

# Metabolic syndrome? 代謝候群症

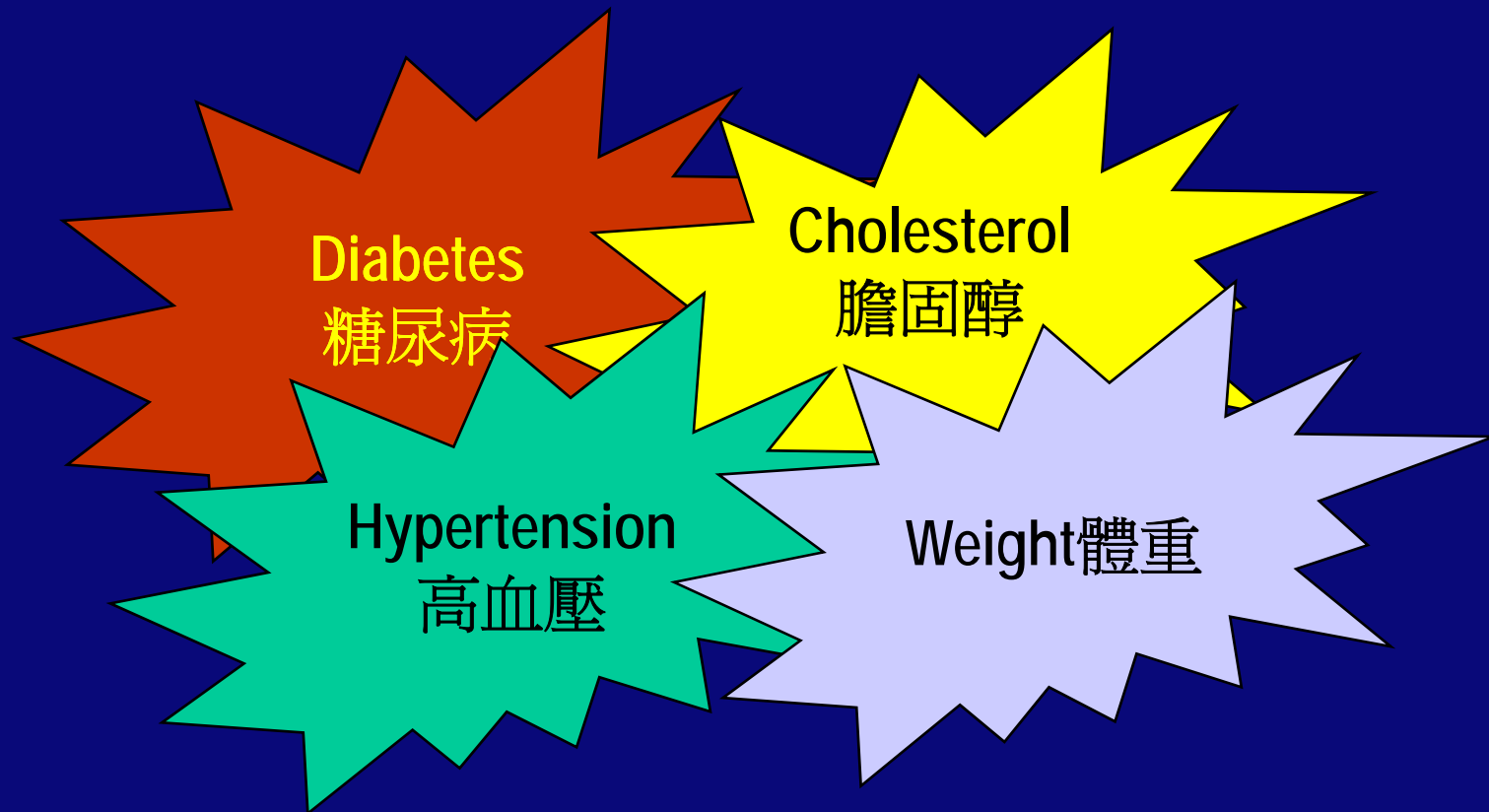
What in the world is that? 這是甚麼?



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# Metabolic Syndrome

## 代謝候群症



# Metabolic Syndrome - 3 or more of: 代謝候群症 - 有以下3項或以上的:

- Central Obesity 中央肥胖 - Waist circumference 腰圍  
Male 男 > 90cm (35.4 in.), Female 女 > 80 cm (31.4 in.)
- Triglycerides 三酸甘油脂  $\geq 150$  mg/dl (1.7 mmol/L)
- Blood pressure 血壓  $\geq 130/85$  mm/HG
- Fasting blood glucose 空腹血糖 > 110 mg/dl (6.1 mmol/L)
- HDL cholesterol 高密度膽固醇  
Male 男 < 40 mg/dl (1.0 mmol/L), Female 女 < 50 mg/dl (1.3 mmol/L).

# Dr. Santos' Metabolic Syndrome

## 山度士醫生的代謝候群症

- 無運動 **No exercise**
- 過重 **Overweight**
- 吃太多脂肪及糖  
**Eating too much fat and sugar**
- 吃太少纖維, 生果及蔬菜  
**Eating too little fiber, fruits & vegetables**
- 吃太多 **Eating too much**
- 看太多電視 **Watching too much TV**



# 香港頭三號殺手

## HK 3 Champions - 2004

| 病<br>Disease         | 死亡人數<br>No. of deaths | PYLL    |
|----------------------|-----------------------|---------|
| 癌症<br>Cancer         | 11.791                | 102.316 |
| 心臟病<br>Heart disease | 5.866                 | 23.177  |
| 中風<br>Stroke         | 3.416                 | 12.975  |

# 疾病危機 Disease Risks – 15 yrs >

| Disease risk                              | Male (%) | Female (%) |
|---|----------|------------|
| 超重 Overweight<br>and obesity              | 42.5     | 35.9       |
| 中央肥胖<br>Waist obesity                     | 16.6     | 24.5       |
| 高血壓<br>Hypertension                       | 30.1     | 24.8       |
| 糖尿病 Diabetes<br>(other 5%<br>undiagnosed) | 5.2      | 5.7        |
| 膽固醇<br>Cholesterol                        | 8.4      | 8.4        |

