



## 認識糖尿病

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### 什麼是糖尿病？

#### What is Diabetes Mellitus?

糖尿病是一組由于胰島素分泌缺陷和/或胰島素作用障礙所致的以高血糖為特征的代謝性疾病。

**Diabetes mellitus**, or simply **diabetes**, is a group of metabolic diseases in which a person has too much sugar in the blood because the pancreas cannot make enough effective insulin.

吃下去的食物中的碳水化合物經過消化後會轉化成葡萄糖被吸收入血液中，葡萄糖是人體所需主要能量來源。

The food we eat is digested and changed into sugar and taken up into our blood. Therefore, everyone has some sugar in their blood. This sugar provides energy for the body to live and grow.

胰島素的功能為調節組織細胞（包括肝臟細胞跟肌肉細胞）吸收葡萄糖的主要激素，當有胰島素分泌失調時，身體的血糖便會升高。

Insulin helps move sugar from the blood into the body cells, like liver and muscle. When there is not enough insulin in the body, too much sugar stays in the blood.

如果你是身體肥胖者，尤其是集中在腹部肥胖的人，胰島素便無法正常運作，這就叫做“胰島素抗性”。

If you are overweight, especially if you are carrying excess fat around your waist, insulin will not work so well – this is called “insulin resistance”.

一般正常人的血糖為4-7mmol/L

Normal blood sugar level = 4 to 7 mmol/L

### 糖尿病診斷

#### Diagnosis of diabetes

糖尿病是由病患的症狀跟血糖指數來診斷的。以下為幾種診斷標準：

The diagnosis of diabetes can be made based on a person's symptoms and blood sugar readings. A doctor can diagnose diabetes in one of the following situations:

1. 糖尿病症狀（高血糖所導致的多飲、多食、多尿、體重下降、精神不振）加隨機血糖高於 11.1mmol/L  
Presence of diabetes symptoms such as polyuria (passing frequent, large amount of urine), increased thirst, weight loss, lethargy or recurrent infections; with a random blood sugar of >11.1 mmol/L
2. 空腹血糖高於 7.0 mmol/L  
Fasting blood sugar >7.0 mmol/L
3. 在口服糖耐量試驗中，口服75克葡萄糖2小時後，血糖在11.1 mmol/L以上  
Plasma blood sugar of >11.1 mmol/L 2 hours after taking a 75g glucose load, in a glucose tolerance test

4. 糖化血紅蛋白 (HbA1C) 在6.5或以上  
HbA1c (glycated haemoglobin) of >6.5% (48 mmol/mol)

## 糖尿病種類

### Types of Diabetes Mellitus

1. 1型糖尿病 Type 1 Diabetes Mellitus
2. 2型糖尿病 Type 2 Diabetes Mellitus
3. 妊娠期糖尿病 Gestational Diabetes Mellitus (GDM)
4. 遺傳性胰島素抗拒 Genetic Diabetes
5. 其它包括化學或藥物導致，荷爾蒙失調，胰臟疾病  
Others including medications such as steroids, endocrinopathies, pancreatic disorders

## 1型糖尿病

### Type 1 Diabetes Mellitus

**1型糖尿病**是一種自體免疫性疾病。在這情況下，身體的免疫系統對體內生產胰島素的β細胞做出攻擊，最終導致體內無法生產胰島素。

Type 1 diabetes is caused by an auto-immune reaction, where the body's defense system attacks the insulin-producing cells in the pancreas. As a result, the body can no longer produce the insulin it needs.

患者病狀通常出現在兒童或青少年時期，患者需要依賴注射外源性的胰島素來控制體內的血糖。如沒有胰島素，最終會導致死亡。

The disease can affect people of any age, but it usually occurs in children or young adults. People with this form of diabetes need injections of insulin every day in order to control the levels of glucose in their blood. Without insulin, people with type 1 diabetes will die.

