
本地素菜的鈉、糖、脂肪含量及能量值 Sodium, Sugar, Fat and Energy Contents in Local Vegetarian Dishes

背景

Background



鈉對健康的影響

Health effects of sodium

- 鈉是維持人體機能正常運作的必需元素。
- 進食過多鈉可能會增加患上高血壓的風險。
- 高血壓若不及早診治，可引致心臟病、中風和腎衰竭等疾病。
- Sodium is essential for body functions.
- Excessive sodium intake may increase the risk of developing high blood pressure.
- Untreated high blood pressure can lead to heart attack, stroke, kidney failure, etc.



糖對健康的影響

Health effects of sugar

- 糖可為身體提供能量(每克糖提供4千卡能量)。
- 進食過多糖可能會令人攝入過多能量，增加超重和患上肥胖症的風險。
- 經常攝入過多的糖還會引致蛀牙。
- 肥胖症會增加患上一些慢性疾病(如：高血壓、心臟病和糖尿病)的風險。
- Sugar provides energy for the body (each gram of sugar can provide 4 kcal of energy).
- Consuming too much sugar can lead to excessive energy intake and in turn increase the risk of overweight and obesity.
- Frequent consumption of too much sugar can also lead to dental decay.
- Obesity increases the risk of a number of chronic diseases, such as hypertension, heart diseases and diabetes mellitus.



脂肪對健康的影響

Health effects of fat

- 脂肪是高能量的來源，每克脂肪提供 9 千卡能量。進食太多脂肪會導致攝入過多能量，增加患上肥胖症、高血壓及糖尿病的風險。
- 攝取過量的飽和脂肪和反式脂肪，會增加血液中“壞膽固醇”含量，從而增加患上冠心病的風險。
- Fat is a concentrated source of energy, as each gram of fat can provide 9 kcal of energy. Consuming too much fat can lead to too much energy intake, and in turn increase the risk of obesity, high blood pressure and diabetes.
- Consuming too much saturated fat and trans fat can increase the level of “bad cholesterol” in blood and increase the chance for coronary heart disease.



是次研究

The Study



目的 Objectives

- 檢測及比較一些本地食肆供應的素菜的鈉、糖、總脂肪、飽和脂肪、反式脂肪及能量含量。
- 推動食物業界提供鈉、糖及脂肪含量較低的素菜。
- 幫助公眾在外出用膳時能作出知情和適合個人情況的選擇。
- To measure and compare the sodium, sugar, total fat, saturated fat, trans fat and energy contents in vegetarian dishes provided by local food premises.
- To encourage the trade to provide vegetarian dishes with less sodium, sugar and fat through recipe reformulation.
- To inform and assist the public to make informed choices that suit individual needs when eating out.



研究範疇 Scope of Study

➤ 10款最常見的素菜(8款中式、2款西式)

➤ 10 types of common vegetarian dishes (8 are Chinese style; 2 are Western style)

素菜種類

Vegetarian dish types

1. 粟米素魚塊 Vegetarian fish fillet in sweet corn sauce
2. 齋滷味拼盤 Vegetarian wheat gluten (Lo-Mei) platter
3. 素魚香茄子 Braised eggplant
4. 羅漢齋 Buddha's delight
5. 素福建炒飯 Vegetarian Fukien style fried rice
6. 紅燒豆腐 Braised tofu
7. 菠蘿素咕嚕肉 Sweet and sour vegetarian pork with pineapple
8. 芋頭魚 Vegetarian taro fish
9. 素漢堡包 Veggie burger
10. 松露野菌意粉 Pasta with truffle and mushroom

採樣及檢測 Sampling and Analysis

➤ 抽取樣本時間

- 2020年6月至7月

➤ 地點

- 齋舖、其他提供素菜的食肆

➤ 搜集樣本數目

- 99個食物樣本 (10款素菜，每款9-10個樣本)
- 在搜集芋頭魚的同時亦搜集了酸甜汁的樣本

➤ 檢測

- 測試由食物安全中心食物研究化驗所進行
- 檢測項目包括鈉、糖、總脂肪、飽和脂肪、反式脂肪及能量

➤ Sampling period

- June to July 2020

➤ Location

- Vegetarian restaurants, non-vegetarian restaurants that provided vegetarian dishes

➤ No. of samples

- A total of 99 samples (10 types of vegetarian dishes with 9-10 samples for each type)
- Sampled sweet and sour sauce when collecting vegetarian taro fish samples.

