twice a week
- Reduce your fat intake especially saturated fat
- Keep sweet and sugary foods as occasional treats only
- Reduce your salt intake
- If you drink alcohol, ensure to drink in moderation.



Eat Regular Meals

Meals should be eaten at regular times each day e.g. breakfast, lunch and dinner. Snacking is usually not necessary but if you are hungry in between meals then a low fat snack is a good choice e.g. a portion of fruit or a diet yogurt.

Carbohydrates

This food group has the largest effect on blood glucose levels because when they are digested carbohydrates are broken down into glucose (sugar). Carbohydrates consist of sugars and starches and are an important energy source for the body and brain. With diabetes it is important to choose both the right amount and type of carbohydrates to help control blood glucose levels.

The following foods are sources of carbohydrates:

Starchy Carbohydrates

- All types of breads, wraps and crackers
- Potatoes
- Cereals and Oats
- Pasta / Rice / Noodles
Yam/Plantain

Sugary Carbohydrates

- All sweet foods (cakes, chocolate, biscuits, jams, marmalades, non-diet fizzy drinks etc.)

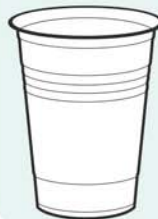
Naturally Occurring Sugars

- Fruit and fruit juices
- Pulse vegetables (peas, beans, lentils)
- Dairy food (milk, yogurt)

It is a good idea to include starchy foods with each meal but portion size is important. Choosing similar portions of carbohydrate at each meal can help control your blood glucose levels. The healthiest kind of starchy foods are those that are high in fibre e.g. wholegrain bread, wholegrain cereals, whole wheat pasta and brown rice. An average adult needs 3 - 5 servings daily. The number of servings depends on age, size, activity levels and if you are male or female.

A single serving is:

- 2 thin slices of wholegrain bread or 1 pitta pocket
- 2 crackers or crispbreads
- 2 Weetabix or oat biscuit cereal
- Half cup of unsweetened muesli
- One third cup of uncooked porridge oats
- One cup of high fibre flake type cereal
- 2 medium or 4 small potatoes
- One cup of cooked pasta, rice or noodles



Use a 200ml disposable plastic cup as a guide to serving size.

If you are overweight, you may need to reduce the number of carbohydrates you have per day! Speak to your diabetes team for more advice.

Portion sizes

Pay attention to the amount of food on your plate and consider using a smaller plate.

Vegetables, Salad and Fruit – have a mix of 5 - 7 servings a day.

As fruit contains natural sugar, allow intervals between eating it during the day. Salad and vegetables are low in natural sugar, therefore try and have some at every meal.

A portion is:

- 1 medium sized apple or pear or similar sized fruit
- 1 small banana
- 10 grapes or 6 strawberries
- 2 small fruits – 2 kiwis/2 mandarins/2 plums
- Half a cup of cooked vegetables- fresh or frozen
- A small glass (150mls) of unsweetened fruit juice, which if taken should be part of a meal
- A bowl of homemade vegetable soup
- A bowl of salad – lettuce/tomato/cucumber etc
- A small smoothie (150mls) made from only fruit and/or vegetables which if taken should be part of a meal.

Have oily fish twice weekly

Oily fish is rich in omega 3 fat that lowers the risk of heart disease. It reduces inflammation and helps lower cholesterol. It is recommended that people with Type 2 diabetes eat oily fish twice weekly. Oily fish includes salmon, sardines, kippers, mackerel, herring and trout.

Reduce your fat especially saturated fat

Having Type 2 diabetes increases the risk of heart disease but eating less fat in the diet can help reduce that risk. As well as eating less fat overall, it is important to eat the right types of fat.

Types of fat in our diet

Saturated fat is the fat in our diet that can raise cholesterol and increase the risk of a heart attack and stroke. **Unsaturated fat** in our diet may help to lower bad blood cholesterol. Unsaturated fat comes in two forms - **monounsaturated** and **polyunsaturated**.

Try to include more unsaturated fats instead of saturated fats in your diet.

Saturated Fats	Unsaturated Fats	
	Monounsaturated	Polyunsaturated
<ul style="list-style-type: none">• Butter, Lard, Cream.• Fat on meat, red meat products.• Processed meats: sausages, black and white pudding etc.• Processed foods: tarts, pies take-away foods, crisps, chocolate, fudge, pastries.	<ul style="list-style-type: none">• Olive oil• Canola (rapeseed) oil• Nuts such as peanuts.	<ul style="list-style-type: none">• Almonds• Cashew nuts• Spreads labelled high in polyunsaturates.

Trans fats in our diet raise cholesterol. Trans fats are often found in hydrogenated margarines and some processed foods.

Tips to reduce your fat intake

- Use low fat versions of milk, cheese and yogurt
- Avoid frying food - grill, bake, boil or steam instead
- Trim fat off meat and remove the skin off chicken
- Eat less processed foods.

Have sweet and sugary foods as occasional treats only

Sugar and sweet foods are high in calories and cause weight gain and high blood glucose levels, so should be limited. Chocolate, confectionary, biscuits and cakes should not be taken more than 1 - 2 times per week. If having a treat take a small serving.

