



## 預防冠心病 – 認識危險因素

By Paul Cheng

From Dr Andrew To, Cardiologist, WDHB

### Prevention of coronary artery disease – understanding risk factors

預防心血管疾病的核心是要了解心血管疾病的危險因素。簡單來說，個別病人動脈粥樣硬化的程度，嚴重性和發病時間是取決於這些危險因素。

Tackling cardiovascular risk factors is central to the prevention of cardiovascular disease. In simple terms, risk factors determine how early and how severe atherosclerosis occurs in an individual patient.

有些危險因素是不可更改的，但許多危險因素是可變的。

Some risk factors are not modifiable, but many risk factors are changeable.

不可更改的危險因素 (Non-modifiable risk factors)

- Advanced Age 高年齡
- Male Gender 男性
- Family history 家族病歷
- Personal history 個人病歷

可更改的危險因素 (Modifiable risk factors)

- Smoking 吸煙
- High blood pressure 高血壓
- High cholesterol 高膽固醇 / 高血脂
- Diabetes 糖尿病
- Obesity 肥胖症
- Physical inactivity 缺乏運動

我們經常提到的“三高”，其中包括高血壓，高膽固醇（高血脂），高血糖（糖尿病）。這都是心血管疾病最重要但可更改的危險因素。

In Chinese, we often refer to the “three-highs”, which include high blood pressure, high cholesterol, and high blood sugars (diabetes); three of the most important modifiable cardiovascular risk factors.

一些人提到的“三高一低”，另指對我們有害的西方飲食：高鹽，高糖，高脂肪，低纖維。

Interestingly, the same description “three-highs” is combined with “one-low” in describing our poor Western diet, with high salt, high sugar, high fat, and low fibre.

## 不可更改的危險因素 (Non-modifiable risk factors)

有些危險因素是不能改變的。

Some risk factors are not changeable.

- 高年齡 – 動脈粥樣硬化隨著年日的嚴重，所以發病通常在較年長的人。  
Advanced age – Atherosclerosis progresses with time, so disease is more common in those who are older.
- 男性 – 中年男性心臟病發的風險比女性高 2-5 倍。  
Male gender – The risk for having a cardiac event is 2-5 times higher for middle-aged men than women.
- 個人病歷 – 那些以前有過心臟病，中風，周圍血管疾病的病人，復發的風險比其他人要高得多。  
Personal history – Those who have had previous heart attack, stroke, peripheral vascular disease are at much higher risk for a recurrent event.
- 家族病歷 – 有早發心血管疾病家族史的人，風險增加一倍。  
Family history – Having a family history of premature cardiovascular disease doubles the risk of developing a cardiovascular event.

對於那些擁有這些不可改變危險因素的人，我們不但必須要提高警覺，注意任何類似心臟病的症狀，還需要更積極地處理那些可改變的危險因素。

For those who have these non-modifiable risk factors, we have to be more vigilant for any symptom that resembles heart troubles. One will also need to be more aggressive in treating those modifiable risk factors.

## 可更改的危險因素 (Modifiable risk factors)

吸煙可能是心血管疾病最重要的危險因素。吸煙者心血管病發的風險是非吸煙者的2-3倍。尼古丁收縮血管，增加心率和血壓。一氧化碳減少血液的攜氧能力，損害動脈內壁。吸煙使血液粘稠，降低高密度脂蛋白膽固醇（好膽固醇）。

Smoking is perhaps the biggest risk factor of cardiovascular disease. Smokers have a 2-3 times the risk for having a cardiovascular event. Nicotine constricts blood vessels and increases heart rate and blood pressure, and the carbon monoxide reduces the oxygen carrying capability of blood, as well as damages artery lining. Cigarette smoking makes blood thick and sticky and lowers HDL (the good cholesterol).

戒菸是很難，但利用各種的幫助是可以實現的。請參考[相關吸煙及肺部疾病的文章](#)。

Stopping smoking can be hard but help is available. Please refer to the previous week's article on smoking related lung diseases.

高血壓是極為常見的。它導致動脈壁損傷，增加心臟工作量。如果不加控制，可能導致心臟衰竭。在現今時代，高血壓成因大多數是我們的生活方式。

High blood pressure (hypertension) is extremely common. It leads to damage of artery wall, increases workload of the heart, and can lead to heart failure if uncontrolled. In the modern age, high blood pressure is caused by our lifestyle, with some rare exceptions.