➤ Analysis

- Testing conducted by Food Research Laboratory of the CFS
- Testing parameters include sodium, sugar, total fat, saturated fat, trans fat and energy



結果分析 Data analysis (1)

營養素 Nutrients	低 Low* (每100克食物) (per 100 g of food)	高 High# (每100克食物) (per 100 g of food)
鈉 Sodium	≤ 120毫克/mg	> 600毫克/mg
糖 Sugar	≤ 5 克/g	> 15 克/g
總脂肪 Total fat	≤ 3 克/g	> 20 克/g

*根據本地現行的營養標籤規例

The existing Nutrition Labelling Regulation in HK

#根據中心為方便市民有效地使用營養標籤而編印的“購物指南卡”

According to the “Shopping card” published by CFS which aims at facilitating consumers in making good use of nutrition labels



結果分析 Data analysis (2)

- 以每日三餐計算, 把攝入的營養素分量與世衛建議每日攝取限量的三分之一作比較。
- Based on taking 3 meals a day, the amount of nutrient intake is compared with 1/3 of WHO's recommendations on daily intake upper limits.

營養素 Nutrients	世衛建議每日攝取限量 (以每日攝取2,000千卡能量計) WHO's recommendations on daily intake upper limits (based on a 2000-kcal diet)
鈉 Sodium	< 2,000 毫克/mg
糖 Sugar*	< 總能量的10% (< 50克) < 10% total energy (< 50 g)
總脂肪 Total fat	< 總能量的30% (< 66克) < 30% total energy (< 66 g)
飽和脂肪 Saturated fat	< 總能量的10% (< 22克) < 10% total energy (< 22 g)
反式脂肪 Trans fat	< 總能量的1% (< 2.2克) < 1% total energy (< 2.2 g)

* 將游離糖攝入量進一步減至每日總能量的5%以內可更有效減少蛀牙

Further reduction of free sugar intake to below 5% of total energy intake would provide additional health benefits in the form of reduced dental caries



結果

Findings



素菜樣本的鈉含量

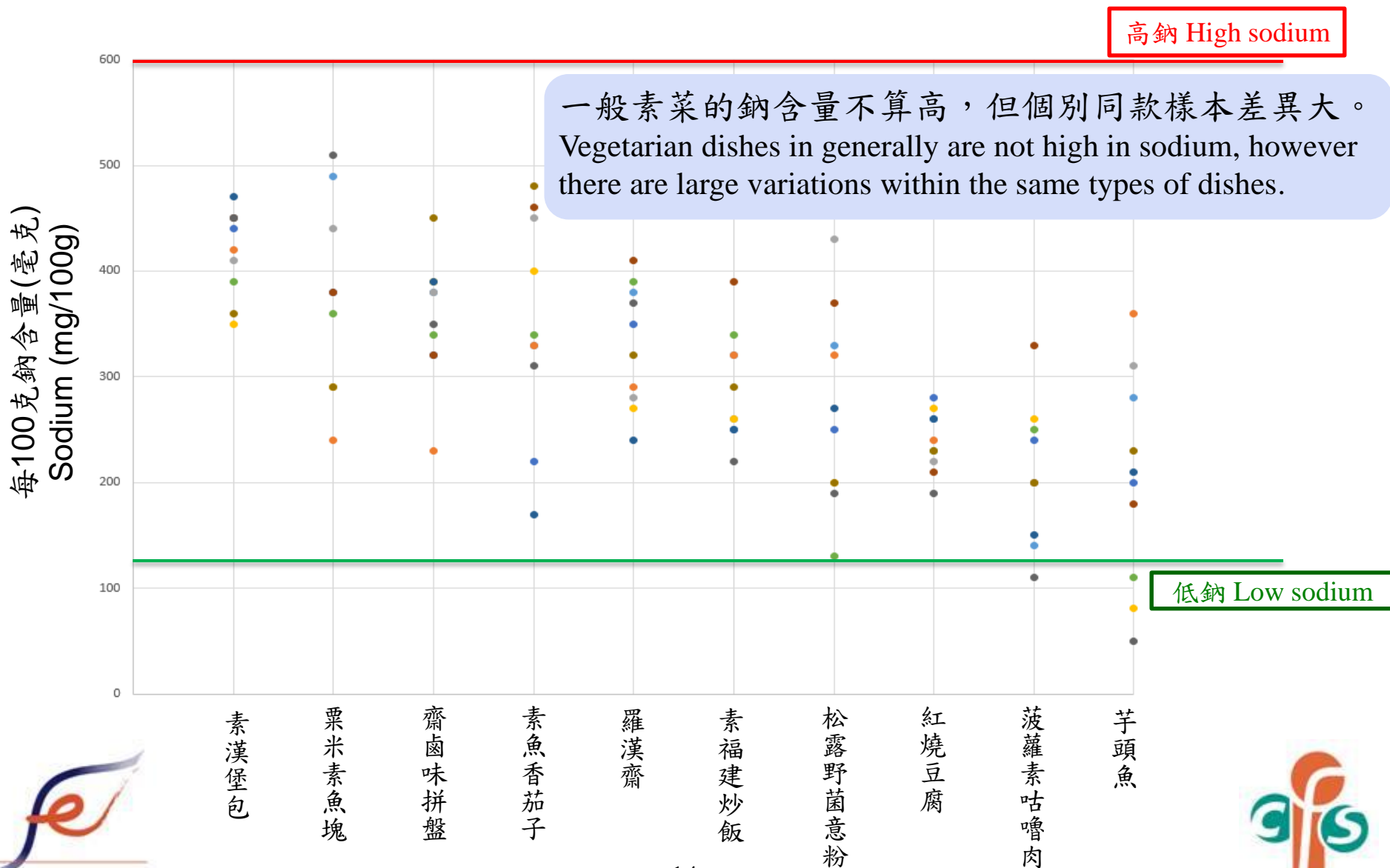
Sodium content of vegetarian dish samples