Diabetic foods

Diabetes Ireland does not recommend foods labelled as 'suitable for people with diabetes' such as biscuits, chocolate, sweets, jams etc. They are expensive, can be high in fat and if taken in large amounts, can cause diarrhoea.

Reduce your salt intake

Too much salt can contribute to high blood pressure and heart disease so you should reduce your salt intake as much as possible:

- Cut down on your intake of processed foods especially ready prepared meals and takeaways, packet soups, sauces and salted meats such as ham, bacon, sausages
- Instead of using salt when cooking or at the table, flavour your food with pepper, garlic, vinegar, curry powder, mustard, lemon juice, herbs and spices.

Alcohol in moderation

All adults should only drink alcohol in moderation, this is the same for people with diabetes. Alcohol is high in calories and causes weight gain. Men should drink no more than 17 standard drinks a week and women no more than 11 standard drinks a week. Everyone should have at least 3 alcohol free days a week.

- 1 glass of beer = 1 standard drink
- 1 small glass of wine (100mls) = 1 standard drink
- 1 short measure e.g. vodka, whiskey (35mls) = 1 standard drink
- 1 small bottle of wine (187mls) = 2 standard drinks
- 1 bottle of wine = 7-10 standard drinks

See www.drinkaware.ie for more information

If you are on medication that can potentially cause hypos (low blood glucose levels) (see page 20), drinking alcohol can increase your risk of a hypo. Therefore if you are having more than one alcoholic drink you will need to take a snack.

Tips for shopping

- Before you go, make a list and stick to it
- Don't go shopping on an empty stomach
- Give yourself time to read the labels and learn what is in food
- Keep a healthy balance in mind and check to see if your shopping basket reflects the right balance of the food you need to eat.

Reading food labels

Check how much fat, salt and sugar is in your food. The table opposite gives you some information on how to read a food label.

You may have noticed there is a traffic light label on the front of some of the products you buy. This tells you at a glance if the food has high, medium or low amounts of sugars, fats, saturates and salt.

- **RED** means HIGH
- **AMBER** means MEDIUM
- **GREEN** means LOW

The more **GREEN** lights the healthier the choice.

	Sugars	Fat	Saturates	Salt
HIGH per 100gms	Over 15g	Over 20g	Over 5g	Over 1.5g
MEDIUM per 100gms	Between 5g and 15g	Between 3g and 20g	Between 1.5g and 5g	Between 0.3g and 1.5g
LOW per 100gms	5g and below	3g and below	1.5g and below	0.3 and below

(There are no agreed Irish traffic light guidelines. The table is intended to serve as a guide only).



Weight Management

Weight management is an important part of controlling your blood glucose level, your cholesterol and blood pressure and it also helps your mobility. The key to long term weight change is steady, moderate weight loss (1-2lbs per week) brought about by a reduction in your food portion sizes and an increase in your physical activity levels. If you carry extra weight around your waist, losing it will help your body's insulin to work better by reducing insulin resistance. So as well as monitoring your weight you should also check your waist circumference.

Recommended waist circumference (caucasian population)

- Women less than 32 inches or 80 cms
- Men less than 37 inches or 95 cms.

For more tips and advice on how to lose weight go to:

www.weight2live safefood.eu





Physical Activity

Taking regular physical activity is a very important part of diabetes management.

There are many benefits of physical activity including:

- Increased feelings of wellbeing
- It gives you more energy
- It strengthens your heart and improves circulation
- It makes you feel more positive
- It helps you relax and sleep better at night
- It helps lower blood glucose, blood pressure and blood cholesterol levels
- It helps weight control
- It keeps joints mobile.

How much physical activity is recommended?

1. The minimum requirement for physical activity to maintain health is 30 minutes of moderate activity five days a week.
2. Moderate activity means being able to talk while doing the activity and not being out of breath or having pain.
3. Remember your 30 minutes of physical activity is equally beneficial to health if it is spread out over the entire day, it can be multiples of 10-15 minutes throughout the day.
4. If you are not doing much activity at present, check with your doctor first and aim to achieve this target gradually.
5. Try activities that you will find enjoyable like dancing and gardening and ask a friend to join you for support.
6. If you are already moderately active for at least 30 minutes a day or 150 minutes a week, well done! If you are overweight the challenge for you is to build up to 60 minutes five days a week.
7. It is also recommended to add activities which increase muscular strength, endurance and balance on two or more days of the week e.g. digging in the garden and carrying grocery bags are muscle strengthening exercises and yoga and Tai Chi are good balancing exercises.

8. Start by setting short term realistic goals for physical activity. Doing some physical activity even less than the recommended level will provide some health benefits.

