

食物安全焦點

Food Safety Focus



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Centre for Food Safety

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Food Colours and Hyperactivity in Children

食物安全中心

風險評估組

科學主任馬嘉明女士報告

Reported by Ms. Janny MA, Scientific Officer,

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由二零一零年七月二十日起，在歐盟成員國出售的食物如含有某些人工食用色素，必須加上“可能對兒童的行為及專注力有不良影響”的警告字樣。本文旨在介紹促成這項決定的背景，並論述本港意見。

南安普敦研究

自七十年代起，已有不少研究關於人工食用色素對兒童過度活躍情況的影響。二零零七年，英國南安普敦大學研究人員發表的研究備受關注。

在南安普敦研究中，一組三歲和一組八至九歲的兒童獲提供含有混合不同劑量的人工色素的飲品飲用。這些是常用於各類食物（包括兒童喜愛的糖果及汽水等）的色素。根據兒童在其後行為和專注力的改變，研究人員得出結論為兒童從食物攝取食用色素混合物會令過度活躍情況增加。



兒童至愛的彩色糖果

Some children's favourite: colourful sweets

From 20 July 2010, foods to be sold in member countries of the European Union are required to put up a warning statement "may have an adverse effect on activity and attention in children" if they contain certain artificial food colours. This article provides the background information that leads to the decision and also discusses the local views.

The Southampton Study

Since the 70s, a number of studies have been conducted on the effect of artificial food colours on hyperactivity in children. A study published in 2007 by researchers from Southampton University in the UK received much attention.

In the Southampton study, a group of three-year-old children and a group aged eight to nine years old were given drinks containing mixture of artificial colours at different doses. These colours are commonly used in various foods including children's favourites e.g., confectioneries and soft drinks. Based on the changes on activity and attention of these children, the researchers concluded that exposure to food colour mixtures in the diet resulted in increased hyperactivity in children.

表一. 南安普敦研究指可能與兒童過度活躍情況有關的人工食用色素

Table 1. Artificial food colours which may link to hyperactivity in children as suggested by the Southampton study

名稱 Name	食物添加劑國際編碼系統編號 International Numbering System for Food Additives (INS) No.	顏色 Colour
誘惑紅 AC (Allura red AC)	129	紅色 Red
淡紅 (Carmoisine)	122	紅色 Red
麗春紅4R (Ponceau 4R)	124	紅色 Red
喹啉黃 (Quinoline yellow)	104	黃色 Yellow
日落黃 FCF (Sunset yellow FCF)	110	黃色 Yellow
檸檬黃 (Tartrazine)	102	黃色 Yellow

對研究的解讀

一如許多國家，本港亦准許研究涵蓋的所有食用色素用於食物中。食物安全中心（中心）徵詢食物安全專家委員會（專家委員會）對此研究的意見。

專家委員會認同應密切注意研究發展，但同時亦留意到該項研究本身存在不少局限，加上科學上不確定的因素，故專家委員會認為食用色素與兒童行為轉變之

Implications of the Study

Like many countries, all food colours studied are permitted for use in food locally. The CFS asked the [Expert Committee on Food Safety](#) (Expert Committee) for their advice on this study.

The Expert Committee, while agreed that the matter deserved close observation, observed a number of inherent limitations in the study and scientific uncertainties such that a causal link between food colours and behavioural changes in children could not be established. To this end, the current



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Incident in Focus

間的因果關係難以成立。從風險管理角度而言，現時的規管切合需要，但為審慎起見，可向市民提供資訊及建議以便在選擇食物時(尤其是兒童的食物)作出知情的選擇。

專家委員會與許多海外食物當局的意見一致。一些食物當局，例如澳洲及紐西蘭食品標準管理局和美國食物及藥物管理局，認為兒童單單從食物中停止攝取這些添加劑未必就能消除上述症狀，因此未有計劃採取任何行動。不過，亦有一些食物當局(例如本文開首提及的歐盟)決定採取預防措施，英國亦正鼓勵業界自願逐步停用這些色素。

食用色素

食用色素經常會因不同緣故而被用於食物中以添加或保存顏色，例如彌補在食物加工過程中流失的顏色；修正天然色差；改善天然色素，以及為食物增添討人喜愛的顏色。換言之，食用色素令食物的賣相更加可觀吸引。如果沒有食用色素，大家可能發現檸檬梳打不是黃色，士多啤梨雪糕不是粉紅色，而糖果亦不會是五顏六色。

有些食物製造商會選擇人工色素而非天然色素，因為前者在不同環境中的穩定性高，而且成本較低。

何謂過度活躍？

過度活躍是一種行為模式，其特徵是多動難靜、專注力不足和魯莽衝動，而活躍程度的差異甚大，由表面上看來大致正常至極度活躍不等，當中極端例子可能符合專注力不足及過度活躍症的診斷標準。

