



**Wolverhampton
Diabetes Care**

Insulin Injections

Insulin is a commonly used treatment in diabetes. Perhaps 30-40% of all people with diabetes are on insulin including the young and older age groups and many of those previously on diet or tablet treatment. Being on insulin is not a disability or a sign that things are bad and it is not like being a “drug addict”. For many, insulin is the best way to get on with a normal life and maintain well being.

What is insulin?

Insulin is a hormone produced by the pancreas, a gland that lies behind the stomach. It allows the carbohydrate or sugar, as well as the other nourishment in our diet, such as proteins and fats, to be used properly. Insulin is the key hormone that triggers your cells to metabolise sugars, proteins and fat. Without sufficient insulin there will be too much sugar left in your blood – that’s why we get diabetes!

Why do we need insulin by injection?

Insulin can not be taken by mouth because it is broken down by the acid in the stomach. At the moment, it has to be given by injection into the skin – not into the veins as many people wrongly think. Most people find this easy to do.

In people who have Type 1 diabetes, the pancreas stops producing insulin altogether. This is because the body’s immune system attacks the cells in the pancreas that make insulin. People with Type 1 diabetes have to inject insulin in order to replace the insulin the body is not supplying. In people who have type 2 diabetes, the pancreas may still produce some insulin, but it either does not produce enough or the body cannot use it properly. The majority of people with type 2 diabetes will eventually switch from tablets to insulin as their own body supply falls.

Most people feel a lot better when they start insulin treatment.

For how long will I have to take insulin?

Most likely, you will have to take insulin for the rest of your life. This is especially true for people with type 1 diabetes – who will become critically unwell if they stop. Most people with type 2 diabetes, previously on tablet treatment, feel so much better on insulin that they would not wish to change back. Very occasionally they can do so safely if their diabetes control has improved because of some lifestyle change such as improved diet, weight loss or better physical fitness or if some other illness causing their diabetes to be out of control has improved. It is unusual for this to happen. It’s best to “bite the bullet” and use insulin injection treatment in the best way to maintain your diabetes control and your long term health.

What are the types of insulin?

There are many different types of insulin of short, middle (intermediate) and long acting varieties. Many come in mixtures and there are many different mixtures. It can be confusing. Always be sure you know the name of your insulin, what sort of insulin it is, how it works and why this type is being used for you.

How many injections will I need?

Most people start with 2 injections a day of pre-mixed insulin containing short and intermediate acting insulins. This usually taken before breakfast and before the evening meal. In some people, more frequent injections are required and very occasionally insulin is given continuously by a small pump.

How do I give them?

Most commonly insulin is given using a device called an insulin pen using a specially made needle made to limit pain and give insulin at the right depth in the skin. Injections can be given in the upper arms, thighs and on the abdomen. The injection site is moved around so as not to always inject in the same place. There is a correct way of doing the injection which you will be taught how to do.

What will be my dose?

There is no fixed dose of insulin. After starting insulin, the dose is gradually adjusted to achieve the right dose for each individual person that produces good, safe blood sugar control by which is meant levels between 4-7 mmol /l before meals and with no serious problems with hypoglycaemia (low blood sugar). The usual starting dose is about 1/2 a unit per Kg body weight, most people end up on about 1 unit per Kg and it is not unusual to need up to 2 units per Kg.

Once you are stable, you will need to carry on checking your blood sugars and working out if your dose of insulin needs to be adjusted over the long term. It is usual for the dose of insulin to gradually change over a period of time with changing circumstances. As you become more expert, you will also learn how to adjust your insulin in the short term in particular circumstances such as with exercise or with certain meals or with different foods.

Will I be dependent on other people?

No. Almost everyone can be fully independent in giving their own injections and knowing how to adjust their own insulin dose. Knowing how to do this is an important part of starting insulin treatment.

Where do I store my insulin?

Store insulin you are not using in the fridge and out of reach of children. If travelling, keep your spare insulin in a cooler bag or vacuum flask. Do not freeze your insulin.

Seeking help and what care to expect

If you need to start insulin you should expect to know why this is, what sort of insulin will be best for you, the number of times a day you will be injecting, how to do the injections correctly, how to adjust your own dose in various circumstances and how to re-balance your diet and exercise habits. It's important that all issues relating to work are discussed with you, especially if you drive for a living. The insulin injection device should be chosen that best suits you, especially if you have difficulties with your hands or with your vision. Once you have started you should be seen frequently until your diabetes has come into good balance and you feel confident in looking after yourself. As time goes on you should have open access to advice if you have concerns or need to make changes.