

食物安全焦點

Food Safety Focus



食物安全中心
Centre for Food Safety

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食物安全中心
食物事故應變及管理小組
傅玉清醫生
風險傳達組科學主任
郭麗儀女士及游天頌先生
聯合報導

Reported by Dr. Alex FU, Medical and Health Officer, Food Incident Response Management Unit and Ms. Joey KWOK and Mr. Arthur YAU, Scientific Officers, Risk Communication Section, Centre for Food Safety

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事故摘要

食物安全中心(中心)於二零零六年九月及十月,就多宗懷疑食物中毒個案迅速展開源頭調查,該些個案均與進食生蠔而引致的諾沃克病毒感染吻合。在確定生蠔來自同一供應商後,中心要求有關供應商停止分銷聲稱來自智利的有關生蠔,並提供分銷資料。在缺乏有關資料以保障市民健康的情況下,中心遂公開事件,呼籲業界提高警覺。在採取管制措施後,本港再無出現新個案。

中心為控制感染情況而採取的行動

在決定擬採取的必要行動時,保障市民健康和公眾利益是主要考慮因素。我們曾考慮以下因素:(i) 臨牀及流行病學資料顯示,這些食物中毒的爆發,是跟由生蠔引致的諾沃克病毒食物中毒爆發吻合;(ii) 在相關的食肆調查並沒有發現其他導致個案發生的環境衛生因素或除了生蠔以外的其他可疑食物;以及(iii) 有關的生蠔批次均源自同一供應商。

在調查期間,我們發現其中一名患者的糞便樣本對諾沃克病毒測試呈陽性反應。此外,調查工作還包括收集蠔樣本作測試,結果並無驗出諾沃克病毒。儘管如此,陰性結果不能證明患者進食的生蠔批次沒有受諾沃克病毒污染。

諾沃克病毒的特點

諾沃克病毒主要是經由吃下或飲用受糞便污染的食物或水傳播,但亦可經由人與人直接接觸或受污染物質或微粒傳播。諾沃克病毒常見於受污水污染的水,因此以過濾水中微生物作食物的貝類海產如蠔較易受到污染。諾沃克病毒雖然不會在食物中繁殖,但能夠在冰點下的低溫生存。因此進食冰鮮或冷藏生蠔均可能會感染諾沃克病毒。

諾沃克病毒感染的潛伏期通常為24至48小時,患者病情多屬輕微及短暫,病徵為嘔吐、非出血性腹瀉、腹絞痛和噁心,有時也會出現低燒。諾沃克病毒的傳染性非常高,少至十個病毒便可傳播疾病。近

Summary of the incident

The Centre for Food Safety (CFS) conducted prompt investigation in September and October 2006 into the source of several suspected food poisoning cases which were compatible with norovirus infection caused by consumption of raw oysters. Upon identifying a common supplier, the CFS requested the supplier concerned to stop distributing the affected oysters which were claimed to be imported from Chile and to provide information on their distribution. In the absence of relevant information that was required to protect public health, the CFS made an appeal to the trade to be on the alert by revealing the incident. No more related cases were reported after implementing the control measures.

CFS's actions to control the infection

In deciding the necessary actions to be taken, protection of public health and public interest were the prime consideration and a number of factors were taken into consideration: (i) clinical and epidemiological findings showed that these food poisoning outbreaks were compatible with norovirus food poisoning outbreaks caused by raw oysters; (ii) investigation at the food premises involved did not identify any environmental hygiene factors contributing to the cases or any suspected food items other than oysters; and (iii) the batches of raw oysters concerned were found to be sourced from the same supplier.

During the investigation, a stool sample from one of the patients was found positive for norovirus. As part of the investigatory work, samples of oysters were collected for testing and results showed that no norovirus was detected. The negative findings, however, do not prove that the batches of oysters the patients consumed were not contaminated by norovirus.

Features of Norovirus

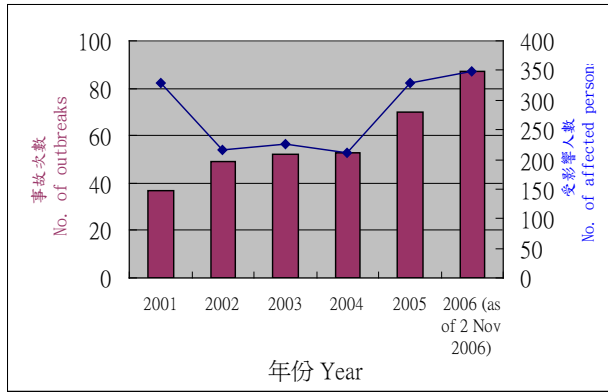
Norovirus is transmitted primarily through the faecal-oral route via contaminated food or water although spread via direct person to person contact, or via contaminated objects or aerosols is also common. Norovirus is commonly found in sewage-contaminated

