

## DIABETES MELLITUS

*“Diabetes is a major public health problem. The rising incidence of Diabetes Type 2 is 90% related to the effects of urbanisation and unhealthy lifestyles. Research studies show that healthy eating and regular physical activity can prevent or delay the onset of Diabetes Type 2, even in high-risk individuals.*

*Early detection and effective management may be associated with a normal lifespan and quality of life. Lifestyle modification, behavioural change, team decision-making and self-care will aid every individual with diabetes to manage his/her condition and prevent deterioration and complications.”*

1. **Diabetes mellitus** (diabetes) is a chronic illness that causes too much sugar to appear in the bloodstream and urine due to the lack or reduced production of a substance called insulin.

The disease, which is characterised by a chronic disturbance of the carbohydrate, fat and protein metabolism, has various causes.

2. **Objectives with this information**

- To promote a healthy lifestyle (diet, exercise, no smoking and moderate alcohol use)
- To encourage the early detection of diabetes
- To promote foot care
- To prevent complications of diabetes
- To encourage treatment compliance

3. **Types of diabetes**

### **Type 1 diabetes**

- It is also known as insulin-dependent diabetes mellitus
- About 10% of people with diabetes suffer from Type 1
- Their bodies produce no insulin
- Children and young adults usually suffer from this type of diabetes
- It is usually diagnosed before the age of 40
- Persons with Type 1 diabetes mellitus must obtain insulin through injection

### Symptoms of Type 1 diabetes

If you have two or more of the following symptoms, you might have Type 1 diabetes:

- Extreme weight loss
- More frequent passing of urine than usual (glucose cannot pass out of the body on its own, so it sucks up water to “flow” from the body)
- Dry skin (excessive urination can result in dehydration)

- Always thirsty, hungry and tired
- Muscle or stomach cramps
- Nausea or vomiting

## **Type 2**

- About 85% of persons with diabetes have Type 2 or non-insulin dependent diabetes mellitus
- Their bodies do not produce enough insulin
- It is mostly diagnosed after the age of 40
- Persons with Type 2 diabetes mellitus are usually overweight
- Oral medication or insulin injections may control the disease

### Symptoms of Type 2 diabetes

If you have one or more of the following symptoms, you may suffer from Type 2 diabetes:

- Always thirsty
- Passing urine frequently
- Increased appetite
- Slow wound healing
- Recurring skin, mouth or bladder infections
- Blurred vision (due to fluctuation of the amount of glucose and water in the eye lenses during periods of dehydration)
- Tingling or numbness in hands and feet (due to nerve damage following prolonged high glucose levels that cause changes in the nerves)

### **Gestational diabetes** (pregnancy-induced diabetes)

#### Symptoms

- Always thirsty
- Passing urine frequently
- Increased appetite
- Recurring bladder infections

#### **4. What to do when experiencing the above symptoms?**

Consult your local clinic for free screening and advice, or your doctor.

#### **5. Factors contributing to diabetes**

##### Hereditary

A person is more likely to suffer from diabetes mellitus if a parent, grandparent, brother, sister or even a cousin has diabetes.

If one is overweight and a parent or sibling has Type 2 diabetes, there is a risk of up to 50% of developing Type 2 diabetes.

##### Obesity

80% of people diagnosed with diabetes mellitus are overweight.

### Age

With aging the body may produce less insulin.

### Viruses

In some people, certain viruses may destroy beta cells in the pancreas that produce insulin (the pancreas is the gland behind the liver.)

### Faulty immune system

Various factors may induce the immune system to destroy beta cells.

### Physical trauma

The pancreas may have been destroyed by an injury or accident.

### Drugs

Diabetes may be masked by drugs prescribed for another condition.

### Stress and pregnancy

The effect of insulin may be blocked by hormones released during a period of stress.

## **6. What is insulin?**

Insulin is a hormone produced in the pancreas. It regulates the amount of sugar in your blood.

In people with diabetes the pancreas produces one of the following:

- No insulin
- Not enough insulin
- Defective insulin

When there is little or no insulin in the body, or when insulin receptors are not sensitive or not working properly, glucose has difficulty entering your cells. (Insulin is like a key that opens cells to let sugar in). The glucose will then circulate in the blood and cause health problems. Some of it will be excreted with urine.