# 行為危機 – 2005 (18-54年)

## Behavioural Risks – 2005 (18-54 yrs)

| 行為 Behavior                       | 男性 Male (%) | 女性 Female (%) |
|-----------------------------------|-------------|---------------|
| 蔬果不足 Not<br>enough fruits/veggies | 80.1        | 75.8          |
| 運動不足<br>Low exercise              | 17.9        | 21.2          |
| 吸煙<br>Smoking                     | 24.5        | 5.7           |
| 飲酒 Binge<br>drinking              | 15.3        | 3.4           |

# DIABETES 糖尿病





# Diabetes in the world in 2025

## 2025年世界性糖尿病

**300 million cases**

三億宗個案

**37.6 million in China**

中國: 三千七百六十萬

**57.2 million in India**

印度: 五千七百二十萬



# Main causes of death in diabetic patients - Hong Kong

## 香港糖尿病患者主要致命因素

- **Coronary heart disease** 心臟病
- **Stroke** 中風
- **Renal failure** 腎衰竭
- **Cancer** 癌症



# 血糖正常值

## Blood Glucose Norms

### 類別 Classification

### 血糖值 Blood Glucose\* mg/dL (Mmol/L)

正常 Normal

Less than 100 (5.5)

糖尿病先兆 Prediabetes

100 – 125 (5.5 - 6.9)

糖尿病 Diabetes

126 or higher (7 >)

200 or higher (non-fasting) (>11)

\*Fasting 4+ hours



ADA, Diabetes Care, November, 2003

# Diabetes and diet

## 糖尿病與飲食



# Diabetes and diet

## 糖尿病與飲食



- 多些纖維 - 蔬菜、全麥

More fibre - vegetables, whole grains

- 低脂 Low fat

- 豆夾類: 豆、黃豆、黑豆、雞心豆、腰豆、扁豆及果仁類

- Nuts Legumes: beans, soybeans, black beans, chick peas, peas, kidney beans, lentils

避免糖、糖果、精製食品、太甜的生果

- Avoid sugar, sweets, refined foods, too sweet fruits

# Diabetes and Herbs

## 糖尿病與草本植物



# 苦瓜 Bitter Melon

- Momordica charantia
- 樣貌不美綠色不平的瓜

Ugly cucumber covered with bumps

- 含 *charantin* (一種令血糖低的因子), 及含多 *P* (類似胰島素的分子)

Contains *charantin* (hypoglycemic agent), and *polypeptide P* (insulin-like molecule)

- 兩安士鮮果汁 Two ounces of fresh juice
- 非常苦 Really bitter

Daily suggested doses

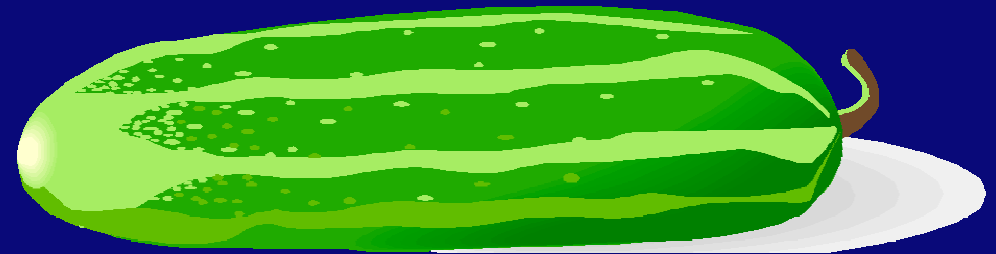
每日份量的見意:

50 - 150 ml fresh juice

鮮汁50-150毫升

3 - 15 g powder 粉末狀 3-15克

300 - 600 mg extract 精華 300-600豪升



# Gymnema Sylvestre

- 一種在中及南印度的深林裏的樹葉抽取的精華  
Extract from leaves found in tropical forests of central and southern India
- 可提高在第一及第二形糖尿病的胰島素生產  
may enhance endogenous insulin production in Type 1 and 2 diabetics
- 服用糖尿藥的病人需要減少劑量  
patients on hypoglycemic drugs had to decrease dosage
- 增加胰島及  $\beta$  細胞  
May increase the number of islets of Langerhans and
- 每日 400 毫克 400 mg/day (extracts with 24% of gymnemic acids)