Safety tips for physical activity:

- Gradually increase how much activity you do and how often you are active
- Wear clothes to suit weather e.g rain coat if wet, reflective bands if dark, bicycle helmet if cycling
- Use shoes that are comfortable and will support your feet
- Check your feet afterwards to make sure there is no redness, blisters or hard skin forming
- Drink enough fluids to stay hydrated; don't wait until you get thirsty
- If you are on diabetes medication that leaves you at risk of a "hypo" (see page 21) monitor your blood glucose levels and carry some fast acting carbohydrate if doing strenuous or prolonged physical activity
- Stop any activity and seek medical guidance if you feel unwell.

Taking regular physical activity may not be possible for everyone. Check out the booklet 'Getting active for better health' on www.diabetes.ie for chair based exercises.

Try these simple ways to increase activity levels:

- Going up and down the stairs
- Get up to switch channels on the television
- Move around the room during commercial breaks in TV or radio programmes
- Get off the bus a stop earlier
- Park the car in the most distant part of the car park from where you are going
- Walk to the local shop
- Being active in the garden is a great way to both get exercise and socialise with neighbours.

For local groups, classes and more information see www.getirelandactive.ie



Testing Blood Glucose Levels at Home

Blood glucose levels must be kept as close to normal as possible. In people without diabetes, blood glucose levels are normally between 4 and 7 mmol/L, but when a person has diabetes the levels can go higher or sometimes lower than this as a side effect of some medications.

Blood glucose testing may be helpful for the day to day management of Type 2 diabetes therefore some people will be advised to check their blood glucose levels at home. This is done using a home blood glucose meter. **Your doctor or nurse will explain what you need to do, and what your blood glucose results should be. You will be advised of how often and the best times to test by your doctor or nurse.**

When testing your blood glucose levels you should:

- Wash your hands before testing as any food on your hands may affect the result
- Using the lancing device prick the side of your finger to obtain a drop of blood
- Use a different finger each time so one finger doesn't become sore
- Replace your blood testing meter every two years
- Never share your blood glucose testing equipment.

When to test	Range of blood glucose reading
Fasting or before meals	4-7mmols *
2 hours after eating	<8 mmols *

** These targets are general recommendations but your diabetes team should help you set appropriate targets for you.*

The results of your blood glucose testing can help you to understand the affect that food and physical activity have on your blood glucose levels and help you identify changes you need to make. Blood glucose testing will also

help you and your diabetes team assess if your diabetes treatment is working for you satisfactorily.

In April 2016 the HSE introduced changes to the number of blood glucose testing strips they supply for people with Type 2 diabetes. The allowance of strips is based on the medications that one is prescribed to manage their diabetes. **If necessary additional strips can be authorised by your diabetes team. There is no restriction of strips for those who require insulin to manage their diabetes.**

Ask your pharmacist for further information or see www.diabetes.ie

Blood glucose diary

Keeping a diary is a good way to keep track of your daily blood glucose readings. You can also make a note of any questions you might want to ask your diabetes team at your next appointment. It will enable you and your diabetes team to treat your diabetes more effectively.

You should record your blood glucose readings in the diary, along with the date and time of testing. It's a good idea to make personal notes about things that may have affected your blood glucose levels, how you felt about it and what you did to keep your blood glucose under control. This is all valuable information that you can use to make decisions about your diabetes management. Always take your diary to appointments with your diabetes team.

HbA1c (Longer term test)

As part of your diabetes check-up you will have a blood test called a HbA1c. This test will indicate your blood glucose control over the previous 2-3 months. The general recommendation is to aim for a **HbA1c less than 53mmols/mol** or as agreed by your doctor. It is important that you know what this result is and if it is within the recommended level for you. If it is above the recommended level, action should be taken such as eating a healthier diet and/or increasing the amount of physical activity you do. The doctor may also increase your diabetes medication to help improve your HbA1c levels as having a high HbA1c over a long time may increase your risk of developing diabetes complications.





High and Low Blood Glucose Levels

High blood glucose levels (Hyperglycaemia)

If blood glucose levels are consistently high in the short term it may cause you to feel unwell. Over long periods (years) high blood glucose levels can cause complications affecting the eyes, kidneys, heart and feet.

High blood glucose levels can be due to:

- Forgetting or omitting to take your diabetes medication
- Eating more carbohydrate than usual
- Being less active than you should be
- Having an illness/stress/or infection
- Some medications such as steroids.

Signs and symptoms of high blood glucose (see signs and symptoms on page 7).

Treatment of high blood glucose levels:

- Don't panic. An occasional high blood glucose reading is not an emergency
- Try and identify a reason why blood glucose levels may be high
- Check them again to ensure they are coming back to normal
- Drink sugar free fluids to stay hydrated
- If unwell with flu like symptoms or an infection, a medical check-up may be necessary to treat the illness
- If your blood glucose levels are high all the time you should discuss them with your doctor or nurse as your medication may need to be changed.

Tips to avoid high blood glucose levels

- Eat a healthy diet
- Be aware of portion sizes particularly portions of carbohydrate
- Maintain physical activity levels
- Take medications as prescribed.

Low blood glucose levels (Hypoglycaemia or HYPO)

Not everyone with Type 2 diabetes is at risk of low blood glucose levels. Low blood glucose or hypos can be a side effect of some diabetes medications such as insulin injections and some tablets. Check with your GP, nurse or

pharmacist to see if you are taking medications (either injections or tablets) that puts you at risk of low blood glucose levels.

