

A closer look at  
Nutrition Labelling

# DIABETES MELLITUS AND CARBOHYDRATES



食物安全中心  
Centre for Food Safety

# DIABETES MELLITUS

Diabetes Mellitus (commonly known as diabetes or DM) is a metabolic disorder. People with diabetes have either deficiency or resistance to insulin, a hormone produced by the pancreas. As a result, it affects the use of glucose in their bodies. According to a local survey conducted in 2003/2004, about 4% of the population have diabetes in Hong Kong. Uncontrolled diabetes can lead to severe complications, such as retinopathy, heart diseases, renal failure and stroke.




Dietary management and appropriate amount of physical activity play important roles in diabetic control. People with diabetes should control their energy intake in order to lose body weight or maintain a healthy body weight. Similar to general healthy eating advice, people with diabetes should eat a balanced diet with a variety of foods and follow the “3 Low, 1 High” principle, that is **low fat, low sodium (or salt), low sugars** and **high fibre**. Furthermore, they need to be aware of their daily intake of carbohydrates, including sugars.



## DIETARY MANAGEMENT OF DIABETES

People with diabetes should take meals regularly with consistent amount for stabilising blood glucose level. The amount of food in each meal, particularly carbohydrates (including sugars), should be matched with their diabetic conditions, medications and daily living needs.



People with diabetes should discuss their diabetic meal plans with a dietitian or healthcare professional, then make use of nutrition labels for choosing appropriate prepackaged food. A person with diabetes should not follow other people's meal plans.

Since knowing the amount of carbohydrates and sugars in food can help diabetic patients manage their blood glucose level, one can refer to the information on nutrition labels which will be required by law to be provided on prepackaged food in Hong Kong from 1<sup>st</sup> July 2010. Other than **carbohydrates** (including **sugars**), patients with diabetes should consume less saturated fat and trans fat to reduce the risk of developing heart diseases.

# USE OF NUTRITION LABELLING

Nutrition Information 營養資料	
Per 100g/ 每100克	
Energy/ 能量	398kcal/ 千卡 (1670kJ/ 千焦)
Protein/ 蛋白質	7.5g/ 克
Total fat/ 總脂肪	2.6g/ 克
- Saturated fat/ 飽和脂肪	0.2g/ 克
- Trans fat/ 反式脂肪	0g/ 克
Carbohydrates/ 碳水化合物	86.1g/ 克
- Sugars/ 糖	4.0g/ 克
Sodium/ 鈉	105mg/ 毫克



**F**rom 1<sup>st</sup> July 2010, nutrition labels on prepackaged food will provide the content information of **energy**, protein,



**carbohydrates**, total fat, saturated fat, trans fat, sodium and **sugars**. When reading nutrition labels, attention should be paid to the serving size and the actual amount of food to be consumed. If one eats twice the serving size, the energy and nutrient content will be doubled accordingly.

Nutrition claims on a package are always eye-catching, in particular sugars claims for people with diabetes. One should note carefully the meaning of each of these claims. The new regulation that comes into operation on 1<sup>st</sup> July 2010 prescribes standards for claims describing the levels of sugars e.g. "sugars free" and "low sugars". "Sugars free" does not mean that the product does not contain sugars or carbohydrates.

**Table 1: Specific Conditions for Nutrient Content Claims on Sugars**

Claims	Specific conditions (Per 100 g of solid food or Per 100 mL of liquid food)
Sugars free	Containing not more than 0.5 g of sugars
Low Sugars	Containing not more than 5 g of sugars

Moreover, some products may carry a statement emphasizing that the product has "no added sugars". "No added sugars" means that sugars or ingredients that contain sugars for sweetening purpose are not added during the food production process. The product may still contain sugars that are naturally present.