**What is Metabolic Syndrome?**

**甚麼是代謝候群症？**

**How many people have diabetes in Hong Kong?**

**在香港有幾多人患糖尿病？**

**What are the three main death-champions in HK?**

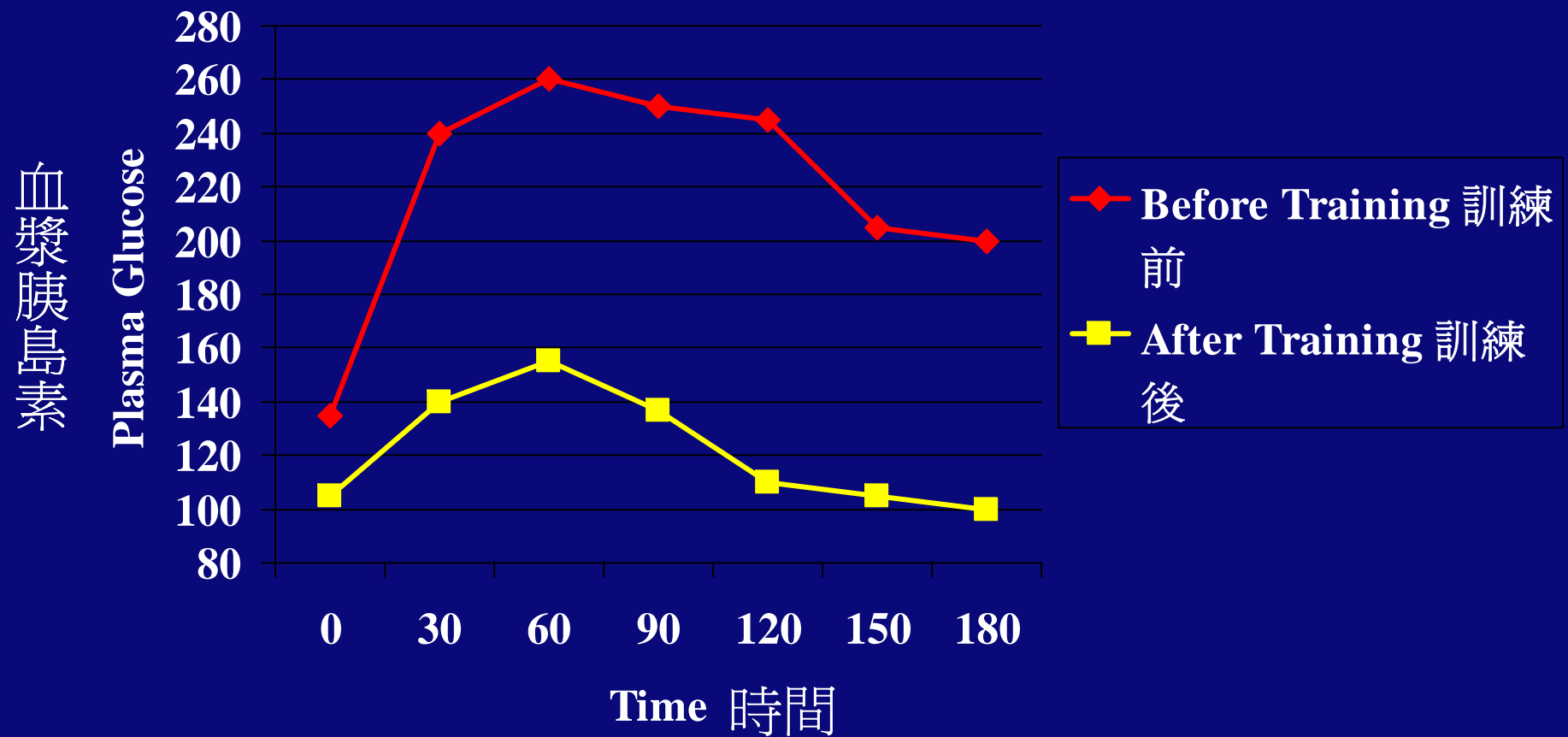
# Diabetes and Exercise

## 糖尿病與運動



# 12 Months of Exercise Training

## 12 個月運動訓練



# 阻力訓練 與糖尿病

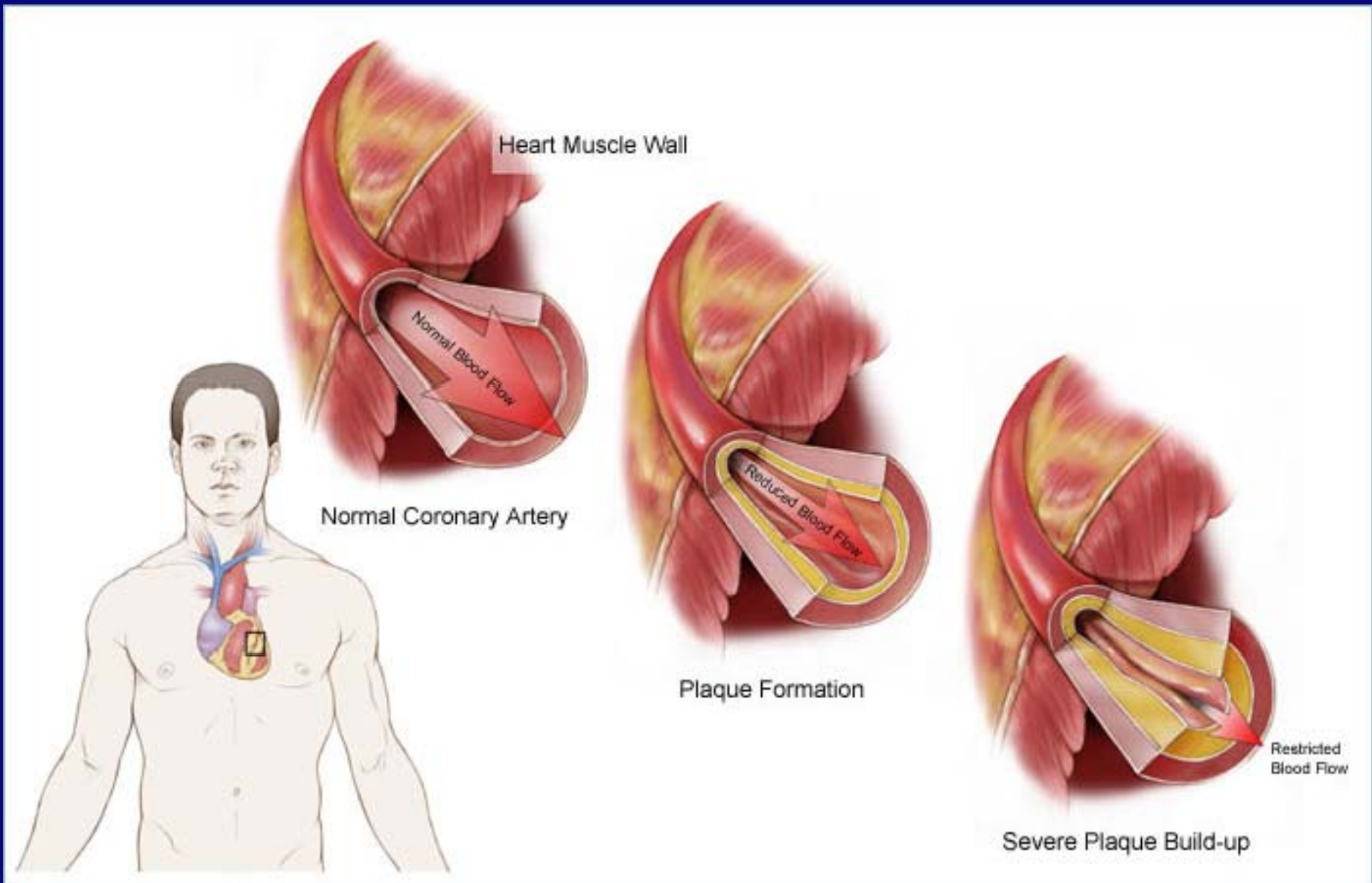
## Resistance Training and Diabetes



- 阻力訓練改善女性二型糖尿病人之血糖控制Resistance training to improves glucose control in women with type 2 diabetes
- 胰島素的敏感度可改善如果
  - 減肚臍的脂肪
  - 增加肌的密度
- Improved insulin sensitivity is related to:
  - loss of abdominal adipose tissue
  - and to increased muscle density