素菜種類 Vegetarian dish types	樣本數 目 No. of Samples	每100克鈉含量平 均值[範圍](毫克) Mean sodium level [range] (mg/100 g)
素漢堡包 Veggie burger	10	420 [350-470]
粟米素魚塊 Vegetarian fish fillet in sweet corn sauce	9	380 [240-510]
齋鹵味拼盤 Vegetarian wheat gluten (Lo-Mei) platter	10	360 [230-450]
素魚香茄子 Braised eggplant	10	350 [170-480]
羅漢齋 Buddha's delight	10	330 [240-410]
素福建炒飯 Vegetarian Fukien style fried rice	10	290 [220-390]
松露野菌意粉 Pasta with truffle and mushroom	10	270 [130-430]
紅燒豆腐 Braised tofu	10	240 [190-280]
菠蘿素咕嚕肉 Sweet and sour vegetarian pork with pineapple	10	210 [110-330]
芋頭魚 Vegetarian taro fish	10	200 [50-360]
整體 Overall	99	300 [50-510]



素菜的鈉含量分佈圖

Distribution chart of sodium content of vegetarian dishes



鈉從何來？

Where does sodium come from?



製作時添加
含鹽／鈉的
調味料



含鈉的素肉



進食時蘸汁
(酸甜汁)
(成份包括生抽、
番茄醬、白醋、
糖、粟粉)



