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Diabetes Mellitus



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1. What is diabetes?

In simple terms diabetes prevents your body converting sugars and starches in your food into energy. The body uses insulin to do this. When diabetes is present the body fails to produce insulin or the insulin it does produce doesn't work properly (insulin resistance).

When we eat food some special cells in our pancreas should produce insulin. The insulin transports glucose, made from carbohydrates in the food, into the cells, where it can be used by the body for energy. Sugars and starches are the most efficient source of food energy and are carried in the blood as glucose. If insulin isn't produced, or doesn't work, the glucose builds up in the bloodstream instead of the cells, causing the common symptoms of diabetes:

- Lethargy; carbohydrate cannot be converted into energy
- Frequent passing water; the body flushes excess glucose down the toilet.
- Thirst; the body attempts to replace lost fluid.
- Repeated infections; bugs love sugar.
- Weight loss; predominantly in type 1 diabetes.
- Visual changes; due to temporary changes in lens shape.
- Symptoms are more often to be found in people with type 1 diabetes. People with type 2 diabetes may have no or very few symptoms prior to diagnosis. Your health care team should support you through this time and answer your queries.

2. What are the different types of diabetes?

In type 1 diabetes the pancreas fails to produce insulin and insulin injections are required for life.

In type 2 diabetes the cause is generally weight related. If you are slim it is likely your body is not producing enough insulin to convert the carbohydrate you eat into energy. You may need tablets and/or insulin to help. If you are overweight it is more likely that insulin resistance is responsible.

Reducing your weight and being physically active will improve your insulin's activity but you may need medication or insulin to help.

There are other types of diabetes but they are unusual conditions and specialist care should be provided.

3. Causes of diabetes

The cause of type 1 is unknown but it is thought to be an auto-immune process. In effect the body produces antibodies to the pancreas, damaging it and preventing it producing insulin. Type 1 only affects about 15% of all people with diabetes and it usually starts below the age of 40.

Type 2, however, is more likely to affect older people, although it is being found increasingly in younger people especially if overweight and lacking in physical activity. Type 2 diabetes is strongly linked to obesity and tends to run in families. It is more prevalent in South Asians and Afro-Caribbean's. Many people with type 2 diabetes have high blood pressure and cholesterol and you may need tablets to control these too.

4. Treatments

Type 1 is always treated with insulin injections. There are many different types and regimens. If you are on insulin you should discuss the most appropriate one for you with your care team. Be sure to 'rotate' injection sites — a fatty pad may build up if you inject repeatedly in

the same spot. You can inject into the tops of your thighs, tops of your arms, abdomen and buttocks.

If you are on insulin, sharps, needles and lancets need to be disposed of carefully. Your healthcare team can give you advice on how to dispose of your sharps responsibly.

The backbone of treating type 2 is always healthy eating plus physical activity. But type 2 diabetes is a progressive condition and in time tablets, and/or other forms of medication is likely to become necessary and it may even progress to insulin injections.

Most people with diabetes require medication to control their condition yet fewer than half remember to take them as prescribed. When you agree to take medication make sure you know what each tablet is for, any side effects to be expected and when to have a review. Your medication is designed to prevent complications in the future even if you feel no difference now.

5. Blood glucose target levels

All people with diabetes taking insulin treatment and some of those treated with specific tablets are encouraged to monitor their blood glucose with finger prick tests. You should discuss this with your doctor or Healthcare professional. Generally the target to aim for is around 120 -140 mg/dL before meals and up to 160 mg/dL two hours after meals – although we are all individuals and targets must be tailored to our needs.

These levels should not be confused with a blood test usually done by your doctor called an HbA1c which gives a percentage of the glucose in the blood over the preceding two months — the target nowadays is 48-50mmol/mol (which was 6.5- 7.5% previously)

Insulin and some tablets can reduce your blood glucose levels to low levels making you feel unwell and confused, a condition referred to as a 'hypo' or hypoglycemic attack. Your health care team should discuss this with you, if you are at risk of them and how to stop them happening.

6. Basic recommendations

Food Glorious food. If we all ate diet recommended for Diabetes the health of the nation would be improved. The size of the plate matters too. If food intake exceeds. A healthy balanced diet is also recommended as part of a healthy and active lifestyle.

7. What care to expect

At diagnosis you should be given a full explanation of diabetes and a care plan. You should be involved in agreeing goals and targets achievable by you. Take a note of what is agreed. It will come in useful as you see your progress over time. At the very least you should have annual reviews for your diabetes including an explanation of blood tests which, ideally, should be done a week or two prior to the consultation to allow time for the results to be shared with you.

8. Top tips to manage diabetes

Diabetes is never mild...but it can be managed.

- Maintain a healthy weight. Losing weight, if you are overweight, improves overall health and diabetes control
- Be physically active. Physical activity improves insulin sensitivity
- Keep blood glucose levels under control. Helps protect the eyes, kidneys and feet
- Know your cholesterol level. Statin medication helps protect the heart
- Have your blood pressure checked regularly. Good blood pressure levels protect the heart and kidneys
- Do not smoke. Smoking is highly damaging but much more so when combined with diabetes. Both thicken the blood, encourage plaque formation and put a strain on the heart.