What is Diabetes Mellitus

Diabetes mellitus is a chronic disease. When the pancreas secretes insufficient insulin, or if insulin functions abnormally, our body will not be able to utilize blood sugar in producing energy, causing high levels of blood sugar which when being excreted in urine will lead to “glycosuria”.

Recent statistics show that one in every ten Hong Kong adults suffers from diabetes mellitus, and there is a rising trend.

Classification of Diabetes Mellitus

Type I Diabetes Mellitus
- Also known as Insulin Dependent Diabetes Mellitus
- Usually manifests in childhood or adolescence
- Inability to produce insulin because of damaged insulin-producing cells
- Related to genetics or autoimmune disorders

Type II Diabetes Mellitus
- Also known as Non Insulin Dependent Diabetes Mellitus, and most of the diabetics belong to this type
- Usually manifests in middle-age, obese persons or those having a family history of diabetes
- Insulin is non-functional because the body is resistant to it
- Related to genetics, inappropriate diet, obesity and lack of exercise
Symptoms and signs

- Thirst
- Urinate frequently
- Fatigue
- Hunger feeling
- Weight loss
- Poor wound healing
- Itchy skin

Other symptoms and signs arising from complications, e.g. blurred vision, numbness or paraesthesia of limbs, etc.
**Type I Diabetes Mellitus**

- Mainly rely on insulin injection
  - There are 3 types according to their durations of action, i.e. short-acting, intermediate-acting and long-acting
  - Twice-daily injection is the most common regimen. If work is organized in such a way that rest and meal periods are irregular, then a multiple-injection regimen may be required to maintain a steady blood sugar level.
- Diet control and healthy lifestyle

**Type II Diabetes Mellitus**

- Mild cases can be controlled by suitable diet and regular exercise.
- More serious cases may require treatment with oral hypoglycaemic agents or even insulin injection to attain satisfactory control.
Complications

Hyperglycaemia

- **Causes**
  - Severe or untreated disease
  - Failure to take oral hypoglycaemic agents or insulin injections

- **Symptoms and signs**
  - Thirst, shortness of breath, nausea and vomiting, etc
  - Loss of consciousness and coma in severe cases

- **Management**
  - Seek immediate medical attention
  - Send the delirious or comatose patient to hospital immediately
Hypoglycaemia

• Causes
  — Hypoglycaemic agents (e.g. sulphonylureas) or insulin overdose
  — No or inadequate food intake after taking hypoglycaemic agents or insulin injections

• Symptoms and signs
  — Hunger feeling, palpitation, shivering and cold sweating, etc
  — Delirium or coma in severe cases

• Management
  — Drink half a glass of fruit juice, eat some sweets or other sugar-containing food immediately to raise the blood sugar level when early symptoms are noticed. Take some more snacks such as biscuits and milk as soon as possible after the symptoms are relieved.
  — Send the patient to hospital if symptoms persist or the patient becomes delirious or comatose.

Others

• Other complications may arise from diabetes mellitus, such as cardiovascular diseases, kidney diseases, cataract and neurological disorders.
Diabetics should pay particular attention to those work situations or requirements that may affect the stability of their blood sugar level, for example

**Physical demand**
— When the workload is heavy and the physical demand is high, our body has to use more sugar to produce energy to meet the needs. However, this can cause a fall in the blood sugar level and may hence lead to hypoglycaemic symptoms.

**Hot environment**
— Working in a hot environment may run the risk of dehydration as a result of excessive sweating, which may then cause the blood sugar level to rise.
— Adequate water intake at work is necessary to replenish the water lost in sweating.
• **Work pattern**

  — Shift work, working at night, irregular work schedules or frequent business travel to different parts of the world across several time zones can disrupt the circadian rhythm and affect insulin secretion, making control of the blood sugar level difficult.

Diabetics engaged in the aforementioned work should monitor and record their blood sugar level carefully. This does not only give a picture about their health condition but also helps doctors evaluate the suitability and effectiveness of therapeutic control.
How the disease affects work

**Treatment aspect**

- Type I diabetics may need to take insulin injections at work, but they should avoid taking the injection in an unhygienic environment to minimize the risk of wound infection.

- Diabetics should take meals at regular hours to avoid hypoglycaemic attacks after injecting insulin or taking oral hypoglycaemic agents. This should be made a rule despite heavy workload.
Complication aspect

- **Hypo- or hyper-glycaemia**
  
  - When diabetes is out of control, hypo- or hyper-glycaemia may occur, affecting adversely conscious level and judgment. In serious cases, the patient may even become comatose. These conditions constitute significant occupational safety and health risks, especially hypoglycaemia in which symptoms can develop in a short period of time and unconsciousness may set in suddenly, compromising the safety of the diabetic and other people.

  - Diabetics should consider the above potential risks carefully when choosing jobs. In particular, medical advice should be sought before being engaging in any work that is inherently hazardous or where the safety of others can be affected by the diabetics’ health condition, such as:
    - Work in isolation
    - Work in remote areas that are far from medical facilities
    - Work in a dangerous environment, e.g. at high altitudes, on water, under water, underground or in confined spaces
    - Operate or work near machinery
    - Drive or operate vehicles
    - Handle hazardous substances, e.g. chemicals, radioactive substances, etc
    - Other safety critical works including fire-fighting, emergency medical care, security, etc

Others

- Diabetes mellitus may lead to other complicating conditions such as cardiovascular diseases, kidney diseases, cataract or neurological disorders, etc, which may affect working abilities. Thus, diabetics should have regular follow-up consultations with their attending doctors so that any complications can be diagnosed and treated early and appropriate advice on safety and health at work can be given.
Diabetics should:

- Understand their own illness
- Set goals for disease control with medical personnel
- Monitor blood sugar level regularly to avoid hypoglycaemia
- Know the therapeutic actions and side-effects of medications
- Follow treatment advice given by medical personnel
- Pay attention to regular meal times and working hours
Although diabetes mellitus is still incurable at present, suitable eating habits and regular exercise coupled with effective treatment could avoid or delay complications, and help maintain good health condition for work.
There is a high risk for diabetics to suffer from hypoglycemic attack while at work. To safeguard your safety at work, the Labour Department has designed for you a “Care with a Loving Heart Card”. By carrying this card with you while at work, your colleagues and health care providers can immediately refer to your health condition and other relevant information on the card and give you appropriate advice and treatment in case of any emergency.
Enquiries:

For enquiries on this booklet or advice on occupational health and hygiene matters, please contact the Labour Department’s Occupational Safety and Health Branch through:

Telephone: 2852 4041
Fax: 2581 2049
Email: enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation can also be found on our website http://www.labour.gov.hk.

Complaints:

If you have any complaints about unsafe workplaces and practices, please call the Labour Department’s occupational safety and health complaint hotline at 2542 2172. All the complaints will be treated with the strictest confidence.

This booklet is prepared by
the Occupational Safety and Health Branch, Labour Department

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This booklet is issued free of charge and can be obtained from offices of the Occupational Safety and Health Branch of the Labour Department. It can also be downloaded from website of the Department at http://www.labour.gov.hk/eng/public/content2_9.htm. For enquiries about addresses and telephone numbers of the offices, please call 2559 2297.

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