素菜樣本的糖含量

Sugar content of vegetarian dish samples

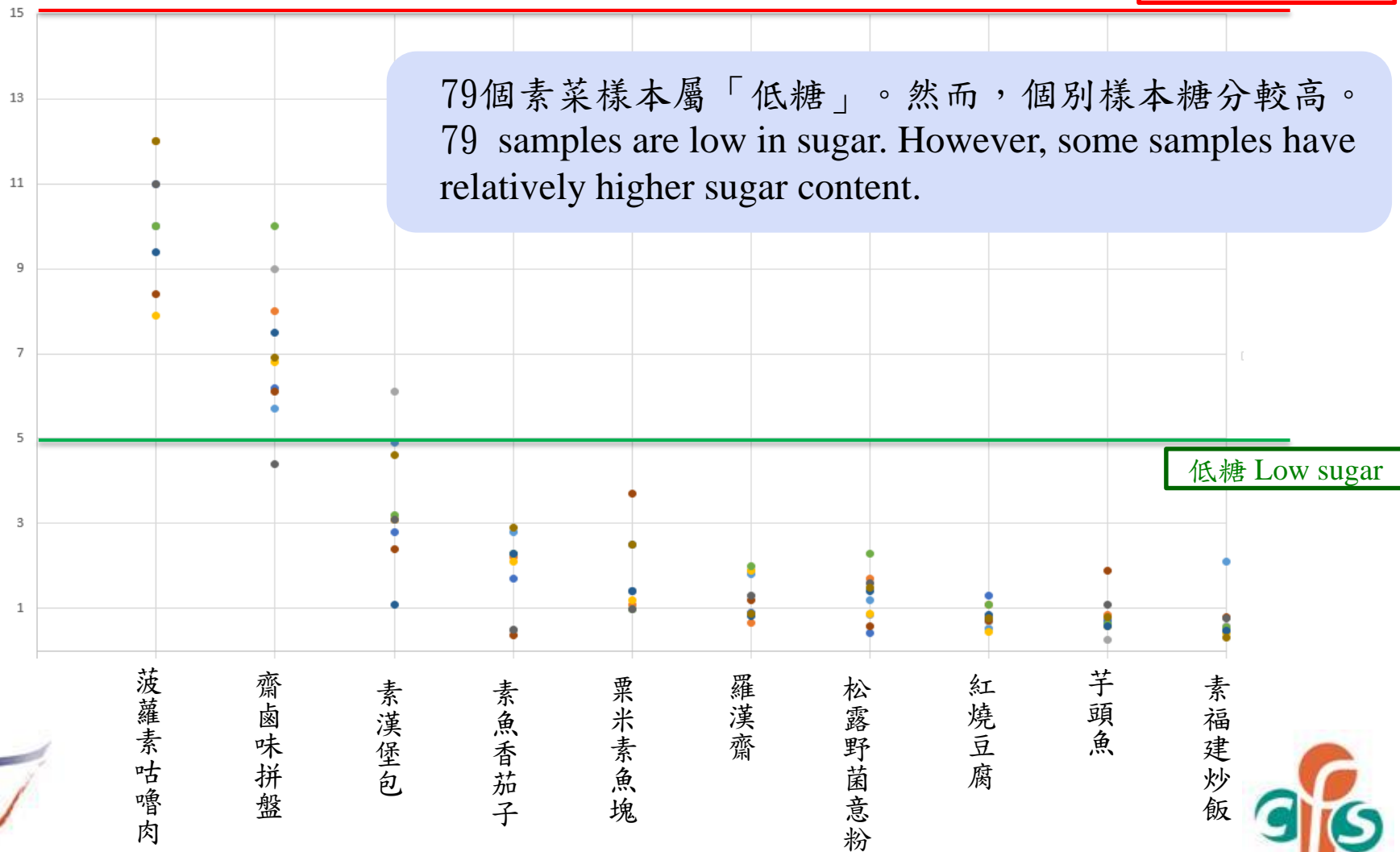
素菜種類 Vegetarian dish types	樣本數目 No. of Samples	每100克糖含量平均值[範圍](克) Mean sugar level [range] (g/100 g)
菠蘿素咕嚕肉 Sweet and sour vegetarian pork with pineapple	10	10 [7.9-12]
齋滷味拼盤 Vegetarian wheat gluten (Lo-Mei) platter	10	7.1 [4.4-10]
素漢堡包 Veggie burger	10	3.4 [1.1-6.1]
素魚香茄子 Braised eggplant	10	1.8 [0.36-2.9]
粟米素魚塊 Vegetarian fish fillet in sweet corn sauce	9	1.8 [0.97-3.7]
羅漢齋 Buddha's delight	10	1.3 [0.66-2.0]
松露野菌意粉 Pasta with truffle and mushroom	10	1.2 [0.42-2.3]
紅燒豆腐 Braised tofu	10	0.83 [0.46-1.3]
芋頭魚 Vegetarian taro fish	10	0.81 [0.25-1.9]
素福建炒飯 Vegetarian Fukien style fried rice	10	0.70 [0.32-2.1]
整體 Overall	99	2.9 [0.25-12]

素菜的糖含量分佈圖

Distribution chart of sugar content of vegetarian dishes

高糖 High sugar

每100克糖含量(克)
Sugar (g/100g)



低糖 Low sugar



糖從何來？

Where does sugar come from?



