

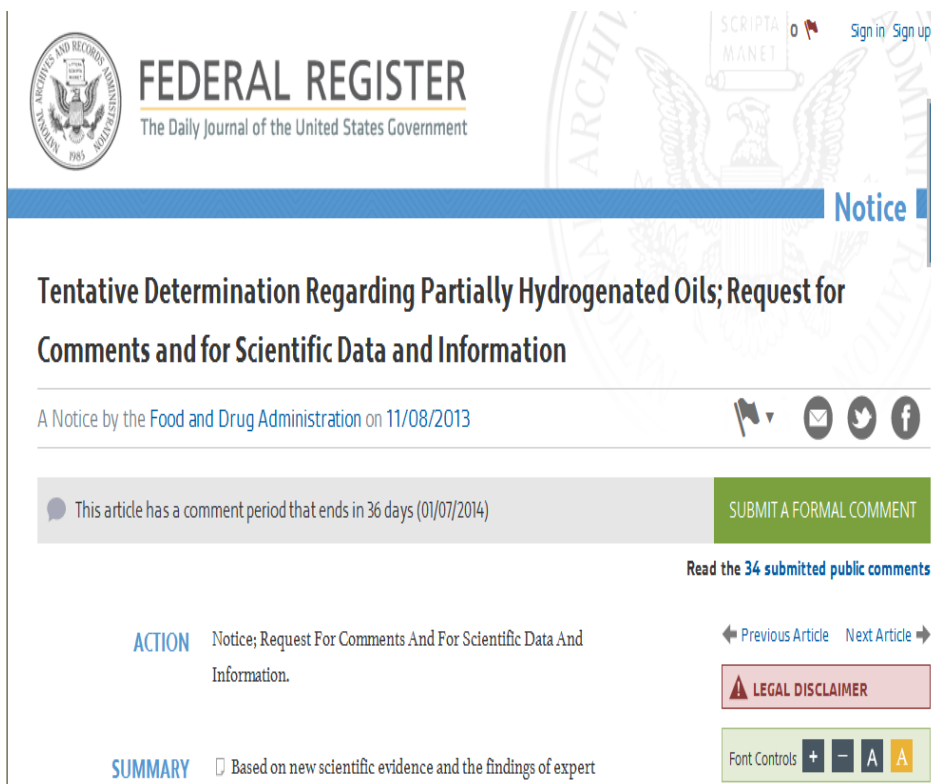
减少食物中的反式脂肪含量 Reducing the Content of Trans Fatty Acids in Local Foods

业界咨询论坛
Trade Consultation Forum

18.12.2013

美国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

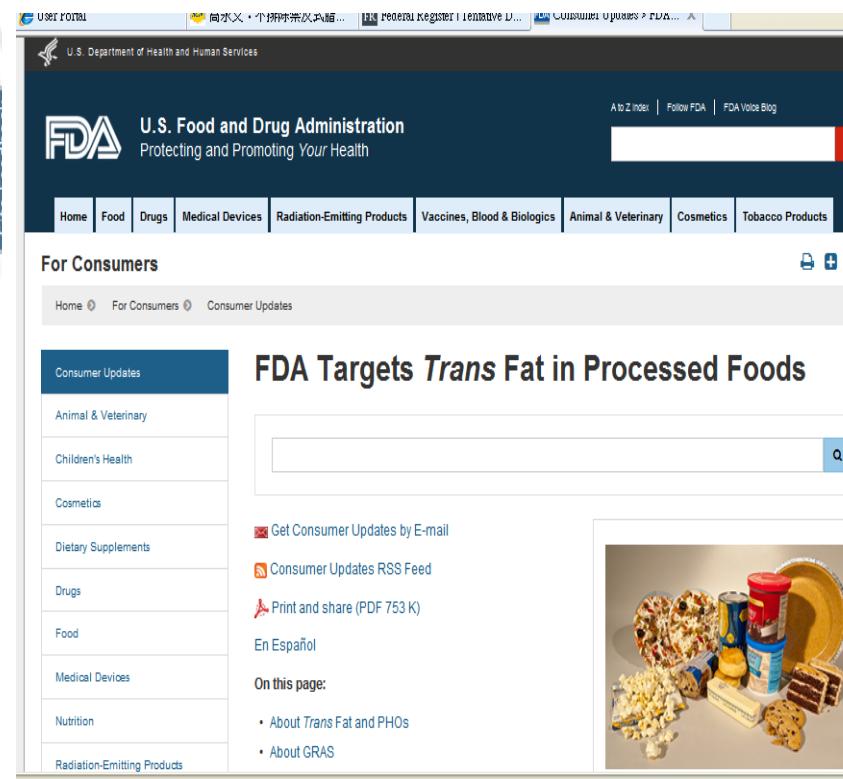
This article has a comment period that ends in 36 days (01/07/2014)

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

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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>



美国食物及药物管理局列举的事实 (1)

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

- 在美国，基于业界自以为使用部分氢化油 (PHOs) 是“普遍认为安全” (GRAS) 的，多年来一直使用部分氢化油生产食品。
- 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)".
- 部分氢化油是工业产生的反式脂肪之主要膳食来源，与增加冠心病的风险相关。
- PHOs are the primary dietary source of industrially-produced TFA which is associated with increased risk of coronary heart disease.
- 基于目前的科学证据证明反式脂肪的摄取与健康风险有关，因此美国食物及药物管理局(FDA)初步裁定，部分氢化油不再是“普遍认为安全”的食品原料，而是食物添加剂。
- 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.



