

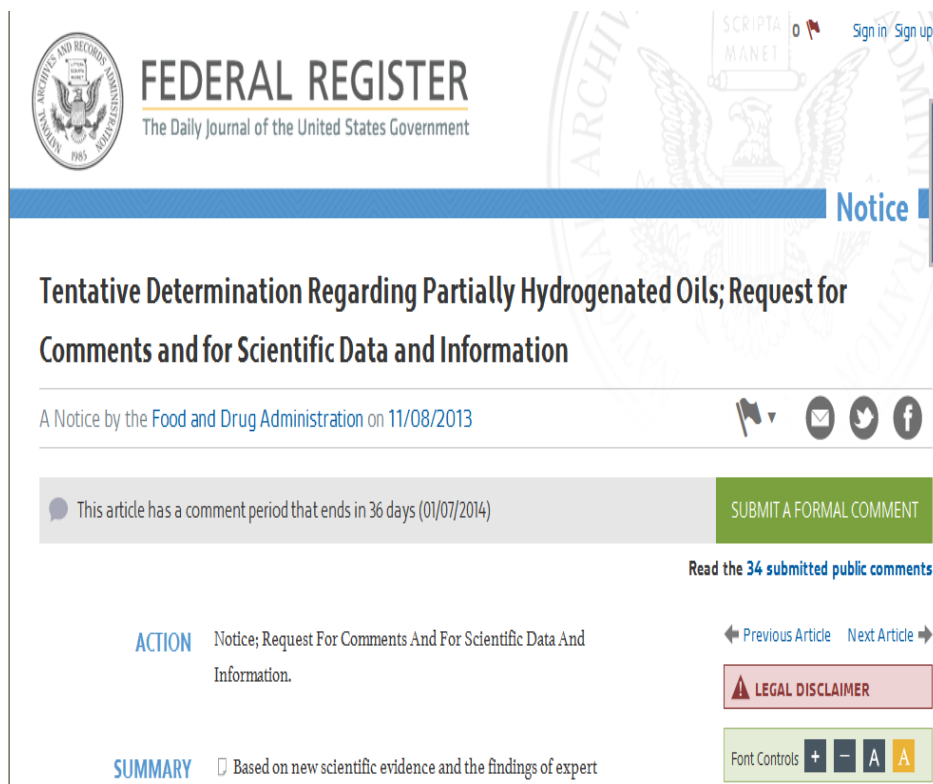
# 減少食物中的反式脂肪含量 Reducing the Content of Trans Fatty Acids in Local Foods

業界諮詢論壇  
Trade Consultation Forum

18.12.2013

# 美國政府禁用人工反式脂肪？

## Does the US Government Ban the Use of Trans Fat?



**FEDERAL REGISTER**  
The Daily Journal of the United States Government

**Notice**

### Tentative Determination Regarding Partially Hydrogenated Oils; Request for Comments and for Scientific Data and Information

A Notice by the Food and Drug Administration on 11/08/2013

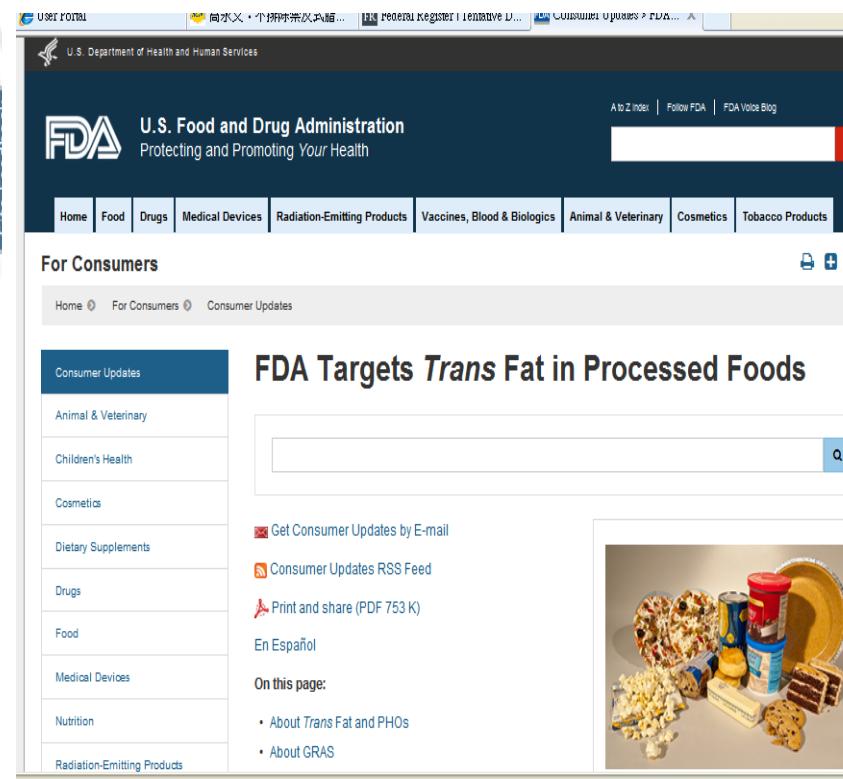
This article has a comment period that ends in 36 days (01/07/2014)