烹調時使用較大量糖

菠蘿天然含有糖分



素菜樣本的總脂肪含量

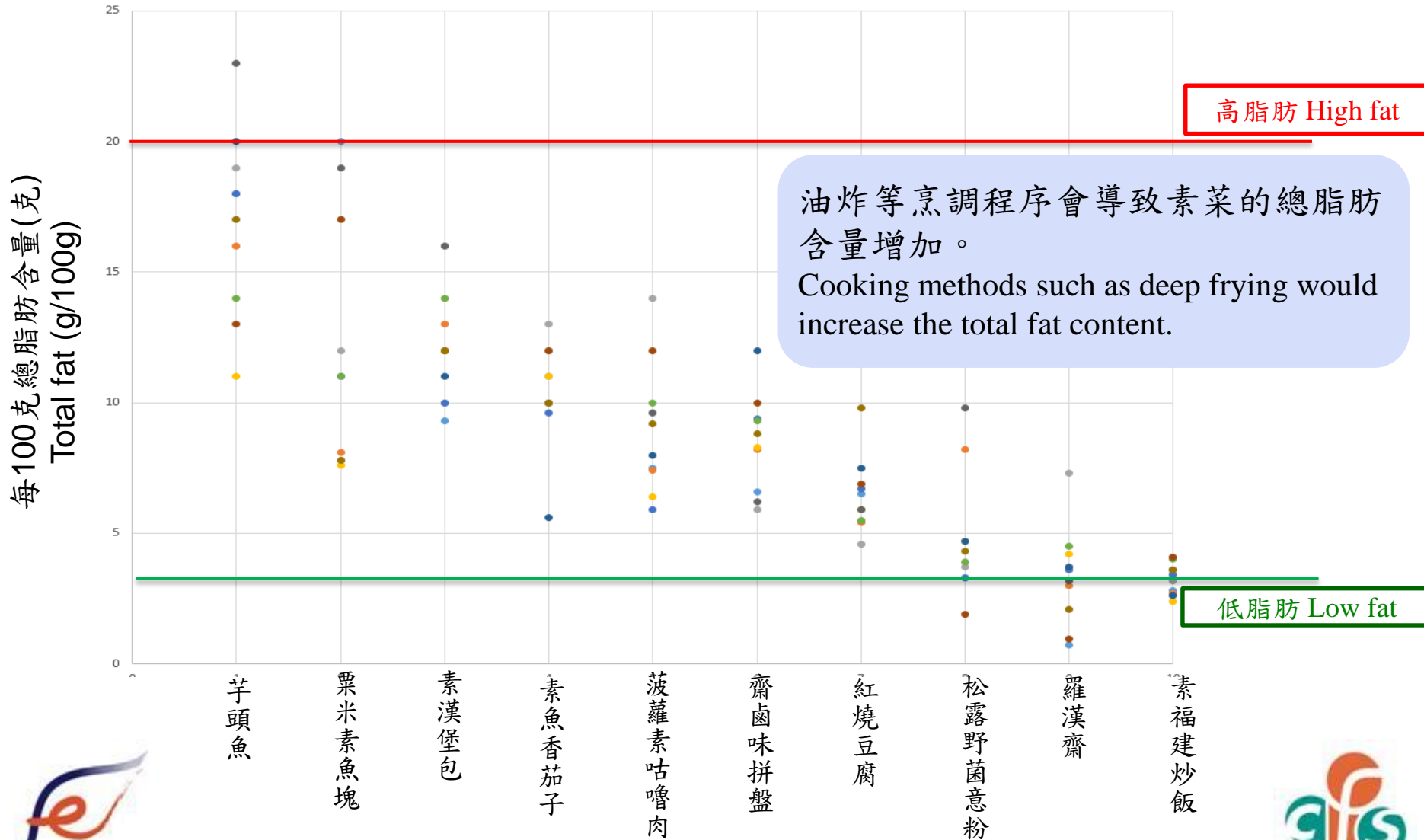
Total fat content of vegetarian dish samples

素菜種類 Vegetarian dish types	樣本數 目 No. of Samples	每100克總脂肪含 量平均值[範圍](克) Mean total fat level [range] (g/100 g)
芋頭魚 Vegetarian taro fish	10	17 [11-23]
粟米素魚塊 Vegetarian fish fillet in sweet corn sauce	9	13 [7.6-20]
素漢堡包 Veggie burger	10	12 [9.3-16]
素魚香茄子 Braised eggplant	10	10 [5.6-13]
菠蘿素咕嚕肉 Sweet and sour vegetarian pork with pineapple	10	9.0 [5.9-14]
齋鹵味拼盤 Vegetarian wheat gluten (Lo-Mei) platter	10	8.5 [5.9-12]
紅燒豆腐 Braised tofu	10	6.5 [4.6-9.8]
松露野菌意粉 Pasta with truffle and mushroom	10	4.8 [1.9-9.8]
羅漢齋 Buddha's delight	10	3.3 [0.74-7.3]
素福建炒飯 Vegetarian Fukien style fried rice	10	3.2 [2.4-4.1]
整體 Overall	99	8.7 [0.74-23]



素菜的總脂肪含量分佈圖

Distribution chart of total fat content of vegetarian dishes



脂肪從何來？

Where does fat come from?