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Incident in Focus

年，此病毒在本港和其他地方造成愈來愈多的公眾健康問題。諾沃克病毒在美國相信導致至少50%的食源性腸胃病事故，而在本港近年亦成為五大食物中毒致病菌之一。由於病毒的數量很少，加上每一貝類海產動物沾有的數量可能有差異，因此往往難以在食源性事故涉及的食物樣本中驗出諾沃克病毒。

與進食蠔有關的諾沃克病毒食物中毒事故次數及受影響人數
(由二零零一年至二零零六年十一月二日)

Number of norovirus food poisoning outbreaks related to consumption of oysters and persons affected, 2001 – 2006 (as of 2 November 2006)



資料來源：香港衛生署衛生防護中心
Centre for Health Protection, Department of Health, Hong Kong

water, thus filter-feeding shellfish such as oysters are more susceptible to contamination. Norovirus does not multiply in food, however, it can survive freezing temperature. Consuming raw oysters, whether chilled or frozen, poses the risk of contracting norovirus infection.

The incubation period for norovirus infection is usually between 24 and 48 hours. The infection tends to be mild and self-limiting characterized by vomiting, non-bloody diarrhoea, abdominal cramps, nausea, and sometimes low-grade fever. Norovirus is highly contagious; its infective dose can be as low as ten viral particles. Norovirus is causing increasing public health concern in recent years both locally and internationally. In the United States, it is thought that at least 50% of all foodborne outbreaks of gastroenteritis are attributed to norovirus whereas the virus ranked one of the top five food poisoning organisms locally in recent years. Owing to the fact that the number of viral particles is low and that it may vary from one shellfish to another, it is often difficult to detect the virus in food samples related to foodborne outbreaks

凡例 Key:

給業界的建議

業界人士應向可靠的來源採購貝類海產，包括專供生吃的蠔，並應確保貝類海產適宜供人食用。所有貝類海產均應妥善處理，以減低受污染的風險。

給市民的建議

市民應注意，生吃貝類海產是高風險行為，他們只應在信譽良好的持牌店鋪進食或選購生的貝類海產。高風險人士(例如幼童、長者、孕婦和免疫力較弱的人)應避免進食生的貝類海產。徹底煮熟所有貝類海產是確保其食用安全的有效方法。

讀者如有興趣更深入了解諾沃克病毒和此事件，請登入下列相關網頁。

- 由中心編製的“諾沃克類病毒知多少”單張；
- 由中心編製的“配製生吃食物衛生守則”單張；
- 由中心編製的“海產食物要衛生大家都要多關心”單張；
- 由中心發出的新聞公報。

Advice to the Trade

Members of the trade should obtain shellfish including oysters for raw consumption from reliable sources, and should ensure that the shellfish is fit for human consumption. All shellfish should be properly handled to minimize risk of contamination.

Advice to the Public

The public should beware that the consumption of raw shellfish is a high risk behaviour, and that raw shellfish should only be consumed in or obtained from reputable licensed premises. Susceptible population (e.g. young children, elderly people, pregnant women and persons with weakened immune systems) should avoid consumption of raw shellfish. Thorough cooking is an effective way to ensure food safety.

Further Information

For readers who are interested in learning more about norovirus and the incident, please visit the following web pages for further information.

- [The CFS pamphlet on Norovirus;](#)
- [The CFS pamphlet on Hygiene Practices for Preparation of Food Eaten Raw;](#)
- [The CFS pamphlet on Learn More About Seafood Safety and Hygiene;](#)
- [The CFS press releases](#)

風險傳達 工作一覽 Summary of Risk Communication Work

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化學危害概論

Overview of Chemical Hazards

食物安全中心風險評估組
科學主任邱頌韻女士報告

Reported by Miss Joan YAU, Scientific Officer,
Risk Assessment Section, Centre for Food Safety

我們在上一期介紹了其中一類常見的食物危害——生物危害，今期我們將會淺談化學危害。

In the last issue of the newsletter, we have introduced one of the common food hazards - biological hazards. This time, we shall brief you on another one - chemical hazards.

何謂化學危害？

化學危害是具有對人類健康構成不良影響的潛力的化學媒介。

Chemical hazards are chemical agents that have the potential to cause adverse health effects in humans.

在日常生活中，我們會吃下林林總總的化學物。由於農用化學物和食物添加劑愈來愈廣泛應用，市面上有更多來自世界各地安全又健康的食品，以滿足消費者的需要。目前，國際食物安全機關食品法典委員會已為超過250種食物添加劑及超過250種農用化學物訂定標準。此外，再加上天然污染物和透過天然途徑或人類活動產生的工業用化學物，我們可能從日常的食物中攝入超過700種不同化學物。

Eating a wide range of chemicals is part of our daily life. Thanks to wider application of agricultural chemicals and food additives, a broader range of safe and wholesome food from different parts of the world is made available to meet consumers' needs. Today, the international food safety authority, Codex Alimentarius Commission, has already established standards for more than 250 food additives as well as more than 250 agricultural chemicals. Together with natural toxicants and industrial chemicals arising from natural sources or human activities, we might be exposed to more than 700 different kinds of chemicals in the food we eat everyday.