**SUBMIT A FORMAL COMMENT**

Read the **34** submitted public comments

**ACTION** Notice; Request For Comments And For Scientific Data And Information.

**SUMMARY** Based on new scientific evidence and the findings of expert



**U.S. Food and Drug Administration**  
Protecting and Promoting Your Health

**For Consumers**

### FDA Targets *Trans* Fat in Processed Foods

Get Consumer Updates by E-mail  
Consumer Updates RSS Feed  
Print and share (PDF 753 K)  
En Español

On this page:  
• About *Trans* Fat and PHOs  
• About GRAS

<https://www.federalregister.gov/articles/2013/11/08/2013-26854/tentative-determination-regarding-partially-hydrogenated-oils-request-for-comments-and-for>;  
<http://www.fda.gov/forconsumers/consumerupdates/ucm372915.htm>



# 美國食物及藥物管理局列舉的事實 (1)

## The Fact From the US Food and Drug Administration (1)

- 在美國，基於業界自以為使用部分氫化油 (PHOs) 是 “普遍認為安全” (GRAS) 的，多年來一直使用部分氫化油生產食品。
- In the US, partially hydrogenated oils (PHOs) have been used in food for many years based on self-determinations by industry that such use is "generally recognized as safe (GRAS)".
- 部分氫化油是工業產生的反式脂肪之主要膳食來源，與增加冠心病的風險相關。
- PHOs are the primary dietary source of industrially-produced TFA which is associated with increased risk of coronary heart disease.
- 基於目前的科學證據證明反式脂肪的攝取與健康風險有關，因此美國食物及藥物管理局(FDA)初步裁定，部分氫化油不再是 “普遍認為安全” 的食品原料，而是食物添加劑。
- US FDA tentatively determined PHOs are not GRAS for any use in food based on current scientific evidence establishing the health risks associated with the consumption of TFA, and therefore that PHOs are food additives.