## **7. Symptoms**

### Characteristic symptoms

Excessive thirst, excessive urination and weight loss.

### Other symptoms

Blurred vision, general body weakness, susceptibility to infections (especially skin, urogenital tract and respiratory tract infections), itchy vulvae and poor wound healing.

Sometimes symptoms may not be severe, or may be absent.

The "normal" sugar level is around 6,1 mmol/l (4,0 to 7,0 mmol/l is also acceptable).

30% to 85% of cases of Type 2 diabetes are undiagnosed.

## **8. How is diabetes managed?**

The goal is to keep the blood levels as close to normal as possible (between 4,0 and 7,0 mmol/l) by doing the following:

- Weight control – the more overweight the person, the more resistant cells are to insulin.
- Dietary guidelines:
  - Eat according to the five food groups of the food pyramid
  - Increase roughage in the diet, as it neutralises sugar
  - Remove all visible fat from food
  - Eat more fish
  - Eat dried beans instead of meat at least once a week
  - Eat small regular meals (cut on starches such as bread and pap)
  - Use soft margarine instead of hard blocks of margarine
  - Use very little salt and fat/oil in your food
  - Avoid alcohol – it results in low blood sugar
  - Drink a lot of water – eight glasses a day
  - Eat fruit and vegetables unpeeled and raw as much as possible
- Exercise – it helps control weight. It uses the blood sugar, increases blood flow and improves circulation in the small blood vessels
- Type 1 – take insulin injections as prescribed by the doctor
- Type 2 – take oral medication as prescribed, and insulin if prescribed

## **9. Foot care**

- Always keep your feet clean.
- Dry your feet well, especially in between your toes.
- Check under your feet regularly.
- Never walk barefoot.
- Never cut corns or use sharp objects on your feet.
- Never put your feet near open heat.
- Avoid long boots.
- Avoid tight socks and shoes.
- Avoid extreme heat.
- Avoid high shoes with no support.
- Wear well-fitting flat shoes.

## **10. Dangers of diabetes**

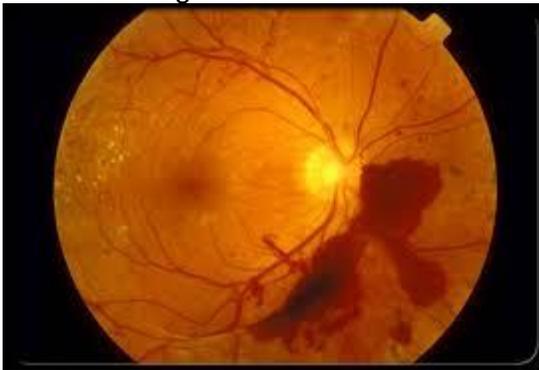
Diabetes can damage your –

- blood vessels, usually starting with small blood vessels;
- kidneys;
- nerves to the sexual organs, ultimately leading to impotence;



- eyes, leading to blindness; and

### Retinal damage



- nerves (sensation loss in the limbs), which can cause gangrene.



You can live a good, active life if –

- diabetes is diagnosed early;
- you control your diet;
- you take your medication as prescribed by the doctor; and
- you exercise regularly.

If the test results from your health screening is normal, repeat testing at three-year intervals.



**REDUCING THE RISK OF DIABETES DEVELOPMENT LEADS TO A LONG AND HEALTHY LIFE FOR ALL – PRACTISE A HEALTHY LIFESTYLE.**

Get screened



Receive immunisation to prevent complications



Eat a variety of fresh foods



# Main symptoms of Diabetes

blue = more common in Type 1

## Central

- Polydipsia
- Polyphagia
- Lethargy
- Stupor

## Eyes

- Blurred vision

## Breath

- Smell of acetone

## Systemic

- Weight loss

## Respiratory

- Kussmaul breathing (hyper-ventilation)

## Gastric

- Nausea
- Vomiting
- Abdominal pain

## Urinary

- Polyuria
- Glycosuria