Diabetes Care, Nov. 2003

# Cholesterol 膽固醇



# Cholesterol and fiber

## 膽固醇及纖維

- 燕麥 Oatmeal
- 葡萄乾 Raisins
- 豆奶 Soy bean milk
- 蒜頭 Garlic
- 歐車前 - 「美達詩」(每日1-2茶匙)
- **Psyllium - Metamucil (1 - 2 tbs/day)**
- 纖維: 豆及扁豆、蘋果、柑橘屬水果、大麥、青豆、蘿蔔、亞麻子、及矮瓜。

**Fiber: beans and lentils, apples, citrus fruits, barley, peas, carrots, flax seed, and egg plant.**





# 對抗膽固醇纖維 Anti - Cholesterol Fibers

水溶性纖維

**Viscous Fiber:** ~20 g/d

Oats, barley, psyllium, legumes, eggplant, okra

植物蛋白質

**Vegetable Protein:** ~100 g/d

Soy, beans, chick peas, lentils

植物固醇

**Plant Sterols:** ~2 g/d

Plant sterol margarine (1g/1000 kcal)

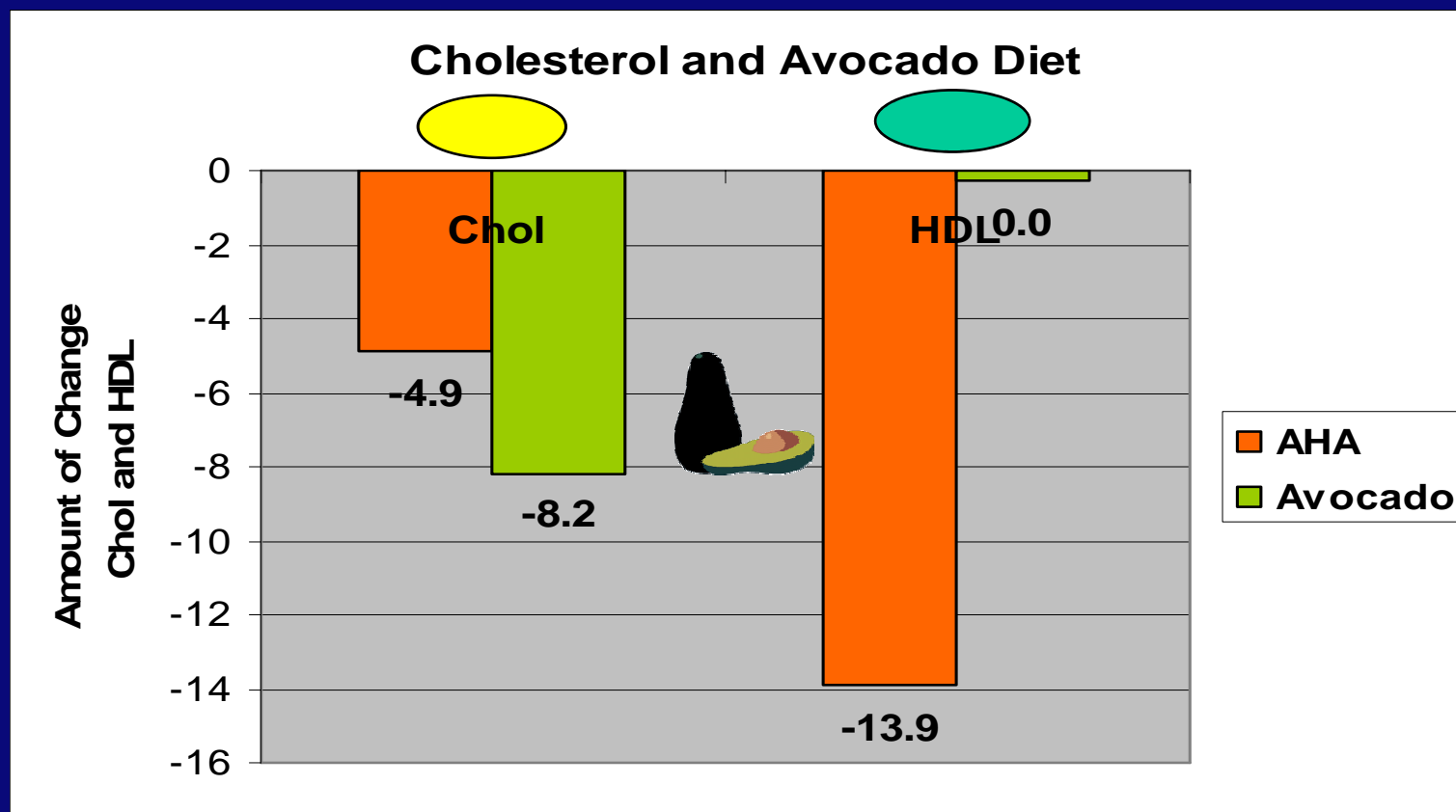
果仁

**Nuts:** ~30 g/d

Almonds



# 膽固醇及牛油果 Cholesterol and Avocados



JADA, July, 1997, pg. s38

合桃及美洲薄殼胡桃 的研究 有相同的發現 *Similar results for Walnuts and Pecans*



# 心臟病突發 HEART ATTACKS



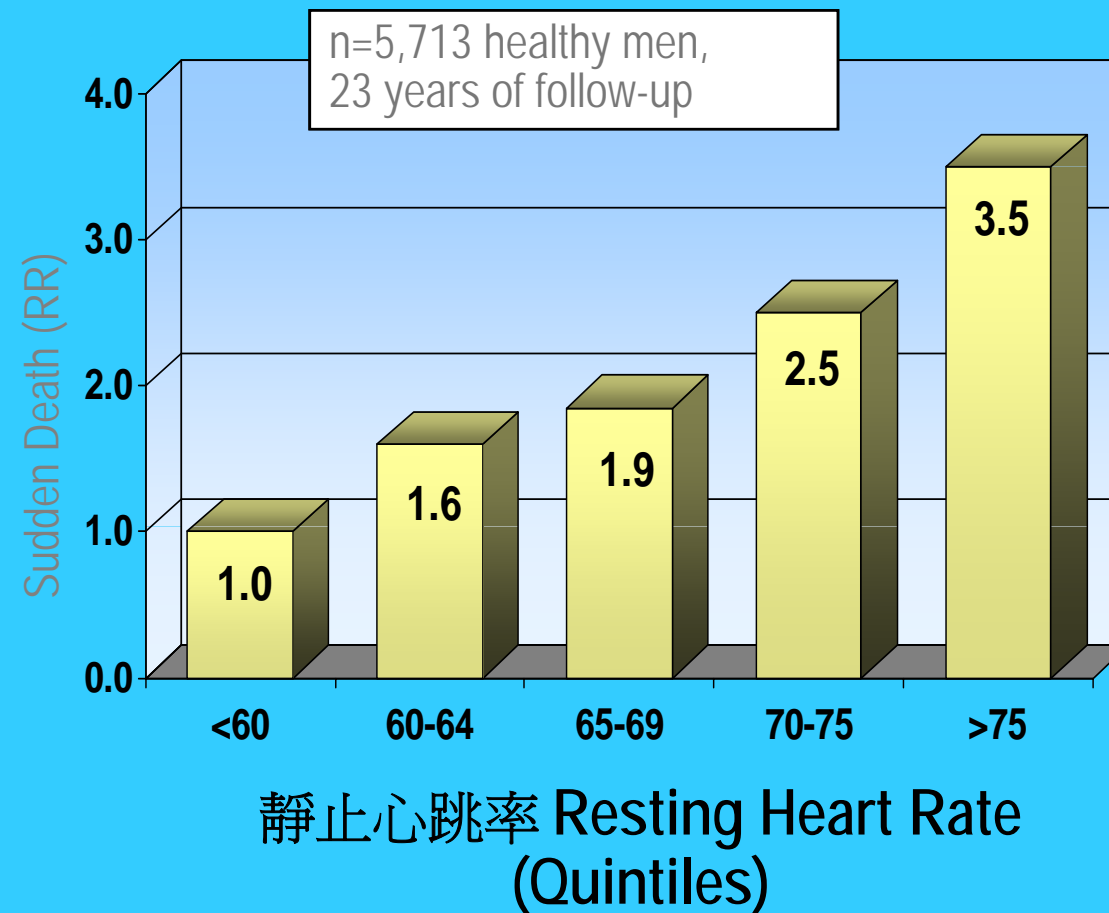
- 85% - 高凝結 High coagulation - thick blood
- 15% - 血管變厚 Hardening of the arteries

# 靜止心跳率與突發性死亡

## Resting Heart Rate and Sudden Death

快靜止心跳率增加  
心臟病突發死亡率

A high resting heart rate was linked to increased risk of sudden death from a heart attack.