# 美國食物及藥物管理局列舉的事實(2)

## The Fact From the US FDA (2)

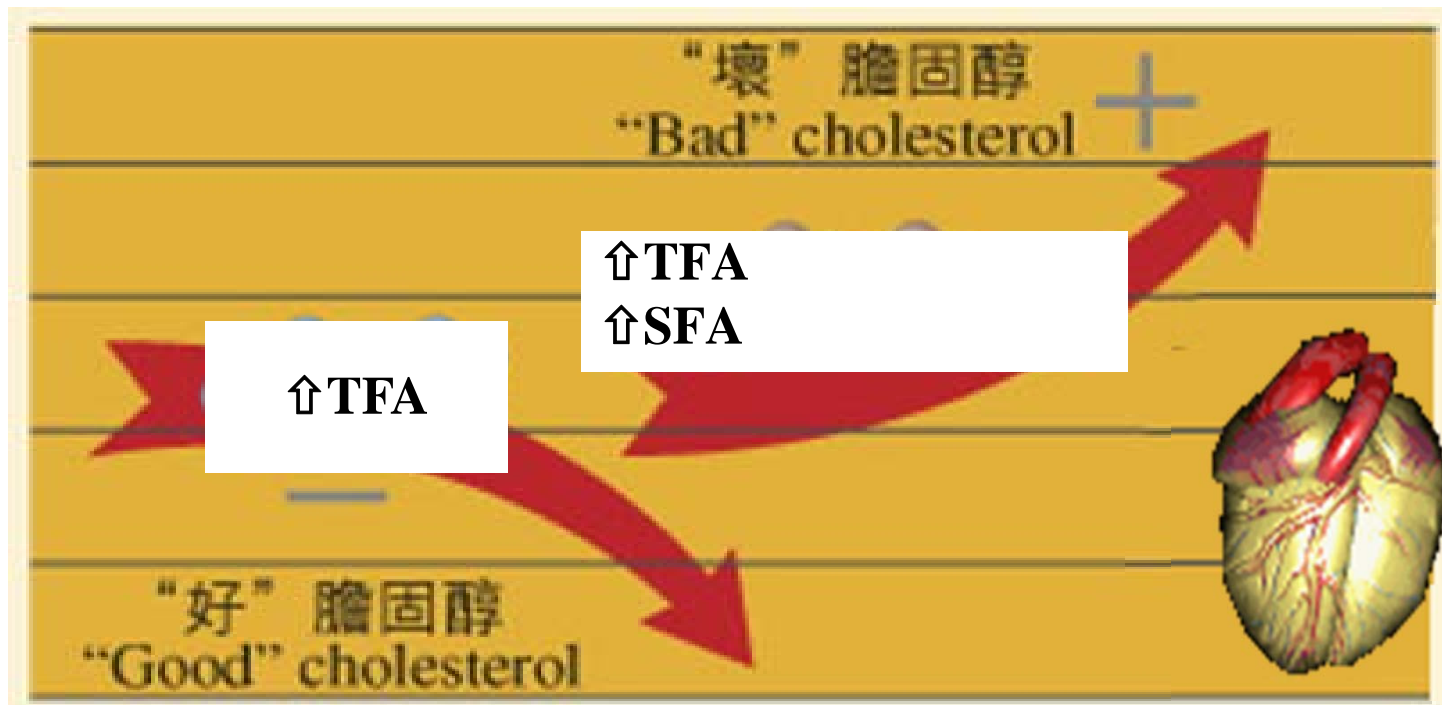
- FDA已經開始了60天的徵求意見期(至2014年1月7日)，以收集更多的數據，以及徵詢此裁定一旦定案後，食品製造商為目前含有人造反式脂肪的產品重新研製配方所需要的時間。
- FDA has opened a 60-day comment period (till 7 January 2014) to collect additional data and to gain input on the time potentially needed for food manufacturers to reformulate products that currently contain artificial TFA should this determination be finalised.
- 若此初次裁定最終通過的話，今後部分氫化油在美國將被視為食物添加劑，除非獲得FDA批准，否則食物生產商不得直接售賣或用作食物原料。
- If finalised, this would mean that food manufacturers would no longer be permitted to sell PHOs, either directly or as ingredients in another food product, without prior FDA approval for use as a food additive.



# 反式脂肪增加心臟病風險

## TFA Increase Risk of Heart Diseases

- 心臟病：自2001年以來本港的第二大殺手
- Heart diseases: 2<sup>nd</sup> killer in HK since 2001



# 世界衛生組織的建議

## World Health Organization Recommendations

### 『飲食、身體活動與健康全球戰略』

- 應限制來自總脂肪的能量
- 攝入脂肪的來源，從飽和脂肪轉向不飽和脂肪
- 逐步消除反式脂肪

### “Global Strategy on Diet, Physical Activity and Health”

- Energy intake from **total fat** should be limited
- Fat consumption should be shifted away from SFA to **unsaturated fat**
- Towards the **elimination of TFA**

