

# A quick guide to diabetes for people starting on insulin

## Diabetes and Endocrinology Patient Information Leaflet

### Introduction

This leaflet is for people with diabetes who are starting to take insulin. It gives information on:

- what diabetes is
- how you control your blood glucose level
- types of insulin
- how you store insulin
- how you take the insulin
- caring for yourself when you are taking insulin

### What is diabetes?

Diabetes is a condition in which the amount of glucose in the blood is too high because the body cannot use it properly. Glucose comes from the digestion of starchy foods such as bread or potatoes, from sugar and other sweet foods. The liver also makes glucose and passes it into the bloodstream.

Insulin, a hormone produced by the pancreas, helps the glucose to enter the cells where it is used as fuel by the body for energy. Without insulin, your body cannot use the glucose so it stays in your blood.

There are two main types of diabetes:

**Type 1 diabetes** develops when there is a severe lack of insulin in the body. This is because most or all of the cells which make insulin have been destroyed. This type of diabetes usually appears before the age of 40. It is treated by insulin injections and diet.

**Type 2 diabetes** develops when the body can still make some insulin, though not enough for its needs, or when the insulin that the body does make is not used properly (insulin resistance). This type of diabetes usually appears in people over 40. It is treated by diet alone or by diet and tablets, or sometimes by diet, tablets and insulin injections.

## What are the symptoms of diabetes?

The main symptoms of untreated diabetes are increased thirst, passing large amounts of urine, extreme tiredness, weight loss, genital itching and blurred vision.

## How do I control my blood glucose?

- Insulin injections and exercise will bring your blood glucose levels down.
- Eating starchy or sugary food will increase your blood glucose levels.
- Controlling blood glucose is a balance between insulin, food and exercise.
- Try to keep your blood glucose between the limits suggested by your diabetes clinic. Doing this will make you feel well and reduce the risk of problems associated with diabetes in later life.

## How do I check my blood glucose level?

The best way to test is by checking your blood regularly. Your clinic will recommend the number of tests you should do each week and how to change your insulin dose according to the results.

## What happens when my blood glucose level is low (below 4mmol/l)?

Low blood glucose, or hypoglycaemia (a 'hypo'), can make you feel unwell. Occasionally, you may lose consciousness although you can usually prevent this.

Watch out if you feel dizzy, sweaty, hungry and irritable, or have tingling lips, a pounding heartbeat or start to behave in an unusual manner. These can be symptoms of a hypo which can happen in minutes.

Hypos can be due to too much insulin, extra exercise, too little food, delayed meals, stress or even hot weather. Eat food or drink liquid containing sugar immediately, and follow this with a carbohydrate snack or your next meal if it is due.

You and your clinic can give your family or friends advice on what to do if you become unconscious.

## What type of insulin will I have?

- Insulin is a liquid which is either clear or cloudy.
- Clear insulin starts working quickly (in about 10 minutes) and lasts about four to eight hours. There is also long-acting clear insulin that lasts 24 hours.
- Cloudy insulin starts to work slowly and lasts about 12 to 16 hours.
- By understanding when your insulin works, you will be able to learn to adjust your insulin dose.
- Insulin mixtures look cloudy and contain both types of insulin.
- We will tell you which insulin you are having.
- Insulin is available in vials, cartridges or preloaded pens. Your diabetes doctor or nurse will show you what is available and you can have a discussion about which system will suit you best.
- Your prescription for insulin will be free of charge.

## Where should I store my insulin?

If you are using a pen injection, you can keep this at room temperature for up to a month.

Store spare insulin in the door of your fridge. Do not freeze it.

## When and where should I inject the insulin?

Inject your insulin no more than 20 minutes before you want to eat. However, if your blood glucose is below 4mmol/l, have fast-acting glucose such as:

- 150 to 200ml pure fruit juice, for example, orange or
- 3 to 4 heaped teaspoons of sugar in water or
- 1.5 to 2 tubes of DextroGel/Glucogel or
- 3 to 4 glucose tablets

After you have had this, recheck your blood glucose level. When it is higher than 4mmol/l, inject and then eat immediately.

You may be worried about having insulin injections every day. However, very short, ultra-fine needles are now available and these make injections virtually pain-free. The needles can be used with cartridges, pens and preloaded pens.

You can choose an injection site that suits you. Main injection sites are the abdomen (stomach), thighs and buttocks. It is often advised to inject clear insulin into your abdomen or buttocks; and to inject cloudy insulin into your thigh. Your diabetes nurse specialist can advise which is best for you.