上述化學物因各種原因而存在於食物中：

These chemicals are present in our food for different reasons, which are:

- 為達到某些技術用途而在食物加工過程中刻意添加的食物添加劑，例如苯甲酸等防腐劑可抑制微生物生長，而維生素C等護色劑則能保存或穩定食物的原有色澤。
- 在食物鏈中屬於污染物的環境污染物，例如水銀(汞)及鉛等重金屬和二噁英等持久性高的有機污染物。
- 在某些食物加工或烹煮過程中產生的化學物，例如丙烯酰胺。
- 因生產和貯存食用農作物及動物期間使用的除害劑和獸用藥物而殘留下來的農用化學物。
- 微生物或海洋動物自然產生的毒素，例如花生中的黃曲霉毒素和珊瑚魚中的雪卡毒素。
- 在某些情況下可能令人有不良反應的食物中自然存在的成份，例如未完全煮熟豆類中的植物血球凝集素和花生及牛奶中的過敏物質等。

- Food additives that are intentionally added to achieve certain technological functions during food processing, e.g. preservatives (e.g. benzoic acid) can inhibit microbial growth and colour retention agents (e.g. ascorbic acid) can retain or stabilise the original food pigments.
- Environmental pollutants such as heavy metals (e.g. mercury, lead) and persistent organic pollutants (e.g. dioxins) that enter the food chain as contaminants.
- Chemicals formed during certain food processing or cooking conditions (e.g. acrylamide).
- Residues of agricultural chemicals resulting from previous application of pesticides and veterinary drugs during production and storage of food crops and animals.
- Some naturally produced toxins by microbes or sea animals, e.g. aflatoxins in peanuts, ciguatoxin in coral fish.
- Some naturally present components of food, which may cause adverse reactions under certain conditions, e.g. phytohaemagglutinin in inadequately cooked pulses and beans, allergic substances in peanuts and milk, etc.

化學危害的數量，遠多於生物危害，相差至少是以百倍計。

The number of chemical hazards is at least hundred times more than that of biological hazards.

化學危害影響人類健康？

市民大眾特別關注這些危害對人類健康造成不良影響的潛力。

Do Chemical Hazards Affect Human Health?

The potential of these chemicals to cause adverse health effects in humans is of particular concern to the general public.

“所有物質都是毒物，沒有一樣物質不是毒物。正確的劑量把毒物與良藥區分。”

— 毒理學之父帕拉塞爾蘇斯

“All substances are poisons; there is none which is not a poison. The right dose differentiates a poison from a remedy.”

— Paracelsus, Father of Toxicology

生物危害可能令人在短時間內出現食物中毒症狀，但食物中的化學物則不然，其慢性毒性通常最受人關注。有害化學物可能會擾亂身體的新陳代謝，引致癌症，破壞基因，改變器官功能和影響繁殖及發育等。舉例來說，黃曲霉毒素會增加患肝癌的風險，而水銀(汞)則影響胎兒、嬰兒和兒童正在發育的腦部。不過，有些食物化學物亦會引起急性反應，例如雪卡毒素中毒。

Different from biological hazards, which may cause food poisoning symptoms within a short period of time, long-term toxic effects of food chemicals are usually the prime



為保障公眾健康，我們參考了國際機關訂定的安全參考值，對食物中的化學物作出規管。只有從食物中攝入化學物的分量高於安全參考值時，公眾健康才可能有風險。市民無須單單因為攝入化學物而過分擔心。

簡單的管理化學風險守則

適用於業界

業界在應用和選用食物化學物時應小心留神，只添加能達到所需技術用途的適當種類和分量的食物化學物。此外，亦應留意本港的規管規定。

適用於市民

一般通則是市民應保持均衡飲食，以免因偏食而攝取過量食物化學物。你可登入[食環署](#)和[中心](#)網頁，瀏覽有關減低攝取某些食物化學物風險的建議。

concern. Harmful chemicals may disrupt body metabolism, cause cancers, damage genes, alter organ functions, affect reproduction and development, etc. Examples are aflatoxins that can increase the risk of liver cancers whereas mercury can affect developing brains in fetuses, infants and children. However, some food chemicals do cause acute effects, e.g. ciguatoxin poisoning.

