The Essential Guide to Type 1 Diabetes

Contents:

Introduction

The purpose of this booklet is to give you some basic information to help you through the first few weeks following your diagnosis of diabetes.
There are two types, Type 1 diabetes and Type 2 diabetes.
You have been diagnosed with Type 1 diabetes.

What is Type 1 diabetes ?

You have been diagnosed with Type 1 diabetes, or to give its full name Type 1 Diabetes Mellitus.
Diabetes Mellitus comes from Greek words meaning siphon (diabetes) and sugar (mellitus). This describes one of the main symptoms, which is passing large amounts of 'sugary' urine.

Type 1 diabetes develops when there is a lack of insulin.
The main cause of this lack of insulin is the destruction or 'switching off' of the cells in the pancreas where insulin is produced.
The pancreas is an organ in your body situated near the stomach.
The lack of insulin results in the amount of glucose (sugar) in the blood becoming and staying too high. This high blood glucose level is caused by the body's inability (due to the lack of insulin) to move the glucose from the blood to cells in the body where it is used as energy.

We need insulin to live. It controls blood glucose levels.
Glucose comes from the digestion of starchy foods (carbohydrate), such as bread, rice, potatoes and milk. Also cakes, biscuits and sweet foods contain carbohydrate.

Symptoms caused by high blood glucose (hyperglycaemia) levels are:

SYMPTOM	REASON
Passing more urine than usual, especially at night	Your body is trying to get rid of the excess of glucose.
Increased thirst	Because you are passing more urine than usual you become dehydrated, therefore you feel very thirsty.
Extreme tiredness	The cells in your body are not receiving the glucose they need for energy so you feel tired and lethargic.
Weight loss	Your body is trying to compensate for the lack of energy so it begins to break down fat, resulting in weight loss.
Genital itching or regular episodes of thrush	The urine you pass contains a lot of glucose. This creates an ideal environment for infections.
Blurred vision	The high blood glucose levels affect the fluid balance in your eyes. This settles once your blood glucose levels return to a more normal level. This is temporary.

Hyperglycaemia

Hyperglycaemia means a high blood glucose level and happens when there is too much glucose in the blood. This is what you experience when newly diagnosed. If hyperglycaemia is not treated, ketones may appear in your blood. Ketones develop when your body breaks down stored fat for energy. Ketones can build up in the blood, causing the body tissues to become acidic. The body gets rid of ketones in the urine. Excess glucose is also passed in the urine during periods of hyperglycaemia and this can lead to dehydration. It is common at the time of diagnosis that your urine test will show the presence of both glucose and ketones. You may be shown how to test for ketones using either a blood meter or urine strips. You may be asked to test daily until ketones are negative (see ketone leaflet).

Blood glucose (sugar) testing

Blood glucose control is very important. Checking your blood glucose regularly shows how your lifestyle can affect your blood glucose levels. To control your blood glucose you need to get a balance between the amount of carbohydrate foods you eat, activity/exercise and your insulin dose.

Your diabetes specialist nurse (DSN) and dietitian will give you information to help you manage to keep your blood glucose levels within the normal range (approximately between 4 and 7mmol/l).

About blood glucose testing:

- always wash your hands before testing
- check the depth gauge setting of the finger pricker
- prick the upper outside of your finger tip – it's less painful
- massage the finger from the base to the tip to encourage the supply of blood
- follow the blood glucose meter instructions precisely
- check meter is reading in mmols/l and not mg/dl
- always dispose of the lancet safely as discussed with your DSN
- carry your meter with you.

Helpline telephone advice is available from the meter companies if you are having difficulty using your meter. You will need to complete the warranty card and return it to the company.

Insulin injections / storage of insulin

The Dos and Don'ts of injecting and storage of insulin:

You may feel apprehensive about injecting yourself at the start, this is normal!

