



# Patient information

# **Treating your Diabetes with Tablets**

Medical Directorate - Diabetes Centre

Royal Liverpool Hospital and Broadgreen Hospital

PIF 672 V6

This leaflet is for you if you treat your diabetes with tablets.

Many people with diabetes take tablets. They are not insulin, as insulin cannot be taken in tablet form because it would be broken down in the stomach before it could work. Diabetes tablets work by lowering the blood glucose. They do this by either stimulating the pancreas to produce more insulin, or by helping the body to use the insulin that it does produce more effectively.

Many people follow a healthy diet for some time and find that their doctor advises diabetes tablets. This means that being treated by diet alone has not worked and additional help from tablets is needed. It is important to remember that the tablets are not instead of the diet: you will still need to carry on with the healthy diet as well.

You may also find that your tablet requirements will change over the course of your diabetes. Some people take a combination of tablets to control their blood glucose levels. Sometimes this is not enough and a mix of tablets and insulin will be needed.

## There are different types of diabetes tablets.

Most medicines have at least two names. One is the proper or generic name, and the other is the brand name. If you are ever unsure that you have the correct tablets from the pharmacy, ask the pharmacist.

- Sulphonylureas.
- Biguanides.
- Alpha-glucosidase inhibitors.
- Thiazolodenediones.
- Post-parandial regulators.
- DPP-V inhibitor.
- SGLT-2 inhibitors.

# Sulphonylureas

There are a number of different tablets in this group. They work mainly by stimulating the cells in the pancreas to make more insulin.

## Sulphonylureas include:

- Gliclazide (Diamicron).
- Glimepiride (Amaryl).
- Glipizide (Glibenese).

#### Side effects

Occasionally, some people feel nausea. This usually wears off in a few days. Very occasionally, a skin rash with red lumpy spots may appear. If you have this, contact your GP for advice. You may need to change to another type or brand of tablets. Rarely people may experience severe skin rashes and reactions to sunlight.

The main drawback of sulphonylureas is that they can cause the blood glucose level to fall too low, causing hypoglycaemia (hypo). Some people find that they can gain some weight when started on a sulphonylurea.

# **Biguanides**

The only biguanide in use is Metformin (Glucophage). Metformin works by stopping the liver from producing new glucose and by making insulin carry glucose into muscle and fat cells more effectively. It is often used for people who are over weight because sulphonylureas are associated with weight gain.

#### Side effects

The main side effects of metformin are an upset stomach including nausea, indigestion and diarrhoea. These problems often wear off after a few weeks. The side effects are lessened if the tablets are taken with or immediately after food, and if they are commenced at a low dose and increased gradually over a few weeks.

Some people do not suffer any of the side effects. If you have liver or kidney problems, metformin can build up in the blood stream and cause a very rare condition called lactic acidosis. This can be avoided by having a simple blood test done every year to check your liver and kidney function. Metformin alone does not cause hypos.

## Alpha-glucosidase inhibitors

There is only one type called Acarbose (Glucobay). It works by slowing down the absorption of starchy foods from the intestine. This means that the blood glucose level rises more slowly after meals. Acarbose should be taken immediately before or with the first mouthful of food.

# Side effects

Acarbose may cause wind, rumbling of the stomach, a feeling of fullness, or diarrhoea. This can be lessened by starting with a low dose and increasing the dose slowly. As with metformin, acarbose does not cause hypos, but hypos can occur if acarbose is taken with a sulphonylurea.

### **Thiazolodenediones**

There are only two tablets in this category, Rosiglitazone (Avandia) and Pioglitazone (Actos). They work by reducing insulin resistance, therefore making your body more sensitive to the insulin that you make yourself.

These tablets can take some time to work usually 8 – 12 weeks, so you may not see any improvement in your blood glucose control until then.

#### Side effects

These tablets, also known as glitazones, can occasionally, like most other tablets, cause some nausea, but this should pass. Rarely in some people, these tablets can cause swollen ankles or some breathlessness. If this occurs you should contact your GP or diabetes team for advice. Some people find that they gain some weight when commenced on thiazolodenediones.

### **DPP-IV** inhibitor

Linagliptin, Sitagliptin, Vildagliptin and Saxagliptin are some of the tablets in this class. These tablets reduce blood glucose concentrations by enhancing the effects of 'incretins'. Incretins are hormones which are produced by the gut (bowel) in response to food. These drugs are therefore also known as 'incretin enhancers'.

