

DIABETES MELLITUS - GENERAL FACTS

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Diabetes is a high level of sugar (Glucose) in the blood. This happens when the body either does not produce, or is unable to use Insulin, a hormone made by the pancreas, that the body uses to convert the food that we eat – and more specifically the carbohydrates- into energy.

The main types of Diabetes are Type 1 and Type 2 Diabetes:

In **Type 1 Diabetes**, the pancreas produces too little (or no) Insulin. This type affects 5 - 10% of people with diabetes, mostly children and young adults. It is due to an autoimmune condition, and develops quickly, with the symptoms appearing suddenly. People developing this condition can become very ill before they get diagnosed. This Type of Diabetes always requires Insulin for treatment.

Type 2 Diabetes: 90-95% of people with Diabetes have this type. In type 2 Diabetes, the cells in the body are not able to use Insulin well (insulin resistance). Over time, the pancreas does not make enough Insulin either. This type of Diabetes occurs mostly in adults, but over the last years it has been occurring in younger people as well, and even in some children. Being overweight is a risk factor for developing type 2 diabetes, as well as the lack of exercise, dietary factors and genetic factors (there is a higher chance of developing type 2 diabetes if there is diabetes in the family). This type of diabetes develops gradually, and most people are asymptomatic for some time

prior to diagnosis. This type of diabetes can be treated with diet alone (diet, exercise and weight loss are the most important treatment components), if this is not enough, then with tablets, or Insulin.

Other types of Diabetes Mellitus are:

- Diabetes in pregnancy (Gestational Diabetes): High blood sugars that occur at the later stages of pregnancy- usually after the 24th- 28th week of pregnancy. There are specific criteria for diagnosing this. It is important that the blood sugar is under control during pregnancy, either with diet alone, or with Insulin. It usually goes away after delivery.
- Diabetes due to pancreas diseases
- Diabetes due to endocrine conditions
- Diabetes due to genetic disorders
- Diabetes due to certain medication

What are the symptoms of Diabetes/hyperglycemia?

People who have diabetes may present with the following symptoms:

- Increased thirst
- Increased Urination (passing a lot of urine often)
- Blurry vision
- Abdominal pain.
- Nausea and vomiting
- Tiredness
- Weight loss

- Frequent infections-especially skin and urine infections.
- Problems with healing of wounds

However, most of these symptoms are more common in people with Type 1 Diabetes, who as mentioned above can become very ill very quickly before they get diagnosed. People with type 2 diabetes can be asymptomatic for a long time, and may be diagnosed on routine testing, or may present first time with the complications of diabetes.

What are the chronic complications of Diabetes?

Diabetes mellitus which stays uncontrolled for a long time can cause damage to large and small vessels (arteries) in the body, and to the nerves. It can therefore lead to visual problems- up to blindness, Kidney problems, foot problems- from problems with tingling sensation, pain and numbness at the feet, up to infected wounds which are difficult to heal. It can also lead to strokes and heart attacks.

How is Diabetes Mellitus diagnosed?

The diagnosis of Diabetes is done with blood tests. These can be:

- 1) Fasting blood glucose test: for the diagnosis of asymptomatic individuals, 2 fasting blood glucose values of > 126 mg/dl are required.
- 2) Glucose tolerance test : This is a 2 hour test, which measures the blood glucose before, and 2 hours after drinking a specific amount of glucose. A value of blood glucose of > 200 mg /dl 2 hours after the oral glucose is diagnostic.
- 3) HbA1c (Glycosylated Haemoglobin): this is related to

the average blood Glucose over the last 3 months. Although it is not used as diagnostic criterion for diabetes, a value of >6.5% confirms the diagnosis

What is pre- Diabetes?

Pre- Diabetes is when the above glucose/ HbA1c values are not high enough to diagnose diabetes, but they are higher to normal. This can lead to type 2 DM, but according to research it is also related to complications on its own.

What are the goals in treating Diabetes Mellitus?

The goal of treatment is a blood glucose as near to normal as possible to avoid the development of complications. A measure of how well Diabetes is controlled is again the HbA1c (glycosylated hemoglobin) which gives you the average blood glucose over the last 3 months, and this should be < 7% for a reasonable control , if possible closed to 6.5%. There are other factors that very important in the treatment of diabetes, and should be taken in consideration: The blood pressure, the Cholesterol, and people who smoke should stop smoking.

How is diabetes being treated?

People with type 1 diabetes need Insulin, best given as multiple injections a day, taking in account the blood glucose levels and the food they eat. It is important that they check their blood glucose several times a day in order to estimate the amount of Insulin they need, and to have a balanced diet, where they estimate their carbohydrates. Healthy lifestyle is important for everybody. Despite the need for Insulin injections, people with

type 1 diabetes can lead a perfectly normal life – with a bit of planning. There are several examples of it around the world, from athletes- even Olympic winners, to famous Hollywood actors. An alternative to multiple injections is the Insulin pump- which gives a constant delivery of Insulin, and gives an even better control.

For people with type 2 diabetes, the most important factors in treatment are: diet, exercise, and weight loss. Healthy life style is even more important for them. Some people manage to control their diabetes with these measures only. If this doesn't work, there are a few medication groups that can be used, the doctor will chose the one most suitable for each individual patient. With time though, quite a few people with diabetes will need to go on Insulin.

What is a good management plan in diabetes:

The key factors in the management of Diabetes are:

- Daily work by the patient: Healthy lifestyle, with diet, exercise, measuring of blood sugars (BMs) and estimating Insulin according to food and blood sugars- if taking any Insulin, or regular taking of medication prescribed by Doctor. Very important is to stop smoking.
- Cooperation between patient and the doctor, with regular follow up.

The follow up by the doctor includes:

- Check of HbA1c every 3 months
- Check of blood pressure, and treatment with medication if necessary

- Blood test to check lipids (cholesterol and triglycerides) and if needed, prescription of medication.
- Feet examination - check for the sensation and circulation
- General blood tests- which include a blood test for the kidney function
- Urine test – for a type of protein called microalbumin. This also checks the kidney function.
- Eye screening: people with diabetes should have their eyes checked yearly by an ophthalmologist – unless instructed otherwise by the doctor.
- Some patients will need to be taking Aspirin, to help with circulation and protect against blood clots. This will need to be assessed by the patient's doctor individually.

Conclusion:

Diabetes Mellitus is a common condition, which if left untreated can lead to serious acute problems and chronic complications. However, with appropriate treatment, people with diabetes can have a good control, and lead a perfectly normal life, both private and professionally. There are several examples around the world – from athletes and Olympic winners, to Hollywood actors, to people with difficult professions. The management of Diabetes has to be individualized, and involves an active involvement of the patient, and closed collaboration with the doctor and other health care professionals.

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