控制血壓最好的方法是通過生活方式的改變：

Controlling blood pressure is therefore best done by lifestyle changes, including:

- Reduce weight 減少體重
- More Exercise 多運動
- Reduce Salt 減少食鹽
- Reduce Alcohol 減少酒精

鹽攝取量是血壓問題最重要的因素。大多數新西蘭人耗鹽量比建議的 3-6 克鹽多，大約每人每日平均 9 克。一茶匙鹽包含大約 6 克鹽。

Salt intake is the most important contributor to our blood pressure problem. Most New Zealanders consume way more salt than

the recommended daily intake of 3-6g of salt, 9g on average. A teaspoon of salt contains approximately 6g.

在食品包裝通常記錄鈉成分，等同的每日建議攝取量是 1150-2300 毫克鈉。

In food packaging, the amount of sodium is often recorded instead of salt, and the equivalent recommendation is 1150-2300mg of sodium per day.



大多數人都不自覺地攝取太多的鹽。含大量鹽的食品，包括加工食品，如香腸，臘肉，薯片；現成的飯菜，如包裝湯，方便麵和一些穀物；以及各種醬料。外出就餐，包括外賣和快餐店，是鹽攝入過多的最常見原因。食品包裝印上的營養價值，告訴我們食物中含鹽到底有多少。快餐店也會在其網站發布他們食品的營養信息。

Most people consume too much salt without being aware of it. Foods that contain a large quantity of salt include processed foods such as sausages, bacon, potato chips; ready-to-eat meals including packaged soups, instant noodles and some cereals; and various sauces. Dining out, including takeaways and fast food outlets, is a common cause of excessive salt intake. It is often useful to check the nutritional values on food packages to check exactly how much salt our foods contain. Some fast food outlets publish their nutritional information on their websites.

如果這些方法不能控制血壓，藥物是高效果，副作用的好方法。使用哪些藥物，則要醫生對個別病人度身訂造處方，往往用上不止一種類型的藥物。

If blood pressure is not controlled with these methods, medications can be highly effective with few side effects. Which medications to use are individualised and often more than one type of medications may be necessary.

高膽固醇（高血脂）是心血管疾病的主要危險因素。膽固醇是人體結構組成部分，參與細胞的製造和修理。

High cholesterol (Hypercholesterolemia) is a major risk factor for cardiovascular disease. Cholesterol is the building blocks of life, involved in cell manufacture and repair.

測試膽固醇水平，我們分開膽固醇的幾個組分。低密度脂蛋白膽固醇（LDL）是動脈粥樣硬化的罪魁禍首，高水平會導致膽固醇在動脈內壁積聚。相反，高密度脂蛋白膽固醇（HDL），將過量的 LDL 帶到肝臟回收或銷毀；因此，高水平是有益的。甘油三酯是能量的重要來源，但過剩的會儲存為脂肪；高水平是有害的。

In testing cholesterol levels, we separate several fractions of cholesterol. The commonly known LDL, low-density lipoprotein, is the culprit for atherosclerosis as a high level leads to the build up of cholesterol plaque in artery walls. This contrasts with HDL, high-density lipoprotein, which takes excess LDL back to the liver to be recycled or destroyed. Therefore, a high level of HDL is beneficial. Triglycerides are an important source of energy but excess is stored as fat, hence a high level is harmful.



每減少 1 mmol/L 的低密度脂蛋白膽固醇，心血管疾病的機會便減少 30 – 35 %。

A 1.0 mmol/l reduction in LDL leads to a 30-35% reduction in coronary artery disease and stroke.

與常見的想法相反，血液中的膽固醇大多是從飲食中的飽和脂肪攝入後於肝臟生產（70%），其餘部分才是直接源於食物中的膽固醇。

Contrary to common beliefs, blood cholesterol originates largely (70%) from the liver where cholesterol is produced, in response to dietary saturated fat intake. The rest of the cholesterol originates from our foods.

因此，飲食中的飽和脂肪比膽固醇更為有害。控制低密度脂蛋白膽固醇的方法就是減少我們飲食中的飽和脂肪。

Hence, the cholesterol in food is not as harmful as saturated fat in diet. The way to control our LDL is by reducing saturated fat in our diet.

- 飽和脂肪 – 包括動物脂肪，椰子油和棕櫚油。  
Saturated fat includes animal fat, coconut and palm oils.
- 多元不飽和脂肪; 奧米加3 – 包括向日葵油，玉米油，大豆油，堅果油和魚油。  
Polyunsaturated fat (including omega 3) includes sunflower, corn, soybean, nuts and fish oils.
- 單元不飽和脂肪 – 包括橄欖油，菜籽油，花生油，葵花籽油，牛油果油。  
Monounsaturated fat includes olive, canola, peanut, sunflower, avocado oils.

增加高密度脂蛋白膽固醇的主要途徑是增加運動，以及少量酒精。

The main ways of increasing HDL are by increasing exercise level as well as small amount of alcohol.