專注力不足及過度活躍症的症狀一般在幼兒期已表現出來，患者的獨特行為模式會影響他們在家中或學校的學習和活動能力。兒童的過度活躍情況成因很多，包括遺傳和環境因素。

如何知道食物是否含有食用色素？

根據《食物及藥物(成分組合及標籤)規例》的規定，預先包裝食物如使用添加劑(包括食用色素)，必須在配料表上列明其名稱或識別編號及作用類別(例如色素)。消費者可參考中心出版的《食物添加劑消費者指南》，就能知道以識別編號標示的食物添加劑。

注意要點：

1. 專家認為南安普敦研究有不少局限和不確定因素，當中食用色素與兒童行為轉變之間的因果關係難以成立。
2. 父母為子女選擇食物時，可查看配料表，作出知情的選擇。

給市民的建議

- 保持均衡飲食，以免過量攝取某些食物添加劑，包括食用色素。
- 查看預先包裝食物上的標籤，尤其是配料表，從而作出明智選擇。

給業界的建議

- 確保所有出售的食品符合本港規例，包括食物添加劑及標籤規定。
- 奉行優良製造規範，使用所需的最低食用色素分量。
- 考慮減少使用有關人工食用色素，或改用天然食用色素或其他色素。

regulatory control in terms of risk management is considered appropriate yet it is prudent to provide advice to the public for making informed food choices, especially for their children.

The Expert Committee's views concurred with those of many overseas food authorities. Some authorities e.g. Food Standards Australia New Zealand and U.S. Food and Drug Administration remark simply taking these additives out of a child's diet may not eliminate these symptoms and thus have no plan to take any actions. Nevertheless, some authorities, such as the European Union as cited in the beginning of the article, decided to take precautionary measures. The UK is also promoting the voluntary phase out of these colours by the industry.

Food Colours

Food colours are often put into food to add or restore its colour for a number of reasons. For instance, food colours can compensate colour loss during food processing, correct natural colour variations, improve naturally occurring colours and provide certain desirable colour. In other words, food colours make food more attractive and appetising; without them you may find lemon soda not yellow, strawberry ice-cream not pink and candies not colourful.

Artificial colours are preferred by some food manufacturers over natural ones for their stability across a wide range of conditions and lower cost.

What is Hyperactivity?

Hyperactivity is a behavioural style characterised by over-activity, inattention and impulsivity. There is a wide spectrum of activity level, from appearing to be approximately normal to extreme hyperactivity. The extreme case may meet the diagnostic criteria for attention-deficit hyperactivity disorder (ADHD).

ADHD typically has onset in early childhood and is characterised by a specific pattern of behaviour such that it affects the child's ability to learn and function at home and at school. Hyperactivity in children is multi-factorial, including both genetic and environmental factors.

How Can You Know if a Food Contains Food Colours?

According to the requirements under the Food and Drugs (Composition and Labelling) Regulations, if an additive, including food colour, is used in a prepackaged food, its name or identification number together with its functional class e.g., colour should be labelled in the ingredient list. Consumers can always identify the food additives labelled with its identification number by making reference to the Consumer Guide to Food Additives published by the CFS.

Key Points to Note:

1. Experts opined that the Southampton study had a number of limitations and uncertainties, in which a link between food colours and behavioural changes in children could not be established.
2. Parents can make reference to the ingredient list to make informed food choice for their children.

Advice to Public

- Maintain a balanced diet so as to avoid excessive exposure to certain food additives including food colours.
- Read labels especially the ingredient list on prepackaged food so as to make discerning choices.

Advice to Trade

- Ensure that all food products for sale comply with local regulations, including food additives and labelling requirements.
- Observe Good Manufacturing Practice (GMP) when using food colours with the lowest possible level required.
- Consider reducing the use of artificial food colours of concern or replacing them with natural food colours or other alternatives.



營養聲稱 - 選擇食物的快速參考

Nutrition Claims - A Quick Reference for Choosing Foods

食物安全中心
風險評估組
科學主任廖珮珊女士報告

Reported by Ms. Melissa Liu, Scientific Officer,
Risk Assessment Section,
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為何我們要規管營養標籤？

食物包裝上不時有營養聲稱，例如低脂和較高鈣，作為一種食品促銷方法。作出規管可防止出現濫用情況，讓消費者在選擇食物時可以安心信賴，並讓營養聲稱成為大家選擇較健康食物的快速參考。