1型糖尿病主要症狀為：

Type 1 diabetes symptoms such as:

- 口渴 abnormal thirst and dry mouth
- 多尿 frequent urination
- 精神不振 extreme tiredness/lack of energy
- 容易飢餓 constant hunger
- 體重下降 sudden weight loss
- 傷口愈合緩慢 slow-healing wounds
- 經常感染 recurrent infections
- 視力模糊 blurred vision

1型糖尿病患者如藥物控制適當和密切監測血糖，保持運動，注意健康飲食，也能夠有正常的生活。

People with type 1 diabetes can lead normal, healthy lives through a combination of daily insulin therapy, close monitoring, a healthy diet, and regular physical exercise.

## 2型糖尿病

### Type 2 Diabetes Mellitus

2型糖尿病是最常見的糖尿病。2型糖尿病過去主要在超過40歲的成年人中發病，而今卻越來越常在未成年人中發生。相對胰島素缺乏，2型糖尿病患者其主要特徵為胰島素抵抗，和高血糖。

Type 2 diabetes is the most common type of diabetes. It usually occurs in adults, but is increasingly seen in children and adolescents. In type 2 diabetes, the body is able to produce insulin but it is either not sufficient or the body is not responding to its effects, leading to a build-up of glucose in the blood.

2型糖尿病患者早期病症並不明顯，因此2型糖尿病多在病情進展多年後方被診斷。在這段時間，高血糖已逐漸對身體器官造成傷害。很多患者是在出現糖尿病併發症候才被診斷出2型糖尿病。

People with type 2 diabetes may remain unaware of their illness for a long time because symptoms may take years to appear or be recognized, during which time the body is being damaged by excess blood glucose. Many people are diagnosed only when complications of diabetes become evident.

以下為造成2型糖尿病的危險因子

There are several important risk factors. These include:

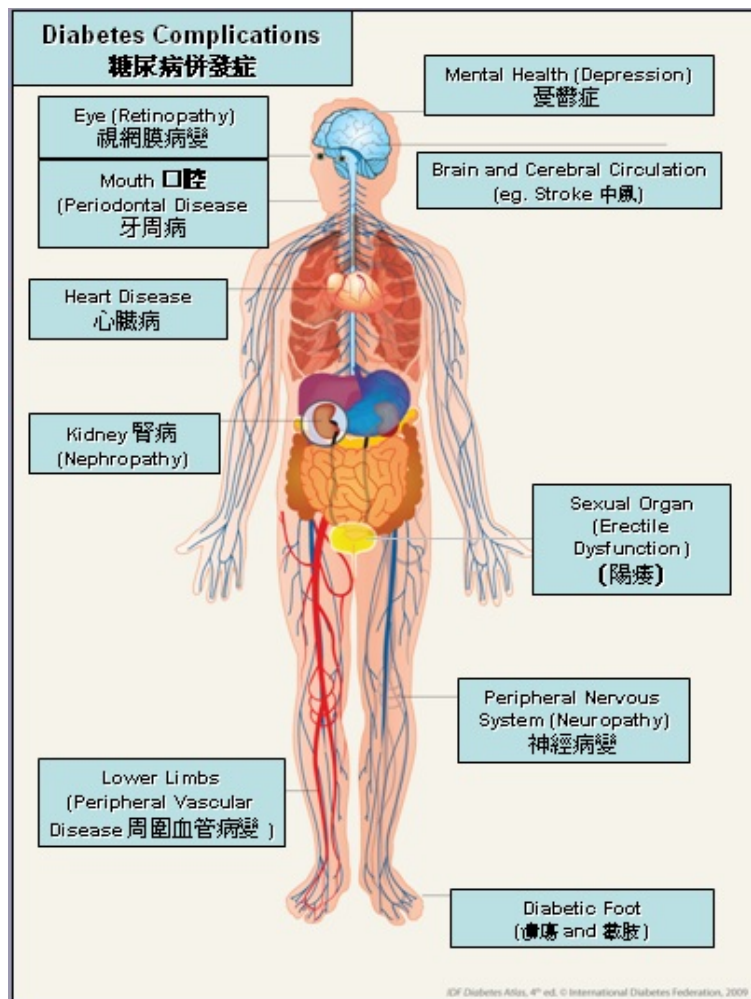
- 肥胖 obesity
- 飲食不當 poor diet
- 體能活動不足 physical inactivity
- 年齡增長 increasing age
- 家族病史 family history of diabetes
- 種族 ethnicity