Incretin hormones have a very short life-span in circulation, as they are rapidly destroyed by DPP-IV. DPP-IV is a naturally occuring enzyme which is involved in breaking down incretin hormones. By opposing the action of DPP-IV, these tablets help to prolong the incretin effect. This helps reduce blood glucose levels.

#### Side effects

Nausea may occur. Flatulence has been reported. When combined with glitazones swelling of the feet may be seen. As with some other oral blood glucose lowering drugs, hypoglycaemia may occur.

## **Post-parandial Regulators**

There are two tablets in this category, Rapaglinide (Novonorm) and Nateglinide (Starlix). They work by helping the pancreas make more insulin after a meal. These tablets should be taken with each main meal.

#### Side effects

Hypoglycaemia, rash, nausea or bowel disturbances are the main side effects, these are uncommon, but if you suffer any problems after commencing a new tablet you should discuss with you doctor or pharmacist.

#### SGLT-2 Inhibitors

# SGLT2 Inhibitors work in the following ways:

Reducing the amount of glucose being absorbed in the kidneys so that it is passed out in the urine, this reduces the amount of glucose in your blood and could also lead to some weight loss..

# There are currently three tablets in this group:

Dapagliflozin (Forxiga), Canagliflozin (Invokana) and Empagliflozin (Jardiance)

#### Side effects

All are taken once a day. Because of the way they work, your urine will test positive for glucose while you are on this medication. How effective it is depends on your kidney function. There is a risk of genital infections and urinary tract infections.

## What do I do if I forget to take my diabetes tablets?

It is important to take your tablets regularly, but people do forget from time to time. If you remember your tablet only an hour or two later, take it then. If it is longer, miss that dose and take your next tablet at the usual time.

**Do Not Ever** double your dose because you have missed a tablet.

## What happens if I am III?

**Do Not** stop taking your tablets when you are ill. If you are vomiting and cannot keep your tablets down, and your blood glucose levels are high, contact your family doctor or diabetes team straight away.

Ask for an information leaflet on managing diabetes during illness.

## Will other medications affect my diabetes tablets?

- Steroids and some water tablets can make your blood glucose levels rise. If this happens to you contact your family doctor or diabetes team for advice.
- Some cold remedies are unsuitable for people with diabetes, if you require cold or cough remedies ask your pharmacist for appropriate sugar free varieties.

 Some tablets including some antibiotics, some antidepressants and some blood pressure tablets can lower your blood glucose levels. If you are in any doubt ask your family doctor or diabetes team for advice.

## Will I have to pay for my prescriptions?

If you need to take tablets for your diabetes you are entitled to free prescriptions for these and any other medication you may need. Ask your surgery for a form P11.

#### Can I still drink alcohol?

Taking diabetes tablets does not mean that you need to give up drinking alcohol, but you do need to limit your alcohol intake. Men should not drink more than three units of alcohol in any one day and women should not drink more than two units. Alcohol can lower the blood glucose levels and can make you more likely to have a hypo.

Never drink alcohol on an empty stomach and never drink and drive. For more information on alcohol and diabetes ask for an information leaflet and discuss with your diabetes team.

# Do tablets cause hypoglycaemia?

Hypoglycaemia or hypo is the medical term for low blood glucose level. Hypo's can happen when you are treated with insulin or some diabetic tablets. Although hypos brought on by tablets are less common than those caused by insulin you should still be aware of the symptoms and treatment of hypo's (see Treating Hypoglycaemia leaflet).

**Symptoms include**: feeling hungry, trembling, sweating, tingling lips, blurred vision, blood glucose levels less than 4mmol/l.

**Reasons for hypos include**: missing meals or snacks, unplanned exercise, not enough carbohydrate with your meals, drinking alcohol on an empty stomach.

**How to treat a hypo**: Take a short acting carbohydrate, for example small glass of Lucozade or three dextrose tablets or two heaped teaspoons of sugar. This should be followed by a meal if due or a snack of a longer acting carbohydrate to prevent the blood glucose from dropping again, for example a sandwich, cereal, plain biscuits or milk.

For more information on hypos ask for an information leaflet and discuss with your diabetes team.

# **Further information**

The Diabetes Centre Tel: 0151 706 2829

Text phone number: 18001 0151 706 2829

NHS 111 Tel: 111

The North West Diabetes UK First floor The Boultings, Winwick Street Warrington, WA2 7TT.

Tel: 01925 653 281 Fax: 01925 653 288

e-mail n.west@diabetes.org.uk

Diabetes UK 10 Parkway London NW1 7AA Website www.diabetes.org.uk

Author: Diabetes and Endocrinology Department Review date: August 2017

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