Do not use the same spot in your chosen site every time. Move the site around to avoid discomfort and make sure that your insulin is absorbed evenly.

## How do I inject?

The site where you intend to inject your insulin should be clean and dry. If you are using a pen, make sure a drop of insulin appears on the tip of the needle before you inject. Mix cloudy insulin carefully by tipping the container gently upside down several times (do not shake it).

If you are using 8mm needles, you should lift the skin between the thumb and forefinger. Insert the needle at 90 degrees to the skin surface into the fatty tissue lying below so the metal of the needle is no longer visible. Insulin should be injected slowly, count to 10 and then withdraw the needle. Dispose of the needle safely – ask your GP about safe needle disposal.

If you are in any doubt at all about where, how and when to inject your insulin, you should contact your diabetes doctor or nurse.

## **Will I have a special diet?**

Your new diet is a healthy eating plan that everyone can enjoy. However, you should be careful about how much carbohydrate (starch and sugar) you eat, and avoid fatty foods.

- Fibre (roughage) is an important part of your diet.
- Too much carbohydrate may increase your blood glucose.
- Too little carbohydrate may decrease your blood glucose.

Your clinic will be able to give you more detailed advice about this.

## **Should I exercise?**

Regular exercise is good for everybody, especially for people with diabetes, and it can improve your blood glucose control.

Always carry glucose tablets when you exercise and take extra care as exercise can lower your blood glucose.

If you are going swimming, reduce your insulin dose or eat a snack beforehand. Sometimes you may need to do both. Avoid swimming after a large meal.

## **What if I am ill?**

- If you have an infection or illness, your blood glucose levels may rise. For this reason, you should test your blood glucose more frequently during illness.
- Depending on blood glucose checks, you may need to increase your insulin dose. Your diabetes doctor or nurse will tell you how to do this.
- Under no circumstances should you stop taking your insulin.

- If you are unable to eat properly, you should eat light foods and have sweet drinks instead of starchy foods in your diet in order to maintain your carbohydrate intake. Your dietitian or diabetes nurse can give you advice about this.
- If you are being sick and cannot keep anything down, contact your GP.
- Check your blood ketones and, if your readings are higher than 0.7mmol/l or your urine ketones are positive, seek advice from your GP, diabetes nurse specialist or dial 111.

## What precautions can I take to be safe?

- Always carry some glucose tablets in case you get a hypo.
- Check your blood glucose regularly. Do not just trust it to luck.
- Wear an identification bracelet or necklace that explains you have diabetes, or carry a diabetic emergency card. It can be very useful to a doctor or first aider in an emergency.
- If you are a driver, tell your motor insurance company and the DVLA that you have diabetes.
- You should have your blood pressure checked once a year.
- Keep an eye on your weight as any changes may alter the amount of insulin you need.
- It is important that you take good care of your feet. Regular checks at your diabetes clinic or GP will help this.
- Always attend your annual review appointment.

## What must I not do?

Do not drive without checking your blood glucose levels and never drive if you feel hypo. If you are already in the car, pull over, remove the keys from the ignition, take some glucose tablets and move to the passenger seat until you recover.

Stop smoking today. It is dangerous for everyone but even more so for people with diabetes. It will greatly increase the risk of problems associated with diabetes in later life.

Drinking in moderation is not harmful to people with diabetes but some precautions are needed. Do not drink large amounts of alcohol – no more than two drinks a day (for example, two glasses of wine or two half pints of beer). Alcohol lowers blood glucose levels, it can make hypos more likely and delay recovery from a hypo. Your dietitian will tell you more about sensible drinking.

## Can I find out more?

You can find out more from:

**Diabetes UK** on 0345 123 2399

<https://www.diabetes.org.uk/>

If you have any questions, or if there is anything you do not understand about this leaflet, please contact:

Diabetes Team on 01384 244399 (9am to 5pm, Monday to Friday)

Russells Hall Hospital switchboard number: 01384 456111

**This leaflet can be downloaded or printed from:**

<http://dudleygroup.nhs.uk/services-and-wards/diabetes-and-endocrinology/>

If you have any feedback on this patient information leaflet, please email [dgft.patient.information@nhs.net](mailto:dgft.patient.information@nhs.net)

**This leaflet can be made available in large print, audio version and in other languages, please call 0800 073 0510.**

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