Do

- Inject as instructed by your Diabetes Specialist Nurse (DSN)
- Eat within 10 minutes of injecting as your insulin will begin to work, and will lower your blood glucose
- Change your needle after every injection
- Store the insulin you are not using in the fridge. Insulin can be kept out of the fridge for 28 days at room temperature.

Don't

- Inject into the same spot every time. It is important to rotate your injection sites
- Freeze your insulin as this damages it
- Keep your insulin in direct heat/sunlight
- Use insulin if you think it looks lumpy or a strange colour
- Use insulin after the expiry date.

Hypoglycaemia

What is a hypo?

This stands for hypoglycaemia, meaning that your blood glucose level is less than 4.0mmol/l. The main causes of hypos are: too much insulin, eating too little carbohydrate (CHO) foods, increased exercise/activity, too much alcohol or extremes in temperature.

You may feel:

- Sweaty
- Dizzy
- Shaky
- Hungry
- Tingling of the lips
- Palpitations
- Look pale

YOU MUST TREAT THIS IMMEDIATELY WITH DEXTRO TABLETS, LUCOZADE OR A SUGARY DRINK FOLLOWED BY A CARBOHYDRATE SNACK IF YOU ARE NOT DUE A MEAL:

- 3-7 dextro/lucozade tablets
- 100mls lucozade or ¼ of a 350ml bottle
- 200mls of ordinary coca cola or ½ can - not the diet type.
- This will bring your blood glucose level up quickly but it is important to have some slower release carbohydrate at this time too to prevent it dropping again. So have a sandwich or a biscuit.

See hypo leaflet for further information.

Always carry your I.D. card - you can get one from your DSN

Food and diabetes

There is no such thing as a 'diabetic diet'; the principles of healthy eating for people with diabetes are the same for everyone. No foods are banned. The aim is to continue to enjoy meals from a wide variety of foods.

Most of the food we eat is made up from protein, fat and carbohydrate. In Type 1 diabetes, because you do not produce any insulin, your body cannot use carbohydrate in the normal way.

Carbohydrate is found in:

- bread, chapatti, pitta, rice, pasta, breakfast cereals
- Sugar, sweets and puddings, cakes and biscuits
- fruit and fresh fruit juices
- milk and yoghurt
- potatoes, peas, beans and corn.

Because you are injecting insulin it is important that you eat carbohydrate foods with meals. At first, try not to eat meals or snacks containing huge amounts of carbohydrate at one time but aim to spread carbohydrate out over the day. If you feel hungry between meals have a snack (fruit, cereal bars, a biscuit, packet of crisps).

Protein, e.g. meat, fish, chicken, eggs and cheese, are digested and absorbed differently and do not cause a rise in blood glucose levels. Foods containing fat, e.g. butter, margarine, cheese and cooking oils, do not cause a rise in blood glucose levels either. However including high fat foods excessively is not good for your heart or your weight!
A good mixture of protein, carbohydrate and fat is needed.

Initially it is a good idea to switch the high sugar foods in your diet to lower sugar alternatives (see table on page 8). You will have frequent opportunities to discuss your chosen diet with the dietitian or DSN.

Working out the amount and type of insulin you need and the amount of food you eat is an individual thing, but as a start:

- try to eat at regular intervals throughout the day
- include some carbohydrate containing food at each meal
- try to keep the amount of carbohydrate similar at each meal
- avoid added sugar and sugary drinks. Make use of sweeteners, diet and sugar free drinks as alternatives, except when hypo.