根據最近生效的營養資料標籤制度，營養聲稱必須符合一些特定條件。這些聲稱可分為三大類：營養素含量聲稱、營養素比較聲稱及營養素功能聲稱，旨在強調食物的某些營養特性。

制定特定的聲稱條件

在決定容許哪些聲稱時，規管機構和科學人員考慮兩點：有關聲稱在營養學觀點上是否重要和在使用上會否容易誤導消費者。在制定本港的營養聲稱條件時，我們參考了專責制定食物標準的國際及海外機構採用的條件，又考慮了多項基本原則，包括營養素對健康影響的科學證據，以及相關營養政策。

營養素含量聲稱

對於須限制攝入的某些營養素，例如脂肪和鈉，我們已就“低”或“不含”聲稱訂出條件，讓只有符合相關條件的產品才可作出有關聲稱。另一方面，膳食纖維對健康有益，建議高攝入量，因此我們就“高”或“來源”聲稱訂出條件。這兩類聲稱有助消費者根據膳食建議選擇較健康的食物。

在制定一些其他營養素含量聲稱的條件時，我們亦會考慮有關營養素在食物中的一般含量和市民通常進食的食物分量。舉例來說，在制定“不含反式脂肪”聲稱的條件時，我們評估了各類食品的反式脂肪含量和市民進食含反式脂肪食物的分量，亦考慮了一些實際問題，例如實驗室檢測方法的敏感度。因此，就“不含反式脂肪”的產品而言，有關含量未必是絕對數值“0”，產品可含有微量的反式脂肪。

營養素比較聲稱

有些產品在性質上可能較難符合營養素含量聲稱的條件，但產品的營養素含量可能高於或低於市面上同類產品；舉例來說，某曲奇餅可能不是“低脂”食物，但其脂肪含量低於其他曲奇餅(即“較低脂”)。在這種情況下，如果營養素含量明顯高於或低於其他同類產品，有關產品可作出營養素比較聲稱。業界可透過這類聲稱說明其產品相對於另一同類產品是較高鈣或較低脂食物，而消費者亦因此知道市面上有“較佳”選擇。

營養素功能聲稱

有些產品會加上營養素功能的資料，例如鈣有助鞏固骨骼生長，供消費者參考。這些聲稱必須根據有力的科學證據，故此消費者可以信任這些聲稱。由於科學家現時對某些營養素功能仍未有共識，這些未經證實的聲稱現時不容許使用，以免對消費者造成混淆或誤導。不過，我們會留意國際發展，並就有關聲稱進行定期檢討。

使用聲稱選擇食物

營養聲稱凸顯不同食品的主要營養特性，是大家選擇食物時的快速有用參考。不過，消費者亦應了解食品

Why Should We Regulate Nutrition Claims?

Nutrition claims, such as low fat and higher calcium, are often found on food packages and used as a marketing tool for promoting food products. Regulating these claims can prevent their abuse for consumers to trust them when making food choices, and use these claims as a quick reference for choosing healthier food.

Under the Nutrition Labelling Scheme that came into effect recently, nutrition claims must meet certain specified conditions. There are three main types of nutrition claims: nutrient content claim, nutrient comparative claim and nutrient function claim. These claims are used to emphasise selected nutritional properties of foods.

Establishing Specific Claim Conditions

When deciding which claims are allowed, regulators and scientists consider whether the claims are significant from a nutrition point of view, and whether their use may likely mislead consumers. When establishing the local nutrition claim conditions, we have made reference to those adopted by international and overseas food standard setting agencies and considered fundamental principles including the scientific evidence on the effect of nutrients on health, and the relevant nutrition policy.

Nutrient content claims

For some nutrients such as fat and sodium which intake should be limited, conditions for “low” or “free” claims of these nutrients have been established so that only products satisfying the relevant conditions are eligible to make such claims. On the other hand, dietary fibre is beneficial to health and high intake is recommended. Therefore, conditions for the claims “source” or “high” have been established. These two kinds of claims would facilitate consumers choosing healthier foods in response to dietary recommendations.

When establishing the conditions for some other nutrient content claims, the usual level of nutrient in food and the amount of food commonly consumed are considered. For instance, the level of trans fat in various food items, as well as the population’s consumption amount of trans fat-containing foods, have been assessed for setting the condition for the claim “trans fat free”. Practical issues such as sensitivity of laboratory testing methods have also been considered. To this end, for “trans fat free” products, the trans fat level may not be absolute “0” and trace amount of trans fat may be present.

Nutrient comparative claims

Some products, by nature, are not likely to satisfy conditions for nutrient content claims. However, their nutrient content may be higher or lower than those of similar products in the market. For example, a type of cookies may not be “low fat” but it has lower fat content than other cookie products (i.e. “lower fat”). Under such circumstances, nutrient comparative claims can be made on products if their nutrient contents are significantly higher or lower than those of other similar products. By doing so, traders could tell their consumers that a certain product is, for example, higher in calcium or lower in fat, as compared to another similar product. Consumers may then be informed of the availability of the “better” choices.

