How can diabetes be treated?

The aim of treatment of diabetes is to keep the sugar levels in the blood as close to normal all the time. The most important step is to regulate the amount of sugar entering the body each day - in other words, keep to a careful diet!

Being overweight makes diabetes much worse. Therefore it is important to lose weight if you are overweight, and avoid putting on weight if you are not. Losing weight can be difficult, but in some cases of diabetes it is all that is needed to make the diabetes go away completely.

A careful diet is all that some people with diabetes need for their treatment, but in some cases drugs are also needed. These may be tablets or injections of insulin. Insulin is the body’s natural substance for regulating the amount of sugar in the blood, and boosting the level of insulin after meals with an injection may be needed to keep the sugar levels stable.

Diabetes can affect the eyes. Eye problems take some time to develop after the onset of diabetes, and are commonest in people who have diabetes before the transplant was performed. Doctors should check the back of the eyes once a year with an instrument called an ophthalmoscope (it’s the same size as a torch with a bright light shining out of the side at the top). If diabetic eye disease is detected, there should be an assessment by an eye specialist (ophthalmologist), and regular checks by the specialist. It is easy, sometimes, to miss an eye specialist appointment if someone is in hospital with another problem, but anyone having specialist eye care should make sure they have appointments for regular checks.

Further information on diabetes is available from Diabetes UK. Website: www.diabetes.org.uk or contact the Diabetes UK Careline on 0345 123 2399

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The National Kidney Federation cannot accept responsibility for information provided. The above is for guidance only. Patients are advised to seek further information from their own doctor.

Written by Dr. Rob Higgins, Renal Consultant, Walsgrave Hospital, Coventry.
Updated by John Black, Surgical Registrar and Atul Bagul, Consultant Transplant Surgeon, Leicester

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What is diabetes?

In diabetes the level of sugar in the blood does not stay level. Sugar is needed for energy by all parts of the body, and sugar is dissolved in the blood so that it can be carried around. The level of sugar in the blood usually stays the same, throughout the day. That means that if you eat a lot of sugar, for example a chocolate bar, although the sugar passes into your body very quickly, it is put into store and the level of sugar in the blood does not go up. If you do not eat all day, sugar is released from storage, so that level of sugar in the blood does not fall.

In diabetes, if you eat a lot of sugar, the level of sugar in the blood goes too high. If you do not eat for a long time, the level of sugar in the blood may fall too low.

Why is diabetes a problem after kidney transplant?

There are several reasons why diabetes can be a problem after a transplant.

• If someone has diabetes before a transplant, when they are on dialysis, it’s very unusual for the diabetes to go away. Indeed, it often gets harder to control.

• Some of the drugs given to keep the transplant working - the anti-rejection drugs - can cause diabetes as a side effect. Prednisolone (a steroid), cyclosporin and tacrolimus can all cause diabetes. These drugs are important in transplantation and research has not yet found better ones. Therefore, even if one of these drugs causes diabetes, it is not usually possible to come off them completely.

• Diabetes is very common in the general population. As many as 30% (one in three) of people who are elderly and overweight have diabetes, even though this is often mild. Therefore someone could develop diabetes, even though it is not caused by their transplant.

• People may also be at extra risk of developing diabetes after a kidney transplant if they are of black or south Asian ethnic origin, or have several family members with diabetes.

How is diabetes diagnosed?

Most transplant teams include measurement of the sugar level in the routine blood tests performed before and after a transplant. Usually changes in the blood results will be detected before any symptoms are experienced, especially as diabetes most commonly develops in the first 3 months after a transplant, when blood tests are very frequent. Diabetes can cause thirst, passing urine frequently, and infections such as thrush (an infection causing a sore throat or itching in the genital area). If someone has any of these symptoms after a transplant, they should ask the transplant team to check for diabetes.

Once diagnoses is confirmed the treatment is a multi-strategy approach and includes optimising your anti-rejection drugs, commencing tablets or insulin. This is done in close liaison with a diabetic specialist nurse and a specialist diabetic doctor.

How common is diabetes after transplant?

As many as 1 in 3 people will develop some high blood sugar levels after their transplant. This may be early after the transplant, when doses of drugs are higher. With reductions in drug dosages and a careful diet, most of these cases will improve to the point where they do not have ongoing diabetes. However, about 1 in 20 people will develop permanent diabetes after transplantation, requiring either tablets or insulin injections for long term control.

What problems does diabetes cause?

There are two main types of complication. First, complications that occur immediately, due to changes in the sugar level in the blood, either too high or too low. Secondly, long term complications, like infection and circulation problems.

1) High and low blood sugar levels

When there is a high blood sugar level, this makes some sugar pass through the kidney into the urine. This in turn makes the kidney pass more urine, leading to a shortage of water in the body. This causes thirst, and in some transplants, causes the kidney function to get worse. A very high sugar level can upset the balance of the body’s internal chemistry, with sickness, breathlessness and eventually a coma.

Low sugar levels starve the brain of the sugar it needs for energy, leading to slurred speech and a feeling of drunkenness. This can progress to a ‘hypoglycaemic coma’, in other words, the low sugar makes someone unconscious. Someone who is in hypoglycaemic coma (often called a hypo for short) is at risk of having fits or even dying, so that it must be treated urgently with a sugary drink or injection. Even better, regular diet and use of drugs given for diabetes can prevent hypos.

2) Infection and circulation problems

When the blood sugar level is too high, the body may not feel any different, but hidden damage occurs. First, the body’s defences do not work properly when the sugar levels are high, so that infections are common. These might be minor infections such as urine infections or skin infections, but more serious infections such as pneumonia or septicaemia (infection in the blood) can occur.

High sugar levels over a period of years can make circulation problems much worse. This is because diabetes accelerates the process of hardening of the arteries (atherosclerosis or arterial narrowing). Heart attack, stroke or problems due to poor circulation to the legs can develop.

How can complications of diabetes be prevented?

Good control of diabetes is important. Good control means keeping the sugar levels as steady as possible and as close to the normal levels as possible. The next section below explains this in more detail. The prevention of circulation problems is very important and, in addition to controlling the blood sugar levels, it is important to stop smoking and take regular exercise.

The blood pressure should be kept under careful control; a daily aspirin tablet may help; and the cholesterol level...