Hypoglycaemia occurs when the blood glucose level drop under 4mmol/l. Low blood glucose is often referred to as a 'hypo'.

If you are at risk of low blood glucose levels any of the following may cause a 'hypo':

- Missing a meal or a snack
- Delayed meals
- Not eating adequate carbohydrates
- Exercising more than normal
- Drinking alcohol
- Taking too much medications or if the dose of the medication is too high
- Being in a hot climate.

Warning signs of a hypo include any or a combination of the following symptoms:

- Weakness
- Hunger
- Shaking
- Feeling confused or dizzy
- Sweating

Treatment of a hypo

1. If possible check your blood glucose level.
2. If it is less than 4mmol/l treat it with some fast acting carbohydrate e.g. 3 - 4 glucose sweets, (Dextrose or Lucozade tablets) OR 150mls ordinary fizzy drink (not diet) or fruit juice. Brands of soft drinks may change their sugar content so check the labels regularly to be sure of the amount you are advised to take.
3. Follow this with a snack such as a plain biscuit, a piece of bread or fruit or a meal containing carbohydrate if it is due.
4. Recheck the blood glucose level after 15 minutes to ensure it has returned to normal. If it is still less than 4mmols/l repeat step 2.

If you are at risk of a hypo you should carry some fast acting carbohydrate with you i.e glucose sweets at all times. You should also carry identification e.g. in a wallet, or wear an identity bracelet stating you have diabetes.

Tips to avoid hypos include:

- Have regular meals
- Have a snack close at hand when exercising
- If having more than one alcohol drink, take a snack (only if at risk of a hypo)
- Always have quick acting carbohydrate i.e. glucose tablets or a sweet drink close by.

See page 32 for precautions to take while driving if you are on medications that leave you at risk of a hypo.



Sick Day Management

When the body is fighting illness it can cause blood glucose levels to rise even if you are eating less than usual. Symptoms of high blood glucose levels (see page 7) can cause dehydration and make you feel more unwell. Dehydration can also be made worse with a high temperature, vomiting or diarrhoea. If you check your own blood glucose levels at home, you may notice that when ill your readings are higher than normal. You are advised to treat the illness and contact your GP if your blood glucose readings remain high or you are not recovering.

At your diabetes appointments get advice about sick day management as it applies to your diabetes. Discuss with your diabetes team what to do in the event of illness, how to manage high blood glucose levels, when you should seek emergency assistance and who to contact if you need advice out of hours. (Have a list of phone numbers for both your GP and out of hours GP in a convenient place e.g. record on page 40 of this booklet).

General guidelines during illness

- Check blood glucose levels more frequently if you are testing at home
- Keep taking your diabetes medication as prescribed
- Eat normally when possible and keep hydrated by sipping on water and sugar free fluids
- If you are on insulin or tablets that have the potential to cause hypos (low blood glucose level) and you are unable to eat it is important to avoid hypos by taking carbohydrates in fluid form e.g. sip on a soft drink (not diet variety)
- Visit your G.P. if necessary. Talk to your pharmacist about suitable cold/flu remedies.

Seek medical help if in ANY DOUBT or:

- Your glucose level remains high (>15mmols).
- You are unable to eat
- You are vomiting or unable to keep down fluids
- Your temperature remains high
- Your glucose levels persist low ... below 4mmol/l



Medications for Type 2 Diabetes

Healthy eating and taking regular physical activity is the first line of treatment for Type 2 diabetes. If these changes are not enough to manage your blood glucose levels, medication will be prescribed.

There are several groups of medication for the management of Type 2 diabetes. You may be prescribed medication from two or three of these categories. Sometimes you may also be prescribed insulin in combination with these medications. The medication prescribed works in combination with healthy eating and regular physical activity. If one medication does not work for you a second or third medication may be added. If your blood glucose levels are high consistently you need to inform your doctor. **Type 2 diabetes is progressive and it is normal for diabetes medication to be increased over time.** It is important to inform your doctor if you are experiencing any side effects or are not tolerating your medication as you can be changed to another medication that may suit you better.

What you should know about your medication:

- The name of your medication
- When is the best time to take it
- How much to take
- Potential side effects especially if the medication puts you at risk of a hypo
- If you are unsure of anything regarding your medications talk to your nurse, doctor or pharmacist.

It is important to always read the patient information leaflet (PIL) insert found in the box of dispensed medication before starting any new medication. If the PIL is not included you can request it from your pharmacist.