Sugary foods best avoided	**Low sugar/sugar free alternatives**
Sugar, glucose, glucose syrup, dextrose, sucrose.	Sweeteners e.g. Sweetex, Hermetsetas, Saccharin, Canderel, Splenda.
Squashes, Fizzy drinks, e.g. Lucozade, Lemonade, Colas, Ribena.	Water, soda water, low calorie, sugar free and diet squashes and fizzy drinks.
Sweets and chocolate. Sweet cakes, pastries, chocolate and cream filled biscuits.	Fruit. Plain biscuits, plain cake, scones, pancakes or fruit loaf. Crispbreads, crackers or oatcakes. Sugar free mints.
Sugar coated breakfast cereals, e.g. Sugar Puffs, Frosties, Ricicles and Coco pops.	Porridge, no added sugar mueslis, Weetabix, Branflakes, Cornflakes, Rice Krispies.
Sweet puddings.	Plain ice-cream. Fresh fruit, diet or lite yoghurts, sugar free jelly, tinned fruit in natural juice.
Jam, marmalade, honey, syrup.	Reduced sugar jam and marmalade or use ordinary types and spread thinly.

Lifestyle

When you are first diagnosed with diabetes, your blood glucose levels will be quite erratic. It can take a few weeks for them to settle down, so don't worry if it seems like they never will! The topics listed could all have an effect on your diabetes/blood glucose levels. That doesn't mean you have to stop doing them, but you may need to learn how to adjust your insulin doses or food.
This information gives you advice for the first few weeks after being diagnosed, and should be used along side specific leaflets about certain topics that you need to understand.
Diabetes UK has an excellent website that gives you practical advice: **www.diabetes.org.uk**

• Employment

Depending on how you feel, you may want to take some time off work. If you are feeling unwell due to your blood glucose being high, your doctor might advise you to take some sick leave until you feel better and are managing to do your injections and blood testing. There is a lot of information to take in and a few days off will help you understand it without distractions. When you go back to work, it's a good idea to tell some of your colleagues about your diabetes, especially about symptoms and treatment of hypos.

• Driving

It is OK to drive when you have diabetes. However because you have diabetes treated with insulin, you must tell the DVLA (it is illegal if you don't) and your motor insurance company. Sometimes when your blood glucose is high it can cause blurred vision. If this has happened to you, you shouldn't drive until your vision has returned to normal. When your blood glucose has settled after starting insulin, you could be more at risk of having hypos. It's very important to make sure your blood glucose isn't low before or when driving, as this can affect your concentration and could make you confused. This could put yourself and others drivers at risk of having an accident.

Always do a blood test before driving and if it is lower than 6mmol/l you may need to eat a small snack to prevent it dropping too low. Remember - if you have a hypo before or while driving, you must not drive for 45 minutes after getting your blood glucose level back to normal.
If you have insulin treated diabetes you are not allowed to hold a heavy goods vehicle or public service vehicle driving licence.

- **Exercise/activity**

We would always encourage people with diabetes to participate in exercise. However when you are first diagnosed there a few points to consider.

1. If you are still producing ketones, or if your blood glucose is over 13 mmol/l, you should not exercise.
2. Exercise will usually lower your blood glucose. You might need to have a carbohydrate snack before exercising to prevent having a hypo.
3. If you are still feeling lethargic from high blood glucose levels, do not push yourself to exercise, wait till you feel better.
4. If you do exercise, do a blood test before and after. This will help you understand how it affects your diabetes.

You can discuss these points with your DSN.

The information you need to keep your blood glucose well controlled during exercise is very individual, and depends on the time of day, duration and intensity, and your insulin type. When your blood glucose settles, you can discuss this with your DSN. However the way to manage your diabetes is often by trial and error, to learn what is best for you.

- **Eating out**

The carbohydrate foods (bread, potatoes, rice, pasta, cereal) and refined sugar foods (sweets, cakes, puddings) are the types of food that will affect your blood glucose. Different amounts of these will either

increase (if you eat more) or decrease (if you eat less) your blood glucose. As you become more familiar with your insulin, we will explain how to adjust your doses depending on the amount of carbohydrate you are eating. Often when eating out, you have more food than eating at home. In restaurants foods with sauces, i.e. Chinese and Indian, often have sugar added to them. If you have bread with the meal, i.e. Naan as well as rice, pasta, noodles and then a dessert, that could add up to quite a lot of carbohydrates.
When you are first learning to adjust your doses, you are better sticking to foods you are familiar with, and maybe miss out desserts. Again, once your blood glucose settles, you can experiment and learn how much insulin to take for different meals and desserts.