<http://www.who.int/dietphysicalactivity/diet/en/>

<http://www.who.int/dietphysicalactivity/diet/zh/index.html>



# 世衛/聯合國糧食及農業組織的建議

## WHO/Food and Agriculture Organization of the United Nations Recommendations

- 為了促進心血管健康，飲食中只應包括極小量的反式脂肪(氫化過的油和脂肪)，實際上，這意味著攝入量不到每天能量攝取量的1%。
- 飽和脂肪的攝入量應少於人體每天攝入能量的10%。
- 以每天攝入2000千卡能量的人為例
  - 反式脂肪的每天攝入量應少於2.2克
  - 飽和脂肪的每天攝入量應少於20克
- To promote cardiovascular health, diets should **provide a very low intake of TFA** (hydrogenated oils and fats). In practice, this implies an intake of **less than 1% of daily energy intake**.
- **Less than 10%** of daily energy intake should come from SFA.
- For example, an individual with a daily energy intake of **2000 kcal**
  - Daily intake of TFA should be limited to less than 2.2g
  - Daily intake of SFA should be limited to less than 20g

<http://www.fao.org/WAIRDOCS/WHO/AC911C/AC911C00.htm>

[http://whqlibdoc.who.int/trs/who\\_trs\\_916.pdf](http://whqlibdoc.who.int/trs/who_trs_916.pdf)





# 反式脂肪從何來？

## Where do TFA Come from?

1. 在植物油的氫化過程中產生
    - 延長油的保質期和增加食物的口感
  2. 由不飽和脂肪在反芻動物(如牛、羊)的胃內經細菌轉化而成
    - 天然存在於牛和羊的脂肪及乳製品如牛奶、牛油、芝士及忌廉等
  3. 在精煉植物油過程中產生
1. Formed during industrial hydrogenation of vegetable oils
    - Extend shelf-life of oils and improve texture of food
  2. Bacterial transformation of unsaturated fatty acids in the stomach of ruminants (e.g. cattle, sheep)
    - Found naturally in the fats of cattle and sheep, and their dairy products (e.g. milk, butter, cheese, cream, etc)
  3. Formed during refining of vegetable oils





# 與反式脂肪有關的工作

## TFA-related Work

1. 研究食物中的反式脂肪含量  
Research on TFA content in foods
2. 業界指引  
Trade guidelines
3. 營養標籤制度  
Nutrition Labelling Scheme
4. 公眾教育  
Publication



# 研究食物中的反式脂肪含量

## Research on TFA Content in Foods

- 於2007、2008、2009及2012年間，分別與消委會進行三次聯合研究，及一次食安中心風險評估研究

- Three joint Consumer Council studies and one risk assessment study had been conducted in 2007, 2008, 2009 and 2012 respectively.



# 本地食物的反式脂肪(2012)研究結果

## Study Results on the TFA in Local Foods (2012)

- 四大類別(共84個)樣本的整體反式脂肪平均含量為每100克0.30克。平均含量最高類別依次為:

- 西餅／蛋糕類
- 蛋撻／批／酥皮類
- 麵包類
- 其他類別

- 部分同款同類食品的反式脂肪含量差異很大



- Overall mean TFA content for 4 categories (total 84) samples was 0.30g/100g. In decreasing order:

- Cake
- Egg tart/pie/pastry
- Bread
- Others

- TFA content among some individual samples of the same food item varied dramatically

反式脂肪減少了，  
是否由飽和脂肪取代？  
**TFA simply replaced by SFA?**



- 部分氫化植物油 → 完全氫化植物油？
- 人造牛油、起酥油 → 牛油、豬油？
- Partially → Fully hydrogenated vegetable oils?
- Margarine, Shortening → Butter, Lard?



# 與過往研究結果比較

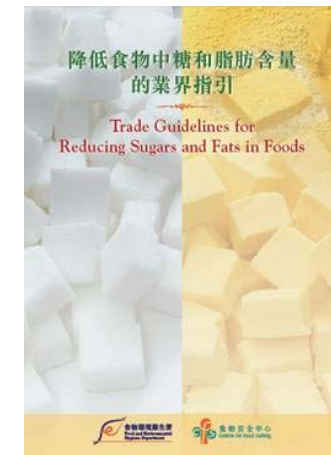
## As Compared with the Results of Previous Studies

- 研究的四大類別食物樣本的反式脂肪平均含量有大幅下降趨勢，反映出業界減低食物中反式脂肪含量的成果。
- There has been a large reduction in the mean TFA contents in the four food categories covered, reflecting the positive effect of the trade's effort in reducing TFA level in their products.
- 個別樣本的反式脂肪含量比過往研究結果大為降低而其飽和脂肪含量則相若，反映出業界減少食物中的反式脂肪而不增加飽和脂肪是切實可行的。
- TFA content in some individual samples has reduced dramatically whilst a similar SFA content has been maintained, reflecting that the reduction in TFA without raising the SFA content in foods is practically feasible.