The presence of chemicals is, however, regulated to protect public health, making reference to safe reference values established by international authorities. Only when dietary exposure exceeds the safe reference value, public health may be at risk. Mere exposure to chemicals should have no cause for undue concern.

Simple Rules to Manage Chemical Risk

For the trade

Food trade should exercise due care in applying and choosing food chemicals; add only the right type and right amount of food chemical which could serve the desired technological function. The trade should also take note of the regulatory requirements in Hong Kong

For the public

As a general rule, members of the public are advised to take a balanced diet so as to avoid excessive exposure to food chemicals from a small range of food items. You may find specific advice on reducing risks of particular food chemicals on the websites of the [FEHD](#) and the [CFS](#).



肉毒中毒及經巴士德消毒法處理的甘筍汁

在美國發生四宗肉毒中毒個案後，美國食物及藥物管理局和加拿大食物檢驗局均呼籲公眾切勿飲用最佳飲用日期(BEST IF USED BY)為二零零六年十一月十一日或更前日子批次的Bolthouse Farms 450毫升和1公升樽裝甘筍汁。有關產品屬於Bolthouse Farms, Earthbound Farm and President's Choice三款牌子。食物安全中心(中心)已因應事件呼籲市民切勿飲用受影響的產品，並促請本港各大進口商及零售商停止進口或出售有關產品。

根據美國食物及藥物管理局的資料，患者飲用的甘筍汁似乎未經妥善冷藏，以致可能令肉毒梭狀芽孢桿菌孢子在無氧的環境下生長和產生毒素。

肉毒中毒可因攝入泥土中常見的肉毒梭狀芽孢桿菌產生的劇毒引致，屬於罕見的嚴重中毒。初期病徵包括疲倦、虛弱、眩暈，一般隨後會出現視線模糊，難以下嚥及說話，但有時也會有腹瀉、嘔吐、便秘及腹部腫脹的徵狀。大部分患者均會痊癒，但康復期需時可能較長。此病或會引致癱瘓，致命率為5%至10%。

未經妥善加工的食物、低酸食物(例如甘筍汁)、鹼性食物、經巴士德消毒法處理的食物、稍經腌製後不作冷藏的食物(特別是密封包裝食物)的風險尤高。不過，高溫可破壞引致肉毒中毒的毒素。處理和貯存上述高風險食物時必須遵守指示，因為加工過程未必足以殺死肉毒梭狀芽孢桿菌孢子，而且不當處理可能提供適合的環境讓毒素產生。

業界人士和市民應向信譽良好的店鋪購買果汁產品，並必須查閱和遵守其貯存指示。經巴士德消毒法處理的果汁必須保存在攝氏4度或以下。食物供應商和零售商有責任確保所出售的食品適宜供人食用。

如欲取得更多資料，讀者可登入[中心](#)、[美國食物及藥物管理局](#)(只有英文)和[加拿大食物檢驗局](#)(只有英文)網頁。

Botulism and Pasteurized Carrot Juice

Following reports of four cases of botulism in the US, both the US Food and Drug Administration (FDA) and the Canadian Food Inspection Agency (CFIA) warned the public not to drink Bolthouse Farms Carrot Juice, with "BEST IF USED BY" dates of 11 November 2006 or earlier under Bolthouse Farms, Earthbound Farm and President's Choice brands, in both 450 ml and 1 litre bottles. In response to the incident, the Centre for Food Safety (CFS) warned the public not to drink the affected products and urged major local importers and retailers to stop importing or selling the products concerned.

According to the FDA, it appeared to be that the juice the victims drank was not properly refrigerated, which might have allowed the spores of the bacterium *Clostridium botulinum* to grow and produce toxin under anaerobic condition.

Botulism is a rare but serious intoxication which can be caused by ingesting a potent toxin produced by a common soil bacterium *Clostridium botulinum*. Initial symptoms of botulism include fatigue, weakness, vertigo, usually followed by blurred vision and difficulty in swallowing and speaking, but diarrhoea, vomiting, constipation and abdominal swelling can also occur. Most victims recover, but the recovery period can be up to many months. The disease may cause paralysis and is fatal in 5-10% of cases.

Food that are improperly processed, low acid (e.g. carrot juice), alkaline, pasteurized and lightly cured foods held without refrigeration, especially those that are in airtight packages, are especially high risk. However, the botulism toxin can be destroyed by heat. Instructions must be followed when handling and storing the above high risk food items, as the processing may not be strong enough to destroy the spores of *Clostridium botulinum* and improper handling may provide the right condition for toxin production.

Members of the trade and the public should obtain juice product from credible sources. It is important to check and observe the storage instructions of juice products. Pasteurized juice must be kept at 4°C or below. Food suppliers and retailers are responsible for ensuring the food items for sale are fit for human consumption.

Readers may visit websites of the [CFS](#), the [US FDA](#) and the [CFIA](#) for further information.