與 1型糖尿病不同，2型糖尿病患者不需要依賴胰島素生存。但多數病患也需要口服藥物，飲食控制、體育鍛煉、減輕體重達到控制血糖、預防併發症的目的。

In contrast to people with type 1 diabetes, the majority of those with type 2 diabetes do not usually require daily doses of insulin to survive. However, they may be prescribed insulin together with oral medication, a healthy diet and increased physical activity to manage their conditions.

## 糖尿病併發症

### Diabetes complications



糖尿病會導致許多不同的併發症也連帶的增加許多種嚴重疾病的風險。

People with diabetes have an increased risk of developing a number of serious health problems.

長期的高血糖會導致各重大器官病變，例如心臟，血管，眼睛，腎臟，跟神經。還有糖尿病者也有較高的感染率。

Consistently high blood glucose levels can lead to serious diseases affecting the heart and blood vessels, eyes, kidneys, and nerves. In addition, people with diabetes also have a higher risk of developing infections.

已開發國家中，糖尿病是造成心血管疾病/**冠心病**，失明，**慢性腎臟病**和截肢的元兇。控制血糖，血壓，和膽固醇可以減緩及預防糖尿病併發症的產生。

In almost all high-income countries, diabetes is a leading cause of cardiovascular disease, blindness, kidney failure, and lower limb amputation. Maintaining blood glucose levels, blood pressure, and cholesterol close to normal can help delay or prevent diabetes complications. People with diabetes need regular monitoring for complications.

## 糖尿病治療

### Treatments for diabetes

糖尿病的治療以平衡飲食，運動，藥物來控制血糖在正常範圍內。保持正常血糖可以預防併發症的產生。

Diabetes is treated by “balancing” your food, exercise and insulin or tablets to keep your blood sugar level as close to normal as possible. A normal blood sugar helps one to keep well and helps prevent complications from diabetes.

糖尿病治療包括

Treatment of Diabetes include:

#### 1. 口服藥物 *Medications/Tablets*

1. 雙胍類藥物 biguanides (metformin)，磺脲類藥物 sulphonylurea (glipizide, gliclazide, glibenclamide)，噻唑烷二酮類藥物 thiazolidinedione (pioglitazone)， $\alpha$ -糖苷酶抑制劑 (acarbose)

#### 2. 胰島素 *Insulin*

1. 速效胰島素類似物 (rapid acting)、短效胰島素 (short acting)、中效胰島素 (intermediate acting)、長效胰島素 (long acting) 和預混胰島素 (pre-mixed)
2. 胰島素需要保存在冰箱中。不能被陽光直接照射或冷凍。通常胰島素在冰箱中可以儲存至一個月。  
Store your insulin in the refrigerator (2-8C) away from freezer or freezing coils. It should not be exposed to excessive heat or direct sunlight and should never be frozen. You can keep the insulin you are using out of the fridge for up to a month.
3. 旅行中，胰島素需要放置在涼快的地方。千萬不可以將胰島素放在車內的手套箱。  
When travelling keep your insulin vials/cartridges in their cartons in as cool a place as possible. Never keep insulin in the car glove-box.
4. 如需要出國旅行，建議帶雙倍所需分量的胰島素以防遺失和破損。胰島素需放在手提行李中。  
When travelling away from home or overseas for short periods, try to take at least twice your calculated insulin requirements to allow for breakages etc – be prepared for the possibility of lost or stolen baggage by dividing your insulin supply in different luggage. Always take insulin on hand-carried luggage. Always keep a spare syringe or pen and insulin.