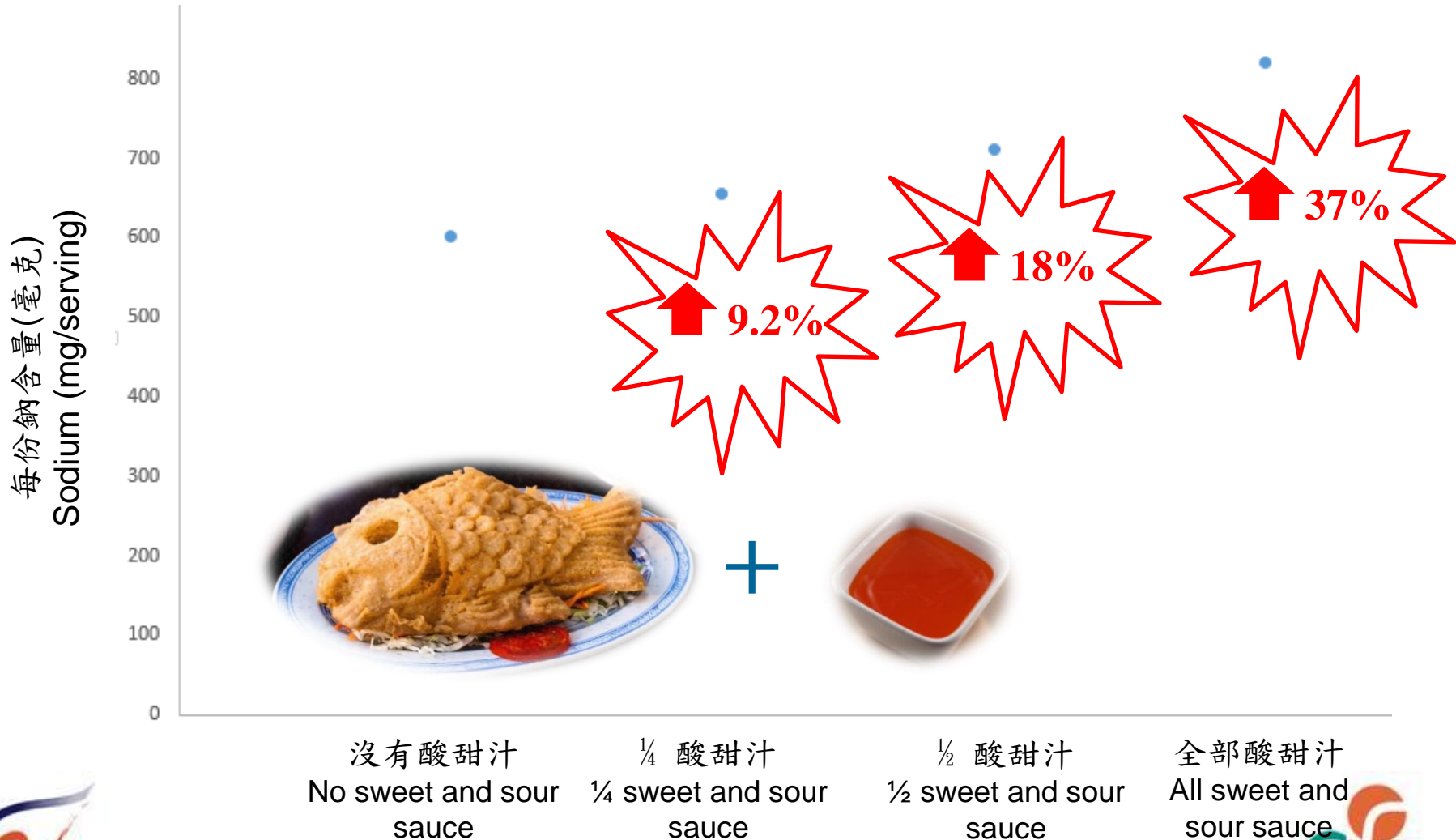
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含脂肪的素肉