- **Alcohol**

It is ok to drink alcohol. The same sensible drinking guidelines apply to you as they do to everyone else. Different alcoholic drinks will contain different amounts of sugar. Some drinks such as Smirnoff Ice could put your blood glucose high; it contains approximately 10 spoonfuls of sugar! Drinks such as lager, dry wine and spirits do not contain sugar. If you are drinking spirits you should have a diet/slimline mixer with them. You should always make sure you test your blood glucose and have a carbohydrate snack when you finish drinking, especially before going to bed. This is until you get to know the effects of alcohol and how to adjust your insulin doses.
If you drink a lot of alcohol, it can cause hypos. These are often delayed, especially the following morning if you drank the previous night. In the first few weeks you should try to have only a couple of drinks until you discuss this further with your DSN.

- **Sex**

Sex is a form of exercise. Exercise can lower your blood glucose as it uses up a lot of energy. It may be useful to test your blood glucose after to make sure it isn't dropping too low.
If you are male, having high blood glucose for a while can cause problems with erections. This is quite normal and once your blood glucose settles down the problem should go.

High blood glucose can make you feel lethargic and irritable. You could also be stressed and shocked by the diagnosis; these can all affect your sex drive and enjoyment.
When your blood glucose is high, you are more at risk of developing thrush. This is because your body tries to get rid of the glucose in your blood by passing it out in your urine.
Diabetes UK produce a good leaflet called "Sex and Diabetes" available from the clinic.

- **Travel**

You can still travel and go on holiday when you have diabetes. If you have a holiday arranged within the first few weeks of diagnosis you will need to speak to your diabetes team. Within the first month you will be in regular contact with your DSN, which may be awkward if you are abroad.
If you have holidays planned, **www.diabetes-travel.co.uk** website tells you all about insulin and travelling.

- **Smoking**

It is important that you stop smoking for your future health. However we realise this is probably quite a stressful time for you. When you feel calmer about your diabetes you may want to see your GP if you are finding it difficult to stop yourself.
The health care professionals at the clinic will regularly remind you about stopping, so be warned!

- **Recreational drugs**

Drug use is obviously not encouraged, but your safety is important. Taking drugs will affect your blood glucose and it depends on what type you are taking. Some can cause very high or low blood glucose levels. Again, like alcohol you should refrain from using anything until you understand the effects.
A leaflet, "Glucose to Ganja", is available from your clinic.

- **Stress**

At the start you have a lot of new information and practical things to learn and concentrate on. After a few weeks you might start to feel a bit fed up; this is quite normal, most people do. Once you get used to managing your blood glucose levels it gets easier. Diabetes shouldn't stop you from living how you usually do, although you will need to be aware of your diabetes and the effects on your blood glucose levels. If you want to talk about how you feel, let your DSN know.

Contraception/Pregnancy

Planning and having a baby when you have diabetes is fine. However it is very important to have your blood glucose well controlled before conception. At the moment, if you are not using any contraception it is essential that you start. If you think you may be pregnant you must tell your diabetes team. If you are planning to have a baby, discuss this with your DSN or doctor, it is crucial to get important advice and support.

What you need to do over the next few days

Date:

Breakfast	
Lunch	
Tea	
Supper	

Date:

Breakfast	
Lunch	
Tea	
Supper	

Remember

- Test blood glucose before meals and bed
- Test blood glucose first, then take insulin as instructed, if you are due to have an injection
- When you are first diagnosed don't miss out meals
- If ketones are present, keep testing for ketones until they are no longer present.