Oral medications & injections: How they work? The types of medications are

ORAL MEDICATIONS	DRUG NAME	BRAND NAMES	
Biguanides	Metformin	Glucophage, Metophage, Metformin Bluefish, Metformin Mylan, Metformin Teva, Metformin Aurobind	
*Sulphonylureas	Gliclazide (slow release)	Diaglyc, Diamicon MR, Diaclide MR, Diacronal MR, Vitile MR. (MR = modified release)	
	Gliclazide (short acting)	Diamicon, Diabrezide, Diaclide	
	Glimepiride, Glibenclamide	Amaryl Daonil	
*Meglitinides (Prandial glucose regulators)	Repaglinide	Novonorm	
Thiazolidinediones (Glitazones)	Pioglitazone		Combination with Metformin
		Pioglitazone	Competact
SGLT2: Sodium glucose co-transporter 2 inhibitors			Combination with Metformin
	Dapagliflozin	Forxiga	Xigduo,
	Empagliflozin Canagliflozin	Jardiance Invokana	Synjardy, Vokanamet
DPPIV inhibitors			Combination with Metformin
	Sitagliptin	Januvia	Janumet
	Vildagliptin, Saxagliptin	Galvus Onglyza	Eucreas Komboglyze
	Linagliptin	Trajenta	Jentadueto
Alpha-glucosidase inhibitors	Acarbose	Glucobay	
INJECTIONS	DRUG NAME	BRAND NAMES	
GLP1s agonists (non-insulin injections)	Exenatide	Byetta	
	Exenatide extended release	Bydureon	
	Dulaglutide extended release	Trulicity	
	Liraglutide	Victoza	

* These medications have the risk of hypos. See page 21 for information regarding hypos

categorised according to how they work in the body to lower blood glucose levels

HOW THEY WORK	SOME SIDE EFFECTS	HOW TO TAKE
They increase the effectiveness of the body's insulin and also stop the liver producing new glucose	Nausea, abdominal pain, soft bowel motions or diarrhoea, taste disturbance, weight loss	Take as prescribed with food to minimise side effects
They stimulate the pancreas to make insulin regardless of what the blood glucose level is	May cause low blood glucose levels (hypos). Other side effects may include an upset tummy, headache and rarely a skin rash. Increased appetite can cause weight gain	Take as prescribed with food
They stimulate extra insulin production when carbohydrate is taken. Its effects do not last very long and therefore, is only taken with meals	Most common side effect is low blood glucose levels (hypos) but it is unlikely due to the short duration of the tablet	Take as prescribed before meals. If you miss a meal don't take the tablet
They increase the effectiveness of the body's insulin	Fluid retention, weight gain, respiratory infection, abnormal vision and numbness. If you experience fluid retention, shortness of breath and unusual tiredness report these symptoms to your doctor without delay	Take as prescribed with or without food
They work in the kidney by removing excess glucose and associated calories via the urine. They have the additional benefit of weight loss	They are associated with a higher incidence of genital infections such as thrush and urinary tract infections. They may increase urination	Take as prescribed with or without food
They have the effect of increasing insulin production when needed and reducing glucose production from the liver when it is not needed	Sore throat, stuffy nose, upper respiratory infection. <u>Report persistent and severe stomach pain to your doctor immediately</u>	Take as prescribed with or without food
They help to slow the break-down of food in the digestive system and the absorption of glucose into the bloodstream	These can cause stomach upset, flatulence and bloating	Take as prescribed with food to help alleviate side effects
HOW THEY WORK	SOME SIDE EFFECTS	WHEN TO TAKE
They increase insulin production when food is present and reduce glucose production from the liver to lower blood glucose levels. They also cause a reduction in appetite and delayed stomach emptying which may result in weight loss	Nausea, weight loss, headache, diarrhoea, vomiting, decreased appetite. <u>Persistent and severe stomach pain must be reported to your doctor immediately</u>	These medications are injections but they are not insulin. You should be instructed how and when to use this medication by a doctor or a nurse before it is prescribed

and page 32 for driving guidelines.

Insulin injections

Insulin may be prescribed for you if other treatment options are unsuitable or if they are no longer able to keep your diabetes under control. Insulin may be prescribed in addition to other treatments for Type 2 diabetes.

There are numerous insulins available and your doctor will prescribe the one that best suits your needs. Long acting insulin (basal insulin) is the most common insulin prescribed for people with Type 2 diabetes. However your doctor may also prescribe short acting insulin to be taken with meals or a mixture of short and long acting insulin to be taken twice a day.

LONG ACTING INSULINS (Basal),

Examples:

Brand name	Insulin Name
Lantus/Abasaglar	Insulin Glargine 100 units/ml
Levemir	Insulin Detemir 100 units/ml
Tresiba	Insulin Degludec (2 different strengths available)
Toujeo 300	Insulin Glargine 300 units/ml

How they work? Long acting insulin helps provide the insulin your body needs between meals and while you are sleeping.

Side effects: Insulin injections have the potential to cause hypos.

How to take? Your diabetes nurse or practice nurse will teach you how and when to inject your insulin correctly and should give you guidelines about rotating your injection sites and disposing of sharps safely. It is vital to give the correct dose at the correct time in the correct site.

You should know and be able to specify the insulin product(s) you are on by **brand name** and **strength** as insulin products are not inter-changeable.

See page 21 for information regarding hypos and Page 32 for guidelines for driving if at risk of hypos.