Nutrition Information 營養資料	
	Per 100mL/ 每100毫升
Energy/ 能量	42kcal/ 千卡
Protein/ 蛋白質	0.6g/ 克
Total fat/ 總脂肪	0.1g/ 克
- Saturated fat/ 飽和脂肪	0g/ 克
- Trans fat/ 反式脂肪	0g/ 克
Carbohydrates/ 碳水化合物	9.9g/ 克
- Sugars/ 糖	8.4g/ 克
Sodium/ 鈉	2mg/ 毫克

Regardless of the types of nutrition claim that may appear on the package, they only give a rough idea about the content of a particular nutrient, one should not make a food choice solely on the basis of a nutrition claim. Moreover, very often nutrition claims are made for a specific nutrient only. In order to eat healthily, we should take note of other nutrients as well. For example, a product with a “low sugars” claim may have high fat content. The best practice is to refer to the nutrition label for detailed information.

## THREE SIMPLE STEPS TO READ NUTRITION LABEL

STEP

1

### TAKE NOTE OF THE REFERENCE AMOUNT OF FOOD BEING USED IN THE NUTRITION LABEL

The nutritional content may be expressed in several ways:

per 100 g/mL

per serving

per package

Comparison should be made basing on the same reference amount, e.g. per 100 g versus per 100 g, per 50-gram serving versus per 50-gram serving, but not per 100 g versus per 50-gram serving.

## STEP

## 2

## READ AND COMPARE THE NUTRITIONAL CONTENT

Based on the same reference amount of food, consumers can make comparison among the contents of fat, sugars, sodium (i.e. "3 Low"), and the combined amount of saturated fat and trans fat of various products. Then choose the one that is lower in these nutrients. If weight maintenance is required, consumers can also compare and choose the one that is lower in energy.

After selecting the food that is healthier, people with diabetes should calculate the intake amount of carbohydrates, so that they can calculate the intake amounts of other foods in the day.

Q&amp;A

Question 1: Which is a better choice?

## Milk Beverage A:

Nutrition Information 營養資料	
Servings Per Package/ 每包裝所含食用分量數目: 1	
Serving Size/ 食用分量: 236mL / 236毫升	
Per Package/ 每包裝	
Energy/ 能量	156kcal/ 千卡
Protein/ 蛋白質	7.8g/ 克
Total fat/ 總脂肪	9.0g/ 克
- Saturated fat/ 飽和脂肪	5.9g/ 克
- Trans fat/ 反式脂肪	0.2g/ 克
Carbohydrates/ 碳水化合物	11g/ 克
- Sugars/ 糖	11g/ 克
Sodium/ 鈉	97mg/ 毫克

## Milk Beverage B:

Nutrition Information 營養資料	
Servings Per Package/ 每包裝所含食用分量數目: 1	
Serving Size/ 食用分量: 236mL / 236毫升	
Per Package/ 每包裝	
Energy/ 能量	84kcal/ 千卡
Protein/ 蛋白質	8.5g/ 克
Total fat/ 總脂肪	0.2g/ 克
- Saturated fat/ 飽和脂肪	0.2g/ 克
- Trans fat/ 反式脂肪	0g/ 克
Carbohydrates/ 碳水化合物	12g/ 克
- Sugars/ 糖	12g/ 克
Sodium/ 鈉	104mg/ 毫克

Answer 1:

Milk Beverages A and B have comparable amount of carbohydrates and sugars. Milk Beverage B is a better choice as it has much less energy, total fat, saturated fat and trans fat in each package (i.e. 236 mL). Because each carton of Milk Beverage B contains 12 g of carbohydrate, if people with diabetes consume one carton of Milk Beverage B, they have consumed 12 g of carbohydrates.



Question 2: Which is a better choice?

### Corn Flakes C:

Nutrition Information 營養資料	
Per 100g/ 每100克	
Energy/ 能量	382kcal/ 千卡
Protein/ 蛋白質	8g/ 克
Total fat/ 總脂肪	0.7g/ 克
- Saturated fat/ 飽和脂肪	0.1g/ 克
- Trans fat/ 反式脂肪	0g/ 克
Carbohydrates/ 碳水化合物	86g/ 克
- Sugars/ 糖	8g/ 克
Sodium/ 鈉	800mg/ 毫克

### Corn Flakes D:

Nutrition Information 營養資料	
Per 100g/ 每100克	
Energy/ 能量	400kcal/ 千卡
Protein/ 蛋白質	5.3g/ 克
Total fat/ 總脂肪	0.5g/ 克
- Saturated fat/ 飽和脂肪	0.1g/ 克
- Trans fat/ 反式脂肪	0g/ 克
Carbohydrates/ 碳水化合物	93.7g/ 克
- Sugars/ 糖	42g/ 克
Sodium/ 鈉	1100mg/ 毫克



Answer 2:

Corn Flakes C is a better choice as it has much less sugars and less sodium in each 100 g. If people with diabetes consume 50 g of Corn Flakes C (i.e. half of the reference amount of Corn Flakes), they consume (86 g ÷ 2) i.e. 43 g of carbohydrates.