3. 其他新一代藥物 例如腸泌素模擬物類的藥品 (*incretin-mimetic group*): 目前此類藥物在新西蘭並沒有支付  
Other (newer treatment, incretin-mimetic group: not funded in new Zealand)

#### 4. 改變生活方式 *Lifestyle modification*

1. 戒煙非常重要  
**Stop smoking** is important
2. 飲食 – 低碳水化合物，低糖。選擇低升糖指數飲食 (glycaemic index = GI)。避免經常外食。  
**Diet** – low carbohydrate, low/avoid simple sugar, control portion of carbohydrate. Choose food with low glycaemic index (GI). Avoid frequent eating out/fast food.
3. 健康飲食建議：注意分量，避免暴飲暴食。早餐尤其重要，少油脂，減低酒精飲料，高纖維，多水果蔬菜。  
Tips for healthy eating: watch the amount, don't overeat; eat 3 meals of similar size, always eat breakfast, eat less fat, limit alcohol (high in calories), choose food high in fibre (wholegrain bread, breakfast cereals), plenty of vegetables, raw fruit or tinned fruit with no added sugar, legumes such as kidney beans, soy beans and lentils, seeds and nuts
4. 運動 – 一週只少100-150分鐘的有氧運動跟阻力訓練。例如慢跑，快走，游泳，騎腳踏車，割草，跳舞  
**Exercise** – at least 100-150 minutes of aerobic +/- resistance exercises in a week. Examples: jogging, brisk walking, swimming, cycling, mowing the lawn, dancing
5. 減重 – 保持 BMI 低於 25，如果是華人則目標為 23 以下  
Weight loss – important to keep BMI < 25, even better if it's <23 kg/m<sup>2</sup> (for Asian)

#### 5. 減重手術 *Bariatric surgery*

### 其他控制糖尿病要點

#### Other aspects of managing diabetes

1. 控制血壓在 130/80mmHg 以下  
Control high blood pressure to <130/80 mmHg
2. 定期眼科檢查糖尿病是否有視網膜病變，尿液檢查是否有蛋白尿(*proteinuria*)及白蛋白尿(*albuminuria*) 跟腳底神經病變。  
Very important to have regular retinal check, urine test to detect albumin in urine ("protein leak"), and testing the nerves in feet
3. 腳底照顧  
Foot care
4. 低血糖 — 當血糖低於4.0 mmol/L，症狀包括頭暈，頭痛，視線模糊，口舌發麻，臉色發白，冒冷汗，手腳顫抖，心悸。當有這些症狀出現時，需要馬上測量血糖。糖分補充是最好的治療方法（例如：糖水，果汁，蜂蜜，果醬）。  
Hypoglycaemia ("Hypo") – low blood sugar, happens when blood sugar drops below 4.0 mmol/L. Symptoms of "Hypo" include light-headedness, headache, blurred vision, pins & needles of lips/tongue, pale, sweaty, trembling hands, thumping heart, hungry, weak and trembling knees. When this happens, it is important to test the sugar level. **GLUCOSE IS BEST TREATMENT** (glucose powder in water, jam, honey or sugar)

### 糖尿病篩檢

#### Screening/Prevention

1 型糖尿病是不需要定時篩檢

No need for routine screening for type 1 DM

如有患2 型糖尿病的危險因子，例如家族病史，過重，高血壓，高膽固醇，跟體能活動不足，早期篩檢是非常重要的。如沒有危險因子，建議45歲過後每年定期進行篩檢。

Early screening for those with increased risk for type 2 DM, e.g. strong family history, BMI>25, physical inactivity, hypertension, hyperlipidaemia. Without risk factors can start screening on a yearly basis when age is >45 years.

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更多中文資訊：

Additional information ([Diabetes Management](#)) in PDF