美国食物及药物管理局列举的事实(2)

The Fact From the US FDA (2)

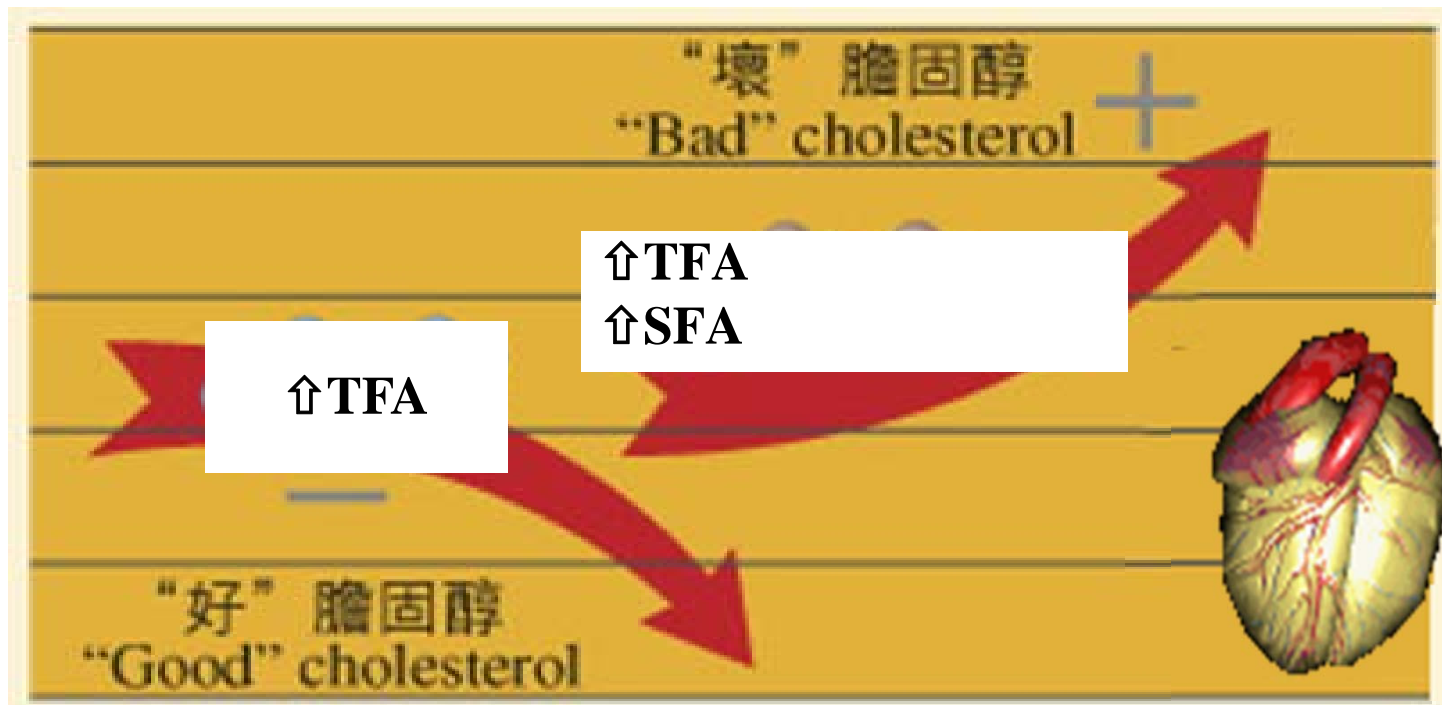
- FDA已经开始了60天的征求意见期(至2014年1月7日)，以收集更多的数据，以及征询此裁定一旦定案后，食品制造商为目前含有人造反式脂肪的产品重新研制配方所需要的时间。
- FDA has opened a 60-day comment period (till 7 January 2014) to collect additional data and to gain input on the time potentially needed for food manufacturers to reformulate products that currently contain artificial TFA should this determination be finalised.
- 若此初次裁定最终通过的话，今后部分氢化油在美国将被视为食物添加剂，除非获得FDA批准，否则食物生产商不得直接售卖或用作食物原料。
- 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.