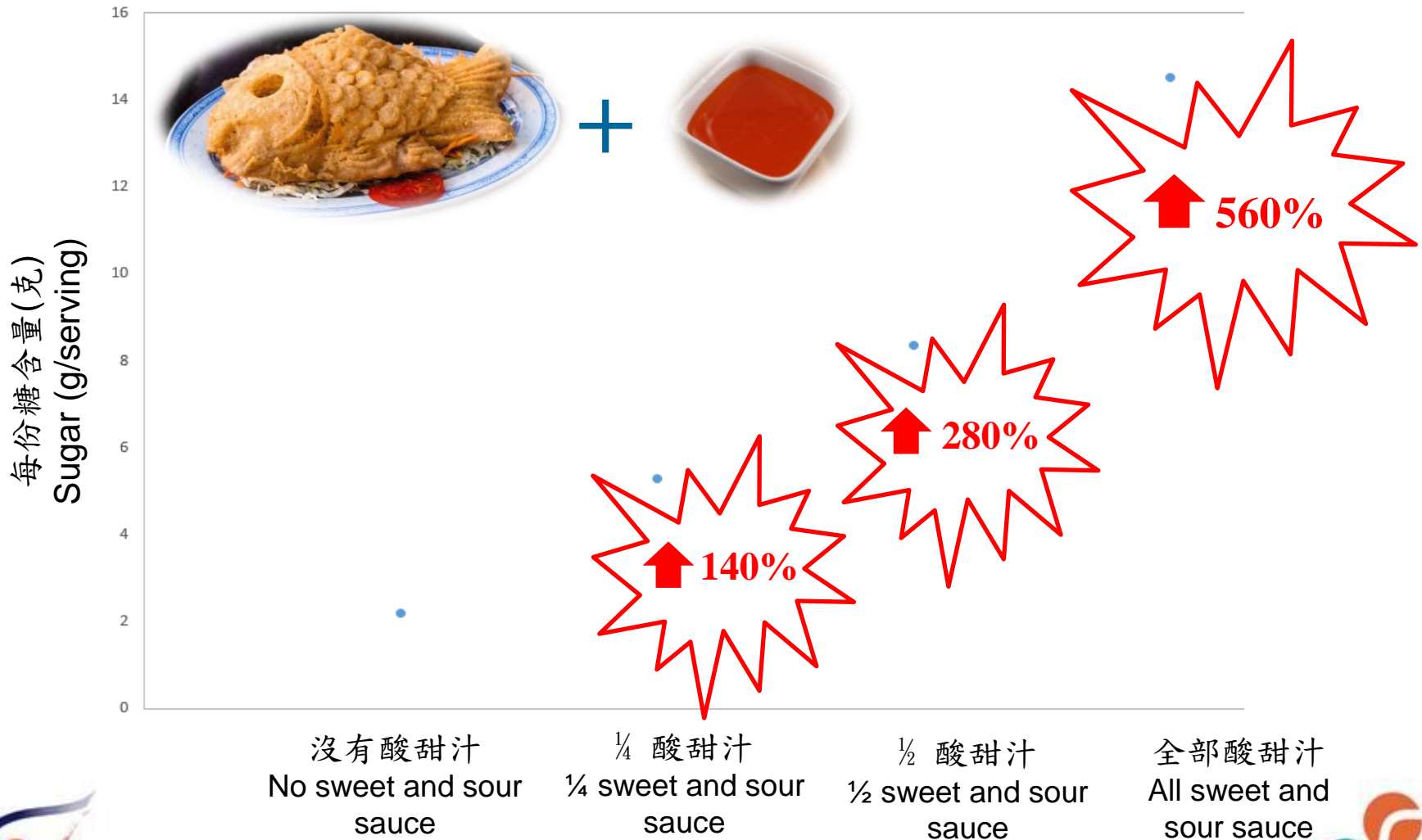
蘸酸甜汁後的芋頭魚的鈉含量

Sodium Content of Vegetarian Taro Fish with Sweet and Sour Sauce



蘸酸甜汁後的芋頭魚的糖含量

Sugar Content of Vegetarian Taro Fish with Sweet and Sour Sauce



兩人於食肆分享中式素菜

Two people sharing Chinese style vegetarian dishes in a restaurant



粟米素魚塊



炆菜心(走油走鹽)



菠蘿素咕嚕肉



	整餐每人攝入量 Intake per person for whole meal	佔世衛建議每日攝取限量百分比 (以每日攝取2,000千卡能量計) % WHO recommended daily intake upper limit (based on a 2000-kcal diet)
鈉(毫克) / Sodium (mg)	1200	61%
糖(克) / Sugar (g)	26	51%
總脂肪(克) / Total fat (g)	45	69%
飽和脂肪(克) / Sat fat (g)	7.1	32%
能量(千卡) / Energy (kcal)	990	49%

一人於食肆進食西式素菜

One person having Western style vegetarian dishes in a restaurant



低糖汽水



素漢堡包



細薯條

	整餐攝入量 Intake for whole meal	佔世衛建議每日攝取限量百分比 (以每日攝取2,000千卡能量計) % WHO recommended daily intake upper limit (based on a 2000-kcal diet)
鈉(毫克) / Sodium (mg)	1300	67%
糖(克) / Sugar (g)	26	53%
總脂肪(克) / Total fat (g)	42	63%
飽和脂肪(克) / Sat fat (g)	15	68%
能量(千卡) / Energy (kcal)	860	43%

素漢堡包與牛肉漢堡包的營養含量比較

Comparison of nutrient content in Veggie burger vs. Beef burger

- 素漢堡包的平均鈉含量高於牛肉漢堡包。
- 而素漢堡包的平均總脂肪及能量含量則低於牛肉漢堡包。
- Veggie burger have higher sodium content compared to Beef burger.
- Veggie burger have lower total fat and energy contents compared to Beef burger.