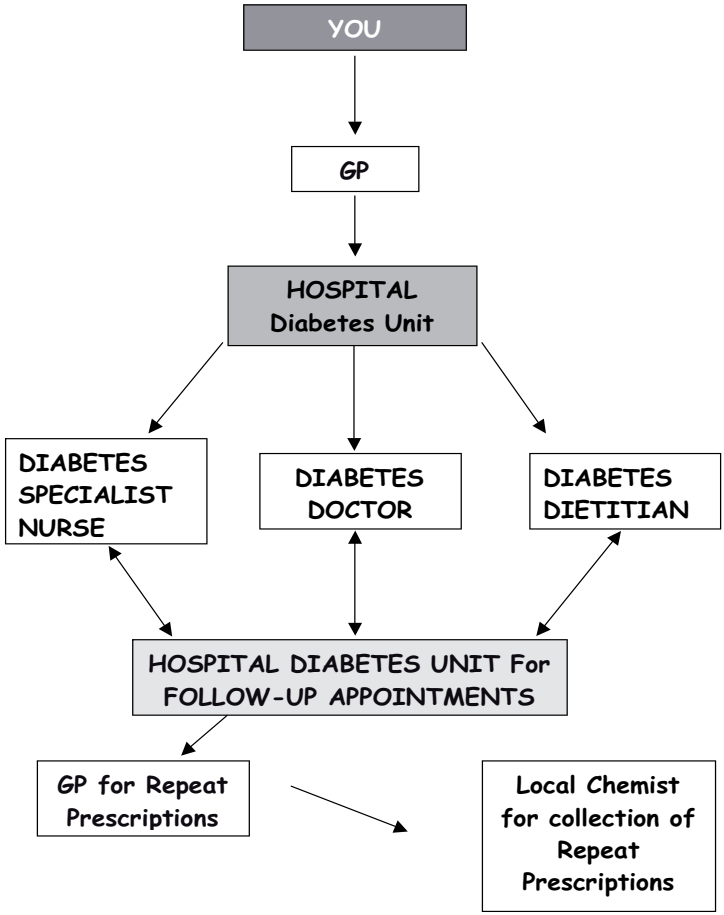
Contacts:
Phone numbers

- Weekdays. Diabetes Specialist Nurse:
- Evenings or weekends. Doctor on call:

Next appointments

- DSN: _____
- Dietitian: _____
- Clinic: _____

People involved when you are first diagnosed



Glossary of terms

Carbohydrates (CHO)
Come from digestion of starchy foods. Glucose then circulates in the blood, and is stored in the liver and muscles. They are main source of fuel for the cells.

Dehydration
Depletion in the body's normal fluid balance.

HbA1c, also known as Glycated haemoglobin.
A test that determines how a person's diabetic control has been over the last 6-12 weeks.

Insulin
A hormone that regulates blood glucose levels.

Ketones
Insufficient insulin in the body stops glucose getting into the cells, so the body will break down fat and protein for fuel instead.
This produces waste products called ketones that are toxic to the body in large amounts.

Lancet
A small needle designed to be used with a finger-pricking device to obtain a blood sample to check blood glucose levels.

Mmol/l Millimols per Litre
A standard unit of measuring blood glucose levels used in UK and Europe.

Pancreas
A gland near the stomach that secretes digestive enzymes.
The hormone Insulin is made by the Beta cells in the pancreas.

Thrush
A fungal infection sometimes known as Candida. Can present in mouth and digestive tract. Commonly presents in genital area. Can be passed on to partners on sexual contact.

Useful contacts

Diabetes UK
PO Box 28439 Edinburgh EH4 2ZY
Tel: 0141 332 2700 Fax: 0141 332 4880
Email: scotl@diabetes.org.uk
Website: www.diabetes.org.uk/scotland

Lothian diabetes website
www.nhslothian.scot.nhs.uk/diabetes

Scottish diabetes websites
www.mydiabetesmyway.scot.nhs.uk
www.diabetesinscotland.co.uk

Questions you want to ask

You may have lots of questions you want to ask. Keep a note of them here to remind you at your next appointment.