Nutrient function claims

For some products, information on nutrient function, e.g., calcium builds stronger bones, is provided for consumers’ reference. These claims must be based on sound scientific evidence so that they are credible for consumers. As there is still no consensus among scientists on some nutrient functions, unsubstantiated claims would not be allowed so as to avoid confusing or misleading consumers. However, international development would be monitored and the claims would be reviewed regularly.

Reading Claims, Choosing Food

Highlighting the featuring nutritional properties of different food products, nutrition claims are useful for making quick reference when choosing foods.

的整體營養特性，從而選擇健康的食物。我們將會在下一期介紹如何善用營養標籤上的資料選擇較健康的食物。

However, consumers are also encouraged to understand the overall nutritional property of the food product for making healthy food choices. In the next issue, we will discuss how information on nutrition label could be used in choosing healthier foods.

食物事故點滴

Food Incident Highlight

牛奶飲品中的蠟樣芽胞桿菌

Bacillus cereus in Milk Drink

今年六月四日，食物安全中心(中心)公布四月份食物安全報告，發現一款須冷藏的牛奶飲品含過量蠟樣芽胞桿菌。中心已於收到結果後立即派員巡查有關食物製造廠、食物運送程序和零售商，並從不同生產線抽取樣本化驗，結果全部合格。中心隨後亦已加強監察有關奶類製品，至今並無接獲因飲用該款牛奶飲品出現不適的報告。

On 4 June 2010, the Centre for Food Safety (CFS) released its Food Safety Report for April. Excessive level of *Bacillus cereus* was found in a milk drink that requires refrigeration. Immediately after the results were available, the CFS conducted inspections on the food factory, delivery process, and the retailer concerned. Samples had been taken at different production lines and all results were satisfactory. Surveillance on the concerned milk products has been stepped up. No illness related to consumption of the milk product has been reported.

蠟樣芽胞桿菌是一種食源性致病細菌，在環境中無處不在，可產生耐熱的孢子和無法透過烹煮消除的毒素。進食受蠟樣芽胞桿菌或其毒素污染的食物可令人出現嘔吐及腹瀉等食物中毒徵狀。除了推行優良製造規範和食物安全管理系統外，業界在運送和貯存期間應把須冷藏的奶類製品保持在安全溫度(即攝氏4度或以下)。

Bacillus cereus is a foodborne pathogenic bacterium ubiquitous in the environment. It can form heat-resistant spores and produce toxin which cannot be destroyed by cooking. Consuming food contaminated with *Bacillus cereus* or its toxin may cause food poisoning symptoms such as vomiting and diarrhoea. Besides implementing Good Manufacturing Practice and food safety management system, the trade is reminded to keep dairy products that require refrigeration at safe temperatures (i.e. at 4°C or below) during transportation and storage.

運動飲品中的真菌

Fungus in Sports Drinks

今年六月四日，屈臣氏集團(香港)有限公司通知食物安全中心(中心)，該公司因發現包裝內含有真菌而停售 Iso-tone 促動運動飲品原味及冰涼口感兩款產品。

On 4 June 2010, A. S. Watson Group (HK) Limited notified the Centre for Food Safety (CFS) that the company suspended the sale of two sports drinks, the regular flavour and ice flavour of Iso-tone Sports Drink, because of the detection of fungus in the products.

真菌包括酵母菌及霉菌。一般來說，真菌主要影響食物外觀，除免疫力較弱的人外，對一般消費者不會構成風險。然而，任何人如飲用有關產品後感到不適，應求診就醫。

Fungi include yeast and mould. Generally, they are more of an aesthetic consideration than a risk to general consumers except for those with weakened immune system. However, individuals should seek medical advice if they feel sick after drinking the products.

中心就此事於當日發出了食物警報提醒消費者及業界停止飲用或售賣問題產品。其後，食物環境衛生署派員巡查有關食物製造廠，並就食物安全管理系統提供建議。中心會監察有關回收程序，並在製造廠重新投產後加強監察。

The CFS issued a food alert on that day warning consumers and the trade not to consume or sell the affected products. Subsequently, the Food and Environmental Hygiene Department inspected the concerned food factory and provided food safety management advice. The CFS would monitor the recall process and enhance food surveillance when the factory resumes production.



兩款回收的 Iso-tone 促動運動飲品
Two Iso-tone Sports Drinks on recall

風險傳達
工作一覽
Summary of
Risk Communication Work

風險傳達工作一覽 (二零一零年六月) Summary of Risk Communication Work (June 2010)	數目 Number
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