*New England Journal of Medicine. 2005;352:1951-8. May 12, 2005.*



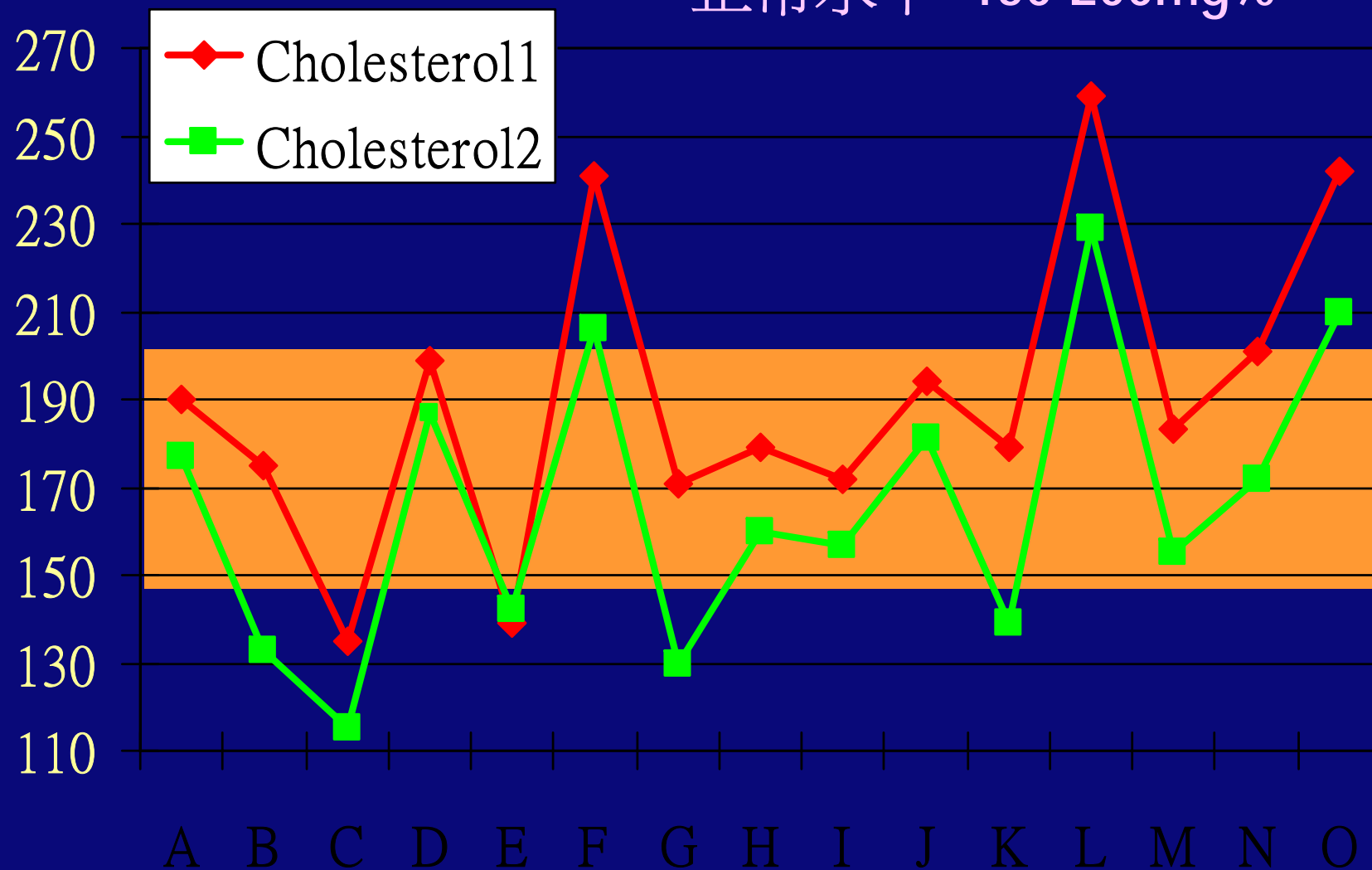


Taiwan Health Tour台灣健康之旅



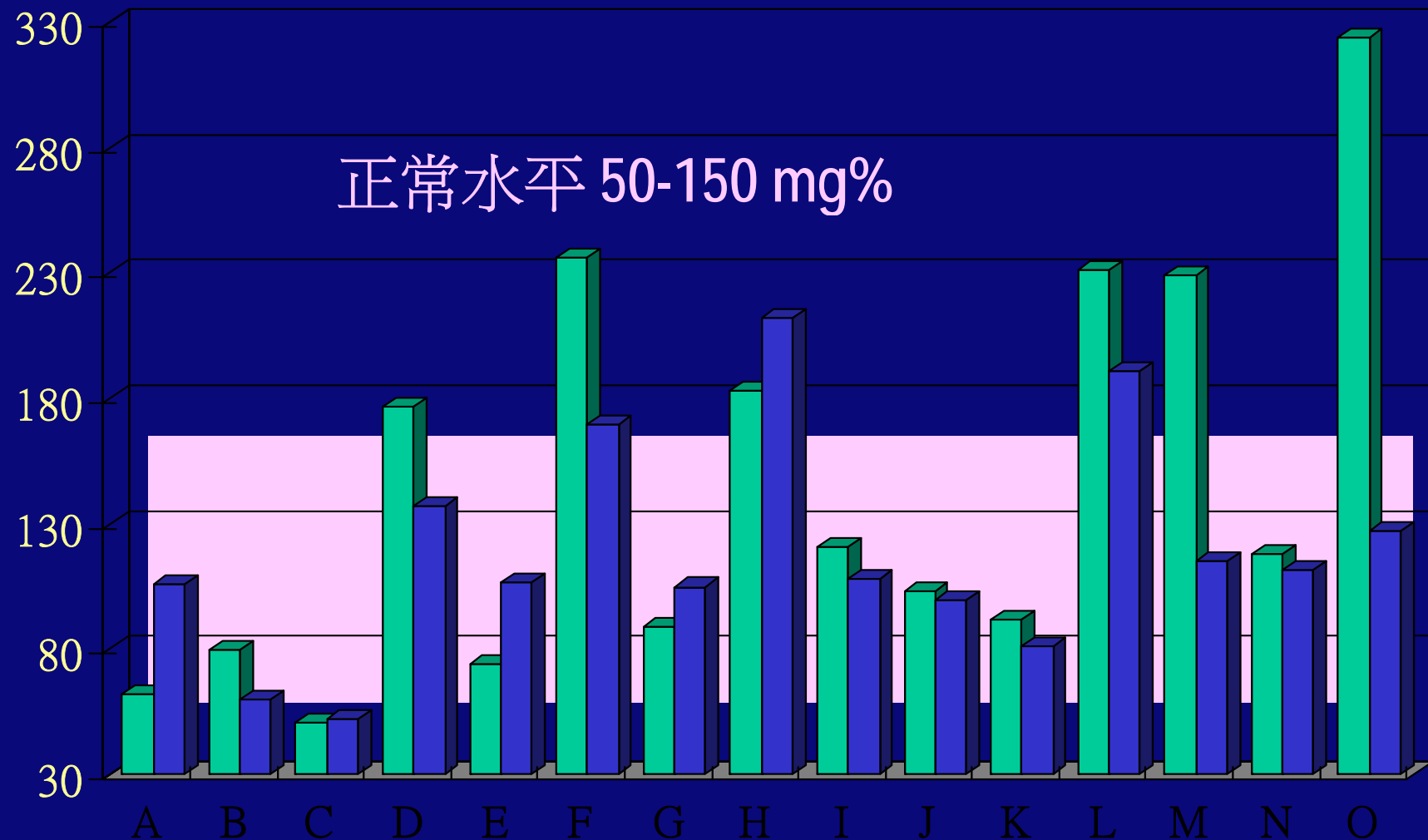
# 膽固醇

正常水平=150-200mg%



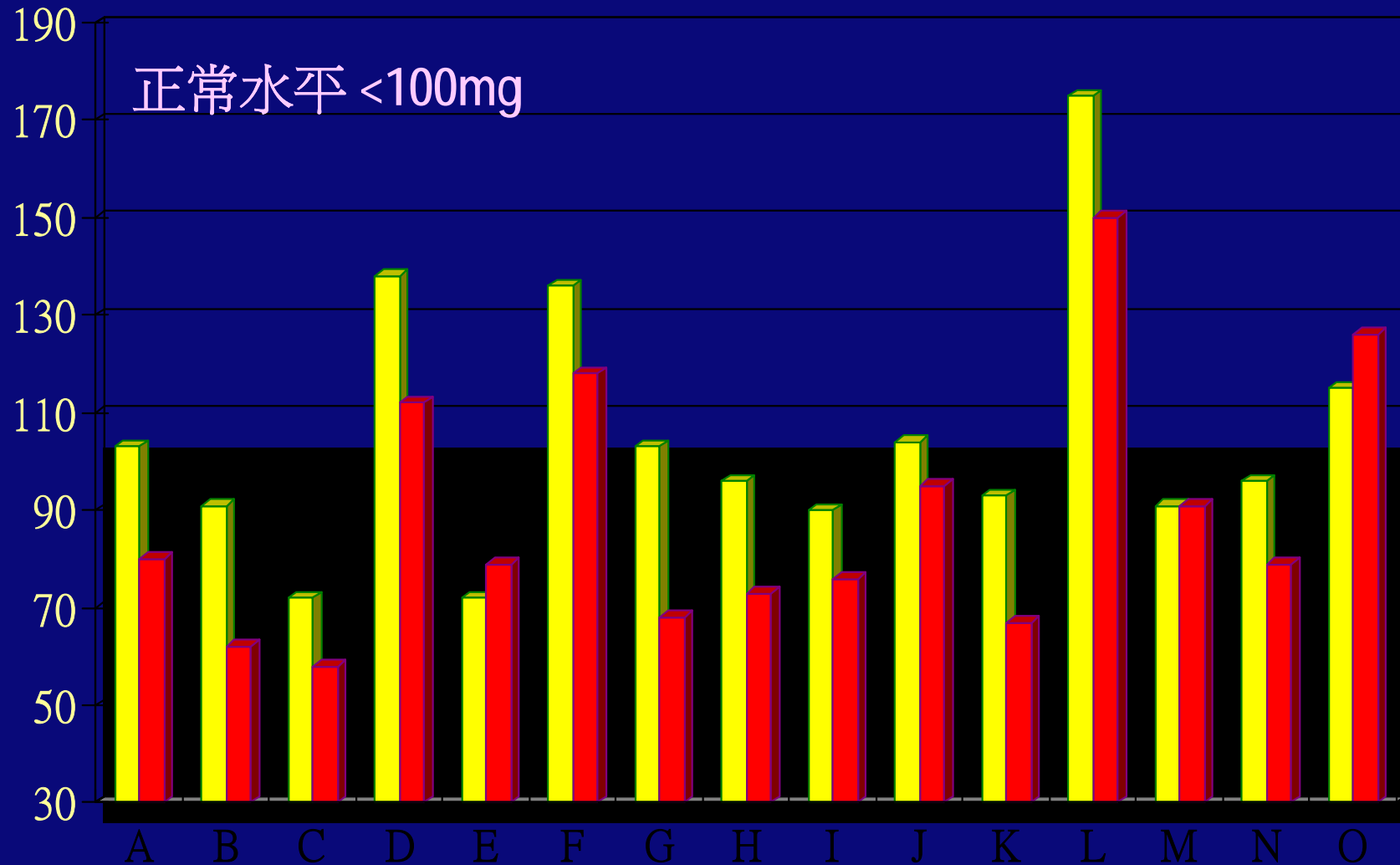