糖尿病的病因是我們身體無法應付飲食攝入的糖。大多數情況下，肥胖是起因，引至身體對胰島素有阻抗性。高血糖導致血管壁損傷，增加血液粘稠度，隨著年日，導致心血管疾病，中風，周圍血管疾病；以及微血管損害，可導致失明，腎衰竭和神經損傷。這個主題將在稍後的日期討論。

Diabetes is the condition where the body is unable to cope with our dietary sugar intake. The majority of cases relate to obesity and the resultant insulin resistance. High blood sugars results in blood vessel wall damage, increase blood stickiness; and over time, causes cardiovascular disease, stroke, peripheral vascular disease; as well as micro vessel damages that can cause blindness, kidney failure and nerve damage. This topic will be reviewed at a later date.

肥胖是常見的。每兩個新西蘭人就有一個肥胖或超重。肥胖的原因是熱量攝入和支出不平衡，因此，反映現代人常有的問題，攝入過多食物，沒有做足夠的運動。對健康的影響遠遠超過心血管疾病。目前糖尿病「疫症」也是肥胖引起。

Obesity is common. One in two New Zealanders are obese or overweight. Obesity relates to the imbalance of caloric intake and expenditure, and therefore reflects the common problem of consuming too much food and not doing enough exercise. Its health impact goes far beyond that of cardiovascular disease. It is the root cause of the current diabetes epidemic.

身高體重指數 (BMI) 是常用的肥胖指標。計算方法是以體重 (公斤) 除以身高的平方 (米)。指數超過30便是肥胖。

A commonly used measure of obesity is the body mass index (BMI). It is calculated by dividing the body weight (in kg) by height squared (in m). An index of over 30 is considered obese.

在亞洲人，腰圍比身高體重指數更為重要，因為腹部脂肪對心臟健康特別有不良影響。男性周長多於 90 厘米（35 寸），女性周長多於 80 厘米（31 寸）都是不正常。

In Asians, the waist circumference may be more important than the BMI itself, as abdominal fat carries a worse adverse effect on heart health. A circumference of >90cm (35 inch) for males and >80cm (31 inch) for females is considered abnormal.

缺乏運動 Physical inactivity 請參見[另一篇文章](#)。

## 健康飲食 (Healthy eating)

健康飲食並非要放棄我們所有喜歡吃的東西，而是要明智地選擇正確的食物和正確的量。食品金字塔一個很有用的概念，其中說明不同食物類別的所需攝量，目的是要達到正確的平衡。含高飽和脂肪，鹽，精製糖的食品，是在金字塔的頂端，是要消耗較少的食品；相比，在金字塔底部的健康食品，如蔬菜水果，全穀物和健康油，是要消耗較多的。

Healthy eating is not about cutting out everything we enjoy eating, but about being smart in choosing the right foods in the right amounts. A useful concept is the food pyramid, where different food groups are included in varying quantities in order to achieve the right balance. Foods high in saturated fat, salt, or refined sugars are at the top of the pyramid. We should consume less of those, compared to healthy foods at the bottom of the pyramid, such as vegetables and fruits, whole grains and healthy oils.