Planning a Pregnancy When You Have Type 2 Diabetes

It is essential that you have good diabetes control prior to pregnancy. If you have diabetes and are planning to have a baby it is essential that you speak with your diabetes team and be advised of how you can get your pregnancy off to a healthy start and what to expect during pregnancy.

Before becoming pregnant you should:

- Use contraception until your diabetes team advises you it is safe to become pregnant
- You will be given stricter blood glucose target levels and will need to monitor your blood glucose levels more frequently
- You may need to change your medications if the ones you are taking are not safe to take in pregnancy, you may even need to start insulin injections
- Have your eyes checked as pregnancy can put extra pressure on the small blood vessels at the back of the eyes
- You will need to take Folic Acid 5mg daily which will need to be prescribed by your doctor.



Complications of Diabetes

Having above-target blood glucose levels over an extended period of time (years) can cause damage to the blood vessels and nerve endings potentially leading to eye, kidney, foot problems and cardiovascular disease. Uncontrolled high blood pressure, high cholesterol and smoking can also increase the risk of these complications developing.

Eye disease

Diabetic eye disease is also known as retinopathy. It occurs when tiny blood vessels in the lining (retina) at the back of the eye are damaged. Diabetic retinopathy can cause the blood vessels in the retina to leak and become blocked and damage your sight. Early stages of retinopathy will not affect your sight therefore it is essential that you attend for eye screening regularly.



At your eye screening appointment photographs are taken with a digital camera without touching your eye. The photographs are reviewed by an expert and you should get a written result within 6-8 weeks. You will also be recalled yearly for your appointment.

Diabetic RetinaScreen is the National Diabetic Retinal Screening Programme that offers free, regular diabetic retinopathy screening to people with diabetes aged 12 years and older. For more information about Diabetic RetinaScreen Freephone **1800 45 45 55** or see www.diabeticretinascreen.ie or speak to your GP. Diabetes Ireland strongly encourages everyone with diabetes to register with this programme.

Kidney disease

Diabetic kidney disease is also known as nephropathy. The kidneys have many important functions such as cleaning and filtering the blood, getting rid of waste and water through the urine and controlling blood pressure. Over time high blood glucose levels can damage the small blood vessels in the kidneys causing them to work less efficiently.

In the early stages of diabetic nephropathy you will not experience symptoms or feel unwell, therefore, it is important to have your kidney function checked regularly. This is done by having a blood and urine test with your GP.

Heart disease

Damage to the large blood vessels in the body is known as macrovascular disease and it can be the cause of heart attacks and strokes. As part of your diabetes appointments your heart should be checked by having your blood pressure and cholesterol levels checked regularly.

Foot disease

Prolonged above target blood glucose levels can cause damage to the nerves and the blood vessels that supply the feet, potentially leading to foot ulceration and in extreme cases amputation. Damage to the nerves (neuropathy) can cause symptoms such as tingling and numbness, not being able to feel pain or temperature as normal or burning and shooting pains. Narrowing of the blood vessels in the legs is called peripheral vascular disease (PVD) which can also be caused from prolonged high blood glucose levels. Everyone with diabetes should have **an annual foot assessment** by a healthcare professional which checks for problems related to circulation and sensation. The healthcare professional should advise of your risk of developing foot problems and also give instructions on the day-to-day care of your feet.

To prevent foot problems daily foot care is vital and should include:

- Examining your feet daily including in between the toes looking for any discolouration, broken or hard skin, or problem toenails
- Washing the feet in lukewarm water and drying thoroughly especially in between your toes
- Moisturise your feet but do not moisturise between your toes
- Wear clean cotton socks daily, ensuring they are not too tight
- Do not walk barefoot
- Examine footwear before putting it on to ensure that nothing will cause injury
- Footwear should provide support and be soft, cushioned and seamless with laces or a soft strap to fasten



- If minor cuts, cracks, blisters are found, clean with salt water or saline solution. Dry well and cover with a sterile dressing
- Do not use hot water bottles or sit too close to the fire or radiator in case of burns
- Corn plasters are not advisable for people with diabetes as they may burn the skin
- If due to a visual impairment or a physical disability, you are unable to do your own footcare, ask a family member to help
- Your doctor or podiatrist needs to be contacted without delay if any foot problems are noticed.

Erectile dysfunction

Many men have problems getting or maintaining an erection at some point in their lives. This can happen for a variety of reasons including stress, tiredness or alcohol. It may also be due to poor blood glucose control, nerve or circulation damage or the side effects of certain medications.



It can be a very difficult subject to talk about but don't worry as your doctor will have heard this problem many times before. There are many effective treatments available for erectile dysfunction. Talk to your doctor or nurse about it.

Diabetes Appointments - What to Expect?

As well as managing your diabetes at home you should have check-ups to review your diabetes with your GP or with the diabetes team in the hospital. Complications of diabetes do not always cause symptoms. Therefore it is essential that everyone with diabetes has certain health checks yearly.

See the diabetes checklist on page 2 for information on what health checks you should be having as part of your diabetes appointments.