# 業界指引 Trade Guidelines

- 《減少食物中的反式脂肪業界指引》於2008年4月發表：鼓勵和協助業界減少食物中的反式脂肪
- *Trade Guidelines on Reducing Trans Fats in Food* released in April 2008: To encourage the trade and assist them in reducing TFA content in their food products
- 《降低食物中糖和脂肪含量的業界指引》於2012年11月發表：協助業界生產和推廣較低脂肪含量的食物
- *Trade Guidelines for Reducing Sugars and Fats in Foods* released in November 2011: To help the trade produce and promote products which have lower fat content





# 《減少食物中的反式脂肪業界指引》

## *Trade Guidelines on Reducing Trans Fats in Food*

- 了解食物中的反式脂肪及／或飽和脂肪來源
  - 改用較健康的替代品
  - 減低食物中的脂肪總含量
- 
- Realise the source of trans and/or saturated fats in food
  - Replace with healthier alternatives
  - Reduce the total fat content of food

[http://www.cfs.gov.hk/english/food\\_leg/files/trans-fats-guide-e.pdf](http://www.cfs.gov.hk/english/food_leg/files/trans-fats-guide-e.pdf)

[http://www.cfs.gov.hk/tc\\_chi/food\\_leg/files/trans-fats-guide-c.pdf](http://www.cfs.gov.hk/tc_chi/food_leg/files/trans-fats-guide-c.pdf)





# 《降低食物中糖和脂肪含量的業界指引》

## *Trade Guidelines for Reducing Sugars & Fats in Foods*

- 如有選擇，應選用較低脂肪含量的配料。有關資料可查詢供應商，查閱產品的營養標籤，或檢索一些食物成分資料庫(例如食物安全中心的營養資料查詢系統)。
- 把糖／糖漿及塗醬／沙律醬與食物分開放置，讓顧客按其口味添加於食物。
- 遵從世衛的建議，限制高脂肪食物和飲料的市場推銷或廣告宣傳，特別是針對兒童的推銷/廣告。
- Choose **ingredients with lower fats content** if available. The information could be obtained from the **suppliers**, the **nutrition labels** of the products, or some **food composition databases**, such as the Nutrient Information Inquiry System from the Centre for Food Safety.
- Serve sugar/syrup and spread/salad dressings separately for customers to add into the foods according to their tastes.
- Follow WHO advice on restricting the marketing or advertising of foods and beverages high in sugars/fats, especially to children.



# 本港有關食品中反式脂肪的規管

## Regulatory Control on TFA in Foods in Hong Kong

- 自2010年7月1日起，根據營養標籤制度，所有適用的預先包裝食物須標示反式脂肪、能量及其他6種營養素的含量。此外，有關反式脂肪的營養聲稱必須符合指定條件。
- 目前本港並未有特定法例限制食物中反式脂肪的含量。
- Since 1 July 2010, according to the nutrition labelling scheme, nutrition labels setting out the content of **TFA**, energy and 6 other nutrients have become mandatory for all applicable prepackaged food products. In addition, **nutrition claims** on TFA should meet relevant specified criteria.
- There is no specific regulation that restricts the TFA content in food in HK.



# 給業界的建議

## Advice to Trade

- 避免採用部分氫化油及其產品製造食品。
- 改良製作過程或配料，以減少食物內的反式脂肪及飽和脂肪含量。
- 參考《減少食物中反式脂肪業界指引》及《降低食物中糖和脂肪含量的業界指引》，生產和推廣既健康又可供安全食用，而脂肪含量較低的食物。
- Avoid using partially hydrogenated oils or their products in preparing foods.
- Modify the manufacturing process or ingredients to lower TFA and SFA contents in foods.
- Make reference to the *Trade Guidelines on Reducing Trans Fat in Food* and the *Trade Guidelines for Reducing Sugars and Fats in Foods* for manufacturing and promoting wholesome foods with lower fat contents.