反式脂肪增加心脏病风险

TFA Increase Risk of Heart Diseases

- 心脏病：自2001年以来本港的第二大杀手
- Heart diseases: 2nd killer in HK since 2001



世界卫生组织的建议

World Health Organization Recommendations

『饮食、身体活动与健康全球战略』

- 应限制来自总脂肪的能量
- 摄入脂肪的来源，从饱和脂肪转向不饱和脂肪
- 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>



世卫/联合国粮食及农业组织的建议

WHO/Food and Agriculture Organization of the United Nations Recommendations

- 为了促进心血管健康，饮食中只应包括极小量的反式脂肪(氢化过的油和脂肪)，实际上，这意味着摄入量不到每天能量摄取量的1%。
- 饱和脂肪的摄入量应少于人体每天摄入能量的10%。
- 以每天摄入2000千卡能量的人为例
 - 反式脂肪的每天摄入量应少于2.2克
 - 饱和脂肪的每天摄入量应少于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



反式脂肪从何来？

Where do TFA Come from?

1. 在植物油的氢化过程中产生
 - 延长油的保质期和增加食物的口感
 2. 由不饱和脂肪在反刍动物(如牛、羊)的胃内经细菌转化而成
 - 天然存在于牛和羊的脂肪及乳制品如牛奶、牛油、芝士及忌廉等
 3. 在精炼植物油过程中产生
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



与反式脂肪有关的工作

TFA-related Work

1. 研究食物中的反式脂肪含量
Research on TFA content in foods
2. 业界指引
Trade guidelines
3. 营养标签制度
Nutrition Labelling Scheme
4. 公众教育
Publication



研究食物中的反式脂肪含量

Research on TFA Content in Foods

- 于2007、2008、2009及2012年间，分别与消委会进行三次联合研究，及一次食安中心风险评估研究

- 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)研究成果

Study Results on the TFA in Local Foods (2012)

- 四大类别(共84个)样本的整体反式脂肪平均含量为每100克0.30克。平均含量最高类别依次为:

- 西饼/蛋糕类
- 蛋挞/批/酥皮类
- 面包类
- 其他类别

- 部分同款同类食品的反式脂肪含量差异很大



- 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

反式脂肪减少了，
是否由饱和脂肪取代？
TFA simply replaced by SFA?



- 部分氢化植物油 → 完全氢化植物油？
- 人造牛油、起酥油 → 牛油、猪油？
- Partially → Fully hydrogenated vegetable oils?
- Margarine, Shortening → Butter, Lard?



与过往研究结果比较

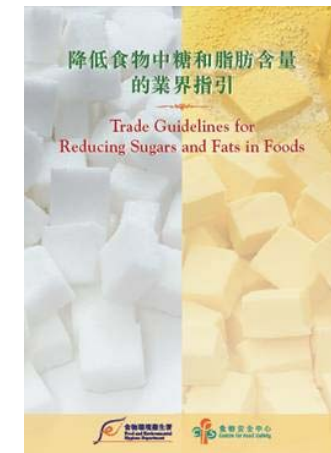
As Compared with the Results of Previous Studies

- 研究的四大类别食物样本的反式脂肪平均含量有大幅下降趋势，反映出业界减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.
- 个别样本的反式脂肪含量比过往研究结果大为降低而其饱和脂肪含量则相若，反映出业界减少食物中的反式脂肪而不增加饱和脂肪是切实可行的。
- 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.



业界指引 Trade Guidelines

- 《减少食物中的反式脂肪业界指引》于2008年4月发表：鼓励和协助业界减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业界指引》于2012年11月发表：协助业界生产和推广较低脂肪含量的食物
- *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



《减少食物中的反式脂肪业界指引》

Trade Guidelines on Reducing Trans Fats in Food

- 了解食物中的反式脂肪及／或饱和脂肪来源
 - 改用较健康的替代品
 - 减低食物中的脂肪总含量
-
- 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/tc_chi/food_leg/files/trans-fats-guide-c.pdf



《降低食物中糖和脂肪含量的业界指引》

Trade Guidelines for Reducing Sugars & Fats in Foods

- 如有选择，应选用较低脂肪含量的配料。有关资料可查询供货商，查阅产品的营养标签，或检索一些食物成分数据库(例如食物安全中心的营养数据查询系统)。
- 把糖／糖浆及涂酱／沙律酱与食物分开放置，让顾客按其口味添加于食物。
- 遵从世卫的建议，限制高脂肪食物和饮料的市场推销或广告宣传，特别是针对儿童的推销/广告。
- 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.



本港有关食品中反式脂肪的规管

Regulatory Control on TFA in Foods in Hong Kong

- 自2010年7月1日起，根据营养标签制度，所有适用的预先包装食物须标示反式脂肪、能量及其他6种营养素的含量。此外，有关反式脂肪的营养声称必须符合指定条件。
- 目前本港并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.



给业界的建议

Advice to Trade

- 避免采用部分氢化油及其产品制造食品。
- 改良制作过程或配料，以减少食物内的反式脂肪及饱和脂肪含量。
- 参考《减少食物中反式脂肪业界指引》及《降低食物中糖和脂肪含量的业界指引》，生产和推广既健康又可供安全食用，而脂肪含量较低的食物。
- 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.