# 三脂甘油

Triglycerides 50-150 mg/dl



# 低密度膽固醇

## LDLC





Mention two things to control blood glucose levels?

列出兩樣有助控制血糖的東西？

Mention at least two things to lower cholesterol?

列出兩樣有助控制膽固醇的東西？

How long should we exercise to control blood glucose?

# Weight Control 體重控制

- 飲食 - 低脂、低糖、高纖維、少肉、少精製食物

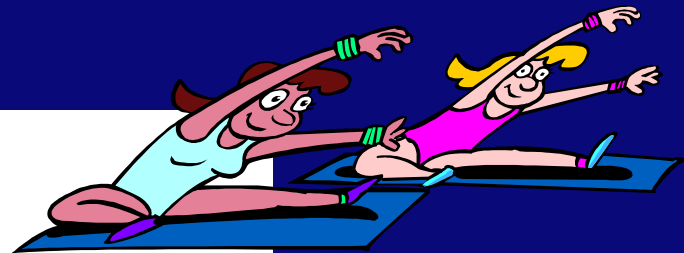
Diet - low fat, low sugar, high fibre, less meat, less refined foods

- 多些運動 More exercise
- 每星期要做幾多運動?

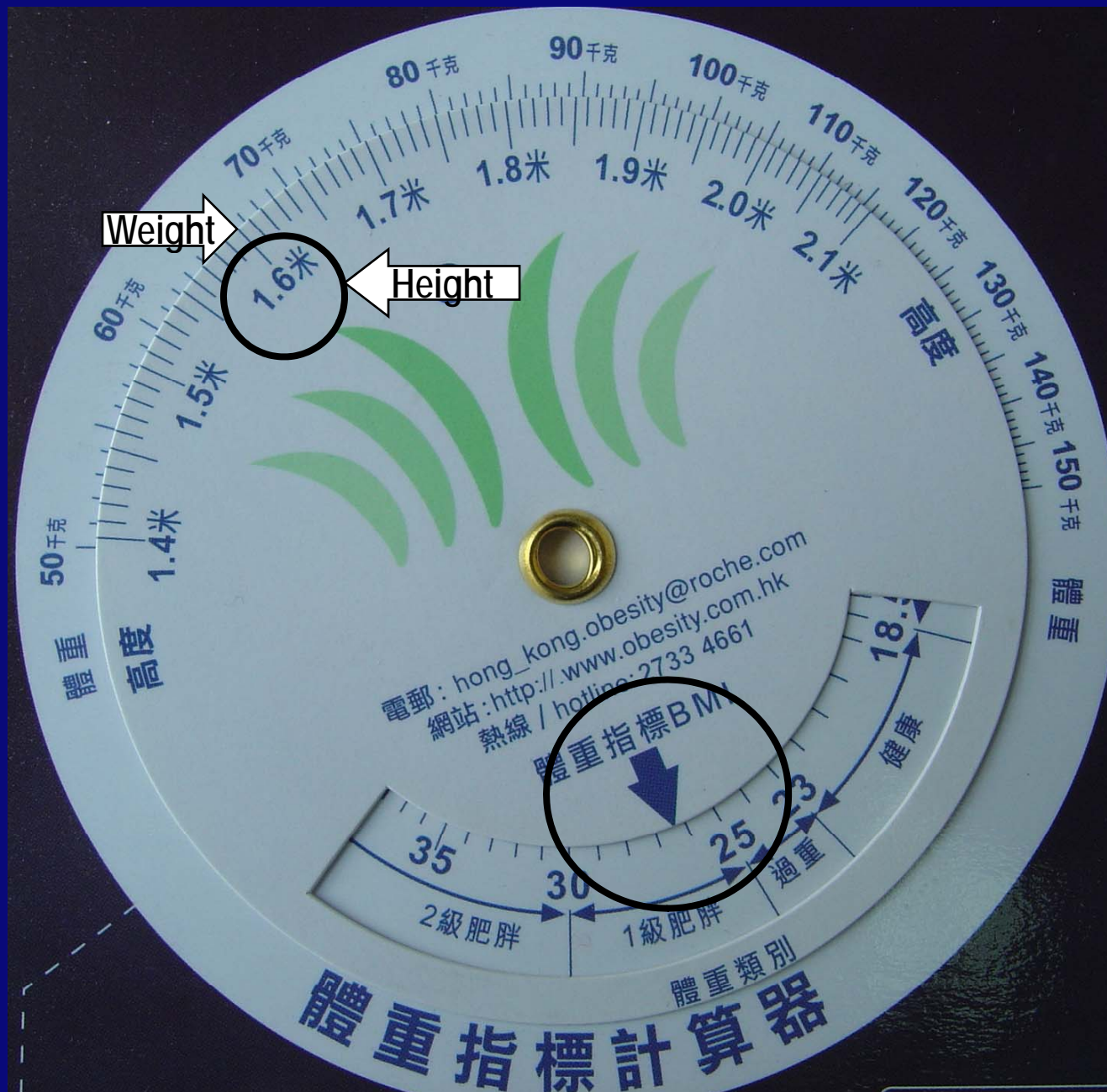
How much exercise should we do per week?