## 早期檢測和風險評估 (Early Detection and Risk Assessment)

預防冠狀動脈疾病的方法是盡量減少心血管疾病的危險因素。這適用於曾患有心臟病的人，也適用於從未有過心臟病的人。對一些未發病的人來說，早期發現是最重要的！

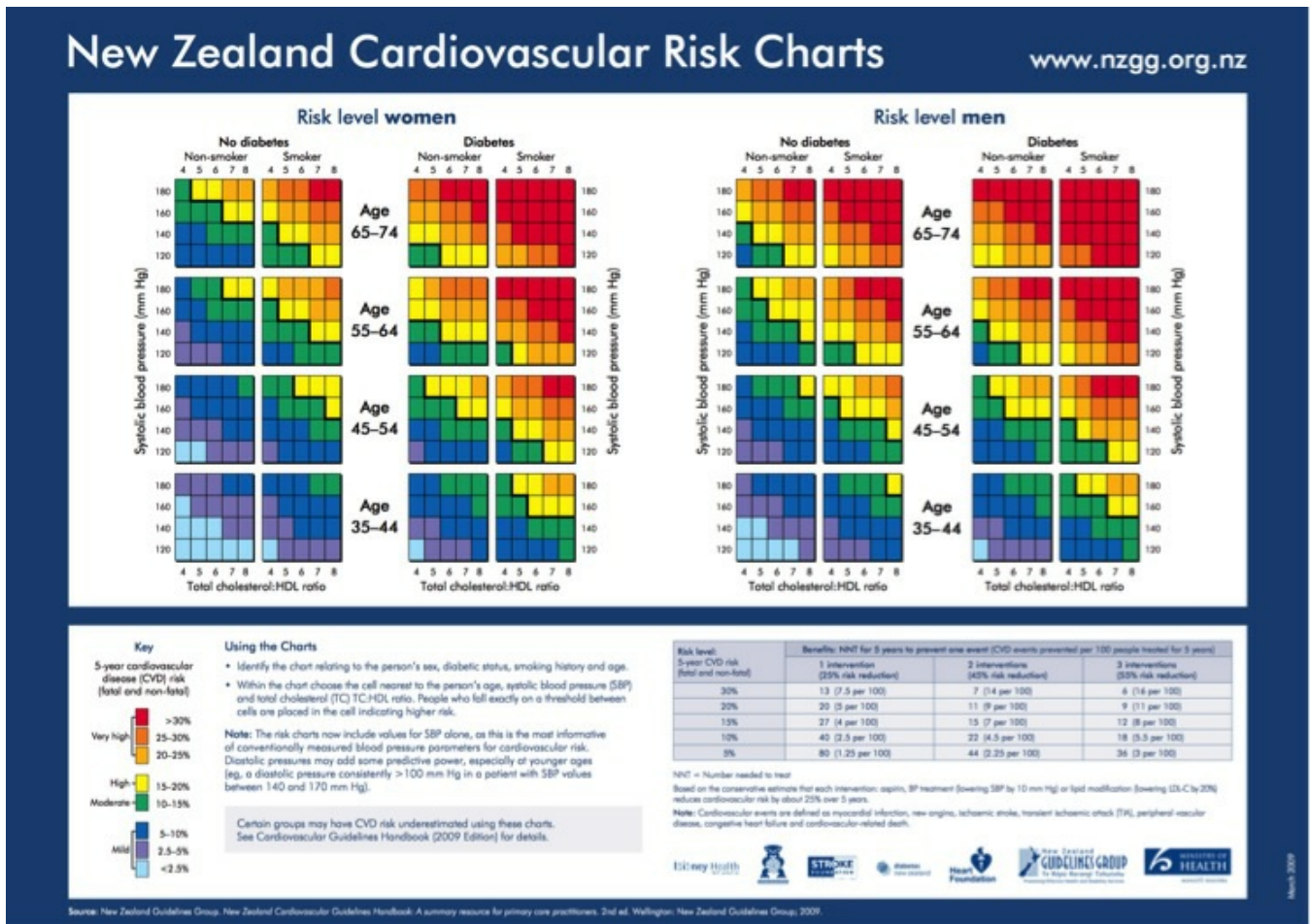
The way to prevent coronary artery disease is to minimize these cardiovascular risk factors. This applies to people who have had a cardiac event, as well as those who have never had an event. In the latter group, early detection is paramount!

認識心臟病的早期症狀，能及早診斷疾病。心臟的疼痛通常是在中央胸部的不適，但也不一定；有時下巴，肩，胃，甚至頸部的疼痛或不適，可能是源於心臟。有很多病人的症狀可能是很輕微的，不容易識別出來。如果您遇到任何這些症狀，應立即告訴您的家庭醫生或心臟病醫生。

Recognizing the early symptoms of heart troubles may lead to early diagnosis. Classically, heart pain may present as a central chest discomfort, but not necessarily. Sometimes pain or discomfort in the chin, shoulder, stomach or even neck may originate from the heart. Some of these symptoms may be mild, and is often not identified immediately. If you experience any of these symptoms, seeing your GP or a cardiologist is very important.

對於那些沒有任何症狀的病人，心血管風險評估，考慮個別病人的風險因素，有助於確定那些病人需要更積極的控制危險因素，以及對心臟作進一步檢查。新西蘭心血管風險圖是家庭醫生常用的工具。

In those without any symptom, cardiovascular risk assessment takes into account the individual patient's risk factors. Such risk assessment helps determine the need for more aggressive risk factor control and further cardiac investigations. The New Zealand Cardiovascular Risk Charts are commonly used tool in General Practice.



在一些個別情況，病人可能需要進行運動試驗，甚至心臟電腦斷層造影。心臟電腦斷層造影是一種新技術，不需要侵入性的在心臟內放置導管便可以掃描冠狀動脈，了解冠狀動脈粥樣硬化的程度。因為這是新技術，有其特殊局限性，病人可以跟專科於心臟電腦斷層造影的心臟科醫生探討。

In some individual cases, patients may benefit from undergoing exercise tests, or even CT coronary angiography. CT coronary angiography is a newly available technology that can non-invasively visualize our coronary artery anatomy, and diagnose coronary artery atherosclerosis without the need of inserting cardiac catheters invasively. Because this technology is new but has its own limitations, speaking to a cardiologist specializing in CT coronary angiography may be useful.