How to prepare for your diabetes appointments:

- Bring a list of your current medications
- If you do blood glucose monitoring at home bring a record of your readings and your meter
- Write down any questions that you may have

You should contact your healthcare professional outside routine appointments:

- If your blood glucose levels are consistently outside target range
- If you are not tolerating the medication that has been prescribed for you
- If you have a foot problem and especially if your foot is red, hot, swollen, painful as these are all signs of infection and medical attention is needed urgently.



Education

Group education courses

There are group education courses available for people with Type 2 diabetes to help you learn more about diabetes and feel more confident about managing the condition. The available courses in Ireland are CODE, DESMOND and X-PERT. Find out from your doctor or nurse what is available locally.



Online education

You can learn more about living with Type 2 diabetes on the Diabetes Ireland website www.diabetes.ie. There are additional patient information booklets on the Diabetes Ireland website available to download and read.

There is also a short online education programme called “**Diabetes Smart**” on the Diabetes Ireland website. By completing this you can learn more about how to manage Type 2 diabetes and also check your current knowledge level.

Driving & Diabetes

Having diabetes is not an issue for driving but you must inform the National Driving Licence Service (NDLS) that you have diabetes. If you are taking medications that leave you at risk of hypoglycaemia you must take extra precautions.

Check with your pharmacist/diabetes team if the medications that you are on put you at risk of hypoglycaemia e.g Insulin or sulphonylureas.

NDLS contact details: Tel 1890 406 040 Email: medicalfitness@rsa.ie website www.ndls.ie

You must also inform your motor insurance company that you have diabetes.

Drivers at risk of hypoglycaemia are advised to take the following precautions:

- You must always carry your glucose meter and blood glucose strips with you
- Check your blood glucose before you drive and stop every two hours to retest
- If your blood glucose is 5.0mmol/l or less, take a snack. If it is less than 4.0mmol/l or you feel hypo, do not drive and take appropriate action to correct your blood glucose level, and wait 45 minutes before driving
- If hypoglycaemia develops while driving, stop the vehicle as soon as is safe to do so. You must switch off the engine, remove the keys from the ignition and move from the driver's seat. You must not start driving until 45 minutes after blood glucose has returned to normal. It takes up to 45 minutes for the brain to recover fully



- Always keep an emergency supply of fast-acting carbohydrate such as glucose tablets within easy reach in the vehicle
- You should carry personal identification to show that you have diabetes in case of injury in a road traffic accident
- Particular care should be taken during changes of insulin regimens, changes of lifestyle, exercise, travel and pregnancy
- You must take regular meals, snacks and rest periods on long journeys
- Always avoid alcohol.



More information on driving with diabetes is available from Diabetes Ireland.

Telephone **1850 909 909**

or **01-842 8118** or see www.diabetes.ie or www.rsa.ie



Other Lifestyle Considerations

Smoking

Smoking is not good for anyone's health but smoking when you have diabetes increases your chances of developing the complications of diabetes. There are lots of supports available for those wishing to give up smoking. Take the first step by discussing it with your GP or contacting **The National Smokers Quitline** on **1800 201 203** or see www.quit.ie

Travel

Diabetes is not a barrier for travel but some extra planning may be necessary beforehand:

- You need a letter signed by your doctor stating you have diabetes and are carrying equipment for control of your condition i.e medication and meter
- Carry identification especially if you are taking medication that puts you at risk of low blood glucose levels
- Bring a written prescription with generic names of medication you are taking in case you need to get extra supplies or visit a doctor while abroad
- Bring more medication than you will need in case the holiday is extended for unforeseen reasons. Carry your medication in its original packaging in your hand luggage
- Ensure your travel insurance covers diabetes related health problems
- Find out if you will be able to get the types of food you need while you are away
- You may need to bring snacks for the journey
- If you are crossing time zones discuss when to take your medications with your diabetes team
- You may need to test your blood glucose levels more often while away so ensure you bring plenty of blood glucose strips and a spare meter
- Be aware of the need to protect your feet, don't walk on hot sand, check your feet daily if you are doing extra walking etc.

See www.diabetes.ie for more information.

Dental

If you have diabetes, good dental care is important as diabetes puts teeth and gums more at risk. As for everyone regular dental check ups are advised.

For more information on diabetes and oral health tips see www.diabetes.ie.



Entitlements

Long-term illness scheme

Under the long-term illness scheme all people with diabetes regardless of income/circumstances are entitled to diabetes medication and blood glucose monitoring supplies free of charge. If you are on cholesterol lowering medication and blood pressure medication the cost of these are also covered under the scheme. A person with a medical card can apply for a Long Term Illness card (there will be no prescription charges for diabetes related items) – see www.hse.ie for more information, and contact your HSE local health centre or pharmacist for an application form.

Employment

Under the Employment Equality Act, an employer cannot use a medical condition to discriminate against you. You are legally required however, if asked, to inform any potential employer of any long term condition during the recruitment process.

If you are already in employment your colleagues may not know about diabetes. You can give them a simple explanation about the effects of diabetes and how it can be managed. If you are at risk of a hypo you may need to inform them of the signs and symptoms of a hypo and how to treat it.