每100克 Per 100g	鈉(毫克) Sodium (mg)	糖(克) Sugar (g)	總脂肪(克) Total fat (g)	能量(千卡) Energy (kcal)
素漢堡包 Veggie burger	420	3.4	12	220
牛肉漢堡包 Beef burger	350	3.0	16	260



總結 Summary

- 一般素菜的鈉和脂肪含量不算高。然而，有個別素菜含較高鈉或脂肪。
- 個別同款式素菜的鈉含量差異甚大。這表示業界減低這些素菜的鈉含量是切實可行的。
- 油炸等烹調程序會導致素菜的總脂肪含量增加。
- 蘸汁增加鈉和糖的攝取量。業界應把醬汁和素菜分開端上。
- Vegetarian dishes in generally are not high in sodium and fat. However, some vegetarian dishes have relatively higher sodium or fat contents.
- There are large variations in the sodium contents within the same type of vegetarian dishes. This reflects the possibility for the trade to reduce the sodium contents in these vegetarian dishes.
- Cooking methods such as deep frying increases the total fat content in vegetarian dishes.
- Consuming vegetarian dishes with sauce increases sodium and sugar intake. The trade should consider serving sauce separately from vegetarian dishes



給消費者的建議 Advice to Consumers (1)

- 經油炸烹調的素菜的總脂肪含量較高，消費者可減少進食此類素菜。
- 進食時可先嘗一嘗食物的味道才決定要否蘸汁。而當蘸汁時，輕蘸少量為佳。
- 點餐時，要求食肆配製食物時「少鹽」。
- Vegetarian dishes that are deep fried have higher total fat contents. Reduce the intake of these vegetarian dishes.
- Taste the food before dipping in sauce. Dip lightly in sauce, if needed.
- Ask for “less salt” or “less salty” option of the food when ordering.



給消費者的建議 Advice to Consumers (2)

- 留意素菜的分量，如分量較大，可考慮減少點菜數量，或考慮將部分素菜放入自備餐盒，並盡快貯存於雪櫃內。
- 除留意素菜的鈉含量外，亦應留意其他營養成分例如糖、脂肪、能量，以保持均衡和多元化的飲食。
- Beware of the portion size of vegetarian dishes. When the portion size is large, consider ordering less dishes, or store the leftover in a container and keep it under refrigeration as soon as possible.
- Other than the sodium content in vegetarian dishes, also pay attention to other nutrient contents such as sugar, fat and energy to maintain a balanced diet with variety.



給業界的建議 Advice to Trade (1)

- 選用較低鈉和脂肪的原材料(如低鈉和低脂肪素肉)。
 - 添加醬汁增加素菜的鈉和糖含量，因此業界應把醬汁分開端上。
 - 提供每碟含較少分量（如輕量版）的素菜，讓消費者按所需的分量來選擇。
- Choose raw ingredients with lower sodium and fat contents (such as low sodium and low fat vegetarian meat) .
 - Adding sauce to vegetarian dishes increases the sodium and sugar content, therefore sauce should be served separately.
 - Offer vegetarian dishes in smaller portion size for consumers to choose based on their needs.



給業界的建議 Advice to Trade (2)

- 選用較健康的植物油(例如粟米油、芥花籽油、橄欖油和花生油)。避免用含高飽和脂肪的植物油(例如椰子油、棕櫚油和固體狀的植物油)。
- 業界可參考中心的《降低食物中鈉含量的業界指引》及《降低食物中糖和脂肪含量的業界指引》，改良製作過程及轉變配料，以減少素菜的鈉、糖和脂肪含量。
- Choose healthier vegetable oils (such as corn oil, canola oil, olive oil and peanut oil). Avoid vegetable oils that are high in saturated fat (such as coconut oil, palm oil and vegetable oil in solid state).
- Reduce the sodium, sugar and fat contents of vegetarian dishes through modification of preparation methods and use of ingredients by making reference to the CFS' "Trade Guidelines for Reducing Sodium in Foods" and "Trade Guidelines for Reducing Sugar and Fats in Foods".



謝謝
Thank You