## STEP 3

### REFER TO THE PERCENTAGE NUTRIENT REFERENCE VALUE (%NRV) (IF AVAILABLE)

%NRV is a relative expression of the nutritional content. It tells you whether there is a lot or a little of a nutrient in the stated amount of food on a scale from 0% to 100%. A high percentage means the food contains a lot of a nutrient whereas a low percentage means it contains just a little. In case the %NRV of energy or those nutrients that should be consumed less (e.g. sugars, total fat, saturated fat or trans fat) is at the high-end, think twice before making the purchase of that particular food product as it is very likely that the food may contribute a great proportion of your daily allowances of these nutrients.

%NRV may come in different terms in nutrition labels. For example, in Hong Kong, a set of NRV is adopted and the energy and nutrient values may be presented as %Chinese NRV. %Daily Value (%DV) or %Daily Intake (%DI) may be used in other places, and their values may be different from those adopted in Hong Kong.

**Question 3:** Which is a better choice?



**Soup E:**

Nutrition Information 營養資料		
Servings Per Package/ 每包裝所含食用分量數目: 2		
Serving Size/ 食用分量: 200g / 200克		
	Per Serving/ 每食用分量	%Chinese NRV Per Serving/ 每食用分量的 中國營養素 參考值百分比
Energy/ 能量	116kcal/千卡	6%
Protein/ 蛋白質	3.2g/克	5%
Total fat/ 總脂肪	7.0g/克	12%
- Saturated fat/ 飽和脂肪	2.0g/克	10%
- Trans fat/ 反式脂肪	0g/克	
Carbohydrates/ 碳水化合物	10g/克	3%
- Sugars/ 糖	2.5g/克	
Sodium/ 鈉	940mg/毫克	47%

**Soup F:**

Nutrition Information 營養資料		
Servings Per Package/ 每包裝所含食用分量數目: 2		
Serving Size/ 食用分量: 200g / 200克		
	Per Serving/ 每食用分量	%Chinese NRV Per Serving/ 每食用分量的 中國營養素 參考值百分比
Energy/ 能量	78kcal/千卡	4%
Protein/ 蛋白質	3.0g/克	5%
Total fat/ 總脂肪	1.4g/克	2%
- Saturated fat/ 飽和脂肪	0g/克	0%
- Trans fat/ 反式脂肪	0g/克	
Carbohydrates/ 碳水化合物	13.4g/克	4%
- Sugars/ 糖	3.3g/克	
Sodium/ 鈉	620mg/毫克	31%

**Answer 3:**

Soup E and Soup F have small differences in the amount of carbohydrates and sugars. Soup F is a better choice as it has much less total fat and saturated fat and less energy and sodium in each serving (i.e. 200 g). Because each serving of Soup F (i.e. 200 g) contains 13.4 g of carbohydrates, if people with diabetes consume one serving of Soup F, they have consumed 13.4 g of carbohydrates.

THIS PAMPHLET IS PREPARED BY THE TASK FORCE ON NUTRITION LABELLING EDUCATION COMPRISING MEMBERS FROM:

- Association of Hong Kong Nursing Staff
- Centre for Health Education and Health Promotion, The Chinese University of Hong Kong
- Committee on Home-School Co-operation
- Consumer Council
- Department of Health
- Education Bureau
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- Hong Kong Nutrition Association
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- The Hong Kong Medical Association

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[www.cfs.gov.hk](http://www.cfs.gov.hk)

Central Health Education Unit,  
Department of Health

[www.cheu.gov.hk/eng/info/  
otherdiseases.htm](http://www.cheu.gov.hk/eng/info/otherdiseases.htm)



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