每日要做幾多運動?

How much exercise should we do per day?







# Body Mass Index Standards

## 身體質量的標準指引

18.5-22.9 kg/m<sup>2</sup> - 男性和女性合適的範圍  
Ideal Male & Female Range

23-24.9 kg/m<sup>2</sup> - 超重 Overweight

25 - 29.9 Kg/m<sup>2</sup> - 肥胖 1 Obese I

≥ 30 kg/m<sup>2</sup> - 肥胖 2 Obese II





EXERCISE運動

# James Levine - NEAT

- NEAT
- Non-Exercise Activity Thermogenics  
非運動性的活動熱力學
- Normal physical activity during the day can burn up to 350 cal/day 在日間的正常體力勞動可每日燃燒至350卡路里
- Equivalent to 45 min/walking/day  
等於每天步行45分鐘
- Can bring about 10-30 pounds of weight loss/year 一年內可減輕10至30磅的體重



# Hypertension

## 高血壓







*Healthy People* 2010  
Leading Health Indicator

## New Blood Pressure Norms

## 新的血壓正常值

Normal 正常

< 120/80

Prehypertension 高血壓前兆

120-139 / 80-89

High blood pressure 高血壓

140/90+

JNC 7 Report, JAMA May 21, 2003

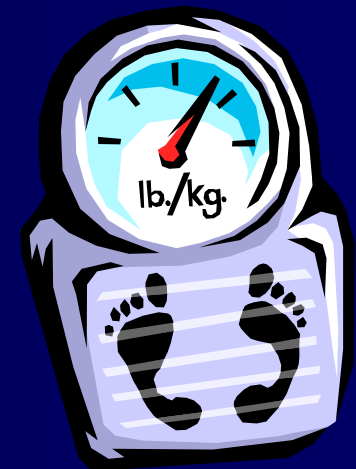
# 以生活模式改變來降低血壓

## Lifestyle Modifications to Lower Blood Pressure

### 1. Maintain a healthy weight

保持健康的體重

BP drops 5-20 points with 10 kg wt loss



JNC 7 Report, JAMA May 21, 2003

## DASH

### Dietary Approaches to Stop Hypertension

### 以生活模式改變來降低血壓 Lifestyle Modifications to Lower Blood Pressure

#### 2. 跟隨DASH食療 Follow the DASH diet eating plan

-多吃蔬菜生果-每日8至10份

Eat an abundance of fruits and vegetables - 8 to 10 servings per day

-用全麥, 果仁, 豆莢類食物-限制高飽和脂肪 (例如肉類, 牛油)

Include whole grains, nuts, and legumes - Limit foods high in saturated fat (e.g. meats, butter)

-血壓減8-14度 BP drops 8-14 points on the DASH diet

JNC 7 Report, JAMA May 21, 2003



## 以生活模式改變來降低血壓 Lifestyle Modifications to Lower Blood Pressure

### 3. Reduce sodium intake 減少含鈉的食物

- 少食鹽及鹽醃食物

Eat less salt and salty foods

- 限制鈉的食用可降血壓2-8點

Limiting sodium reduces BP by 2-8 points

JNC 7 Report, JAMA May 21, 2003

# 以生活模式改變來降低血壓

## Lifestyle Modifications to Lower Blood Pressure

### 4. 定期參加帶氧的體力活動

Engage in regular aerobic physical activity

- 最少每日30分鐘

At least 30 minutes per day

- 血壓降4-9點

BP drops 4-9 points with increased activity

JNC 7 Report, JAMA May 21, 2003

# 以生活模式改變來降低血壓

## Lifestyle Modifications to Lower Blood Pressure

### 5. 如飲用酒精, 盡量減少份量

Limit alcohol intake, if used at all

減少酒精可降血壓2-4點

BP drops 2-4 points by limiting alcohol

JNC 7 Report, JAMA May 21, 2003

# 以生活模式改變來降低血壓

## Lifestyle Modifications to Lower Blood Pressure

降低血壓的點數

Total points to lower blood pressure

-平均20-40點

-average of 20 to 40 points (Systolic)

JNC 7 Report, JAMA May 21, 2003

Similar results of drug treatment  
for high blood pressure  
藥物治療血壓的相似效果



# Hypertension and Emotions

## 高血壓與情緒

Is there any connection?  
有沒有關係?



# Hypertension and Anger

## 血壓高及憤怒

- 醫生 Dr. Dick Tibbits Tibbits
- 效果: 患高血壓的人如學怎樣寬恕可以降低血壓
- Results: Learn how to forgive can lower blood pressure on those patients with high levels of anger.





# Blood pressure and anger

## 血壓與憤怒

| Patient #<br>病人 # | Anger Score<br>憤怒指標<br>(Red 紅色) | Initial<br>Blood Pressure<br>最初血壓 | Final<br>Blood Pressure<br>最後血壓 |
|-------------------|---------------------------------|-----------------------------------|---------------------------------|
| 1                 | 34                              | 144/97                            | 130/81                          |
| 2                 | 28                              | 154/98                            | 124/76                          |
| 3                 | 26                              | 151/99                            | 132/86                          |
| 4                 | 26                              | 157/107                           | 123/84                          |
| 5                 | 19                              | 153/87                            | 124/80                          |



How many servings of fruits and vegetables  
per day is needed to control blood pressure?  
每日須要吃幾多份生果及蔬菜才可控制  
血壓?

What is normal blood pressure?

甚麼是正常的血壓?

Normal blood sugar is?

正常的血糖指標是?

# 代謝候群症的治療

## Treatment of Metabolic Syndrome

- Weight control  
體重控制
- Low calorie diet  
低卡路里食療
- Low cholesterol diet  
低卡膽固醇食療
- Fruits, vegetables and fiber  
生果, 蔬菜及纖維
- 30 min of daily exercise  
每日運動30分鐘





But I can't!  
我辦不到!

You really need to  
change your lifestyle!  
你一定要改變你的  
生活方式!

有否其他建議  
Any other suggestion?