Medical card/GP visit card

Medical cards are issued by the Health Service Executive (HSE) and entitle a person to free GP care and hospital visits free of charge. Medical cards are means tested which means your income is assessed as part of the application process. If you do not qualify for a medical card on income grounds you may qualify for a GP visit card. This entitles you to visit a participating family doctor for free. You can apply online on www.medicalcard.ie or get an application form from participating GP's, local health centres or contact 1890 252 919.

Foot checks

Where community chiropody/podiatry services are available they are free to medical card holders or people over 65 years of age. If your GP is part of the HSE National Diabetes Footcare Screening programme, and you have been assessed and deemed at risk, you can be referred to the appropriate podiatrist or hospital diabetes foot clinic. There would be no charge for this service.

Diabetes Ireland provides a wide range of foot care services in their Care Centre in Dublin and Cork. For queries or to make an appointment please telephone **Dublin 1850 909 909** or **01- 842 8118** or email **carecentre@diabetes.ie** or **Cork** on **021 427 4229** or email **corkcarecentre@diabetes.ie**.

Tax relief and chiropody/podiatry services

Non-medical card holders may be able to claim tax relief on health services such as podiatry care if you are required to attend as part of medical treatment i.e. your doctor directs you to attend. You may also be able to claim tax relief on any doctor's visits and prescription drugs associated with this care.

Carers allowance

Carers allowance is a payment to people on low incomes who are looking after a person who needs support because of age, disability or illness. If you qualify for the carers allowance you may also qualify for free household benefits or a free travel pass. Application forms are available through local social welfare offices or can be downloaded from the citizens information website **www.citizensinformation.ie**.

For further information on your entitlements look up the Diabetes Ireland website on **www.diabetes.ie**. Further information is available on **www.citizensadvice.ie** and **www.welfare.ie**.



Top Tips to help Manage Your Diabetes

- Eat a healthy balanced diet; be aware of carbohydrate foods and portion sizes
- Aim to achieve or maintain a healthy weight and waistline
- Aim to include regular physical activity into your daily routine
- Don't smoke
- Take your medication as prescribed by your doctor
- Monitor your blood glucose levels at home if advised to do so by your doctor or nurse. Know the target range of your blood glucose levels and what to do if they are outside of this range
- Be aware of how to look after your feet and check them daily. Ensure you have a foot assessment by a healthcare professional at least once a year
- Attend your eye screening appointments yearly or as advised



- Attend your appointments for review of your diabetes with your GP or diabetes team. Always reschedule appointments if you have to cancel them.



Diabetes Ireland

Diabetes Ireland is a national charity dedicated to providing support, education and motivation to people with diabetes.

Services include:

- **Patient Support** via our diabetes helpline and local volunteer support groups
- **Access to a wide range of diabetes information leaflets** and our quarterly magazine "Diabetes Ireland"; online support and information via **www.diabetes.ie**
- **Support for children with diabetes and their families** via our Sweetpea Kidz Club; adolescent adventure activities, family weekends and parent support groups
- Access to affordable **direct professional healthcare** chiropody & podiatry (foot care), dietetic and counselling services at our **Diabetes Care Centres**
- Access to **community-based patient health education** conferences and structured education programmes
- Co-ordinating national and local diabetes **awareness** campaigns about the symptoms and risk factors for Type 1 and Type 2 diabetes
- **Health promotion** initiatives including: schools awareness, workplace awareness, **early detection and prevention initiatives** and diabetes screening
- Funding Irish and international **research** via our subsidiary charity 'Diabetes Ireland Research Alliance'.



Diabetes Ireland Care Centre

The Diabetes Ireland Care Centres are purpose built units in Santry, Dublin and Mary Street, Cork City. Our team of practitioners have expertise in the needs of people with diabetes. They work together to provide the best possible service to our members. This means we can provide a seamless and integrated range of healthcare services. We work to provide affordable access to services and products in key areas that will help you manage your diabetes and maximise your health and quality of life.

The following services are available at our Care Centres:

- Podiatry, Orthotics and Footcare Services
- Dietitian consultations
- Hearing Tests
- Counselling service
- CODE - group education for people with Type 2 diabetes or Prediabetes.

For further information about these services or to make an appointment please call **Dublin 1850 909 909** or **01- 842 8118** or email **carecentre@diabetes.ie** or **Cork** on **021 427 4229** or email **corkcarecentre@diabetes.ie**.



Useful contacts

	Telephone Number	Website
Diabetes Ireland helpline Monday-Friday 9am-5pm	1850 909 909 or (01) 842 8118	www.diabetes.ie
Diabetic Retina Screen	1800 45 45 55	www.diabeticretinascreen.ie
National Smokers Quitline	1800 201 203	www.quit.ie
GP		
Out of hours GP		
Hospital		



www.diabetes.ie

The design and printing of this booklet has been supported by
an educational grant from the followings companies:



Diabetes Ireland, Northwood Business Campus, Santry, Dublin 9.

Tel: 1850 909 909

www.diabetes.ie