

食物安全焦點

Food Safety Focus



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食物安全中心風險管理組
高級醫生陳國雄報告

Reported by Dr. Addi CHAN, Senior Medical Officer,
Risk Management Section, Centre for Food Safety

本文就食物環境衛生署食物安全中心(中心)在二零一七年接獲有關本地食肆及食物業的食物中毒個案作出回顧。

This article reviews the food poisoning outbreaks related to local food premises and food business that were reported to the Centre for Food Safety (CFS) of the Food and Environmental Hygiene Department in 2017.

與本地食肆及食物業相關的食物中毒個案

食物中毒是本港法定須呈報的疾病。為保障公眾健康，中心的職責之一是與衛生署合作調查及監控有關本地食肆及食物業的食物中毒個案。二零一七年，中心接獲185宗由衛生署轉介的食物中毒個案，共有711人受影響。在過去十年，該類轉介個案整體出現下跌的趨勢(見圖1)。

Food Poisoning Outbreaks Related to Local Food Premises and Food Business

Food poisoning is a statutory notifiable disease in Hong Kong. To protect public health, the CFS, in collaboration with the Department of Health (DH), is responsible for the investigation and control of food poisoning outbreaks (FPOs) related to local food premises and food business. In 2017, the CFS received 185 food poisoning cases referred from the DH which affected 711 persons. The annual number of referred cases showed a general decreasing trend over the past decade (see Figure 1).

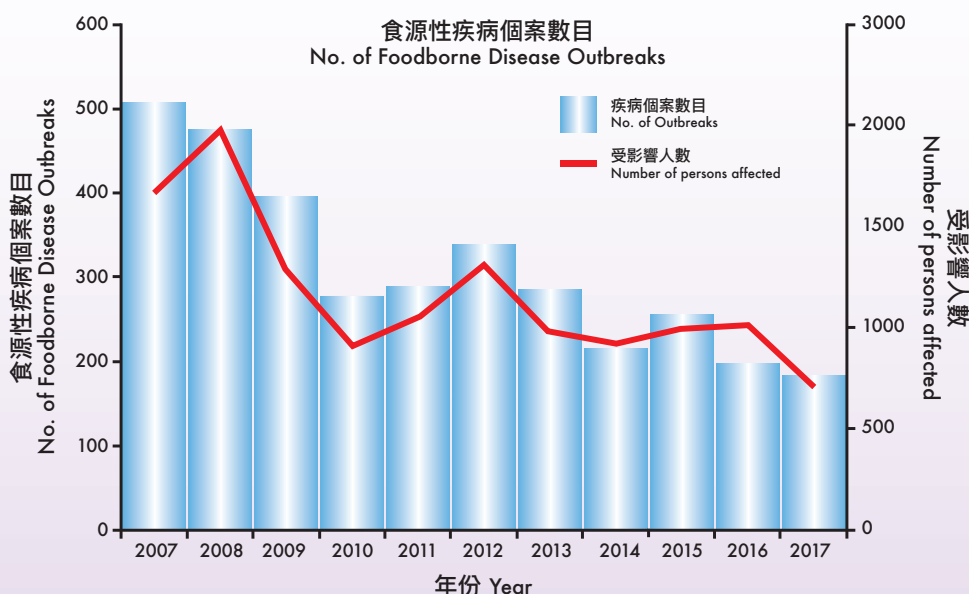


圖1：二零零七至二零一七年有關食肆及食物業的食物中毒個案數目及受影響人數。
Figure 1: Number of food poisoning outbreaks related to food premises and food business and the corresponding number of persons affected from 2007 to 2017.

病原體及成因

二零一七年的所有食物中毒個案中，由細菌引起的仍然佔大多數(65.4%)，排在頭三位的是沙門氏菌、副溶血性弧菌及產氣莢膜梭狀芽孢桿菌。至於病毒所引起的食物中毒個案，諾如病毒佔中心接獲的轉介個案總數約21.6%。在接獲的185宗個案報告中，最常見的成因分別是烹煮時間不足、被生的食物污染及生吃的食物受污染。下文將會討論二零一七年發生的兩宗大型食物中毒事故，說明具有良好衛生及食物安全守則對保障食物安全的重要性。

Causative Agents and Contributing Factors

Bacterial foodborne agents remained the leading causes (65.4%) of all FPOs in 2017, with *Salmonella* (SM), *Vibrio parahaemolyticus* (VP), and *Clostridium perfringens* (CP) being the top three bacterial pathogens. For the viral causes, norovirus accounted for around 21.6% of all the FPOs referred to the CFS. Of the 185 cases reported, inadequate cooking, contaminated by raw food and contaminated raw food were the most frequently identified contributing factors. The importance of good hygiene and food safety practices in safeguarding food safety could be illustrated by the following two major food poisoning outbreaks that occurred in 2017.

焦點個案
Incident in Focus

10宗因烹煮時間不足及貯存不當而引起的集體食物中毒個案

二零一七年十月底至十一月初，中心接獲涉及一間食肆的10宗集體食物中毒報告，共22人受影響。在四宗個案的七名患者的糞便樣本檢出對腸炎沙門氏菌呈陽性反應。根據流行病學調查顯示，這些食物中毒個案與進食螺絲粉或粉麵中的炒蛋有關。

我們在現場調查時發現，肇事食物(即炒蛋)已預先烹調至半熟，並長時間在室溫下存放。當有顧客點餐，食肆人員便把未經翻熱或再烹煮的半熟炒蛋加在螺絲粉或粉麵上。

沒有遵行衛生守則、炒蛋的烹煮時間不足及貯存不當均是這些食物中毒個案的成因。中心已向食物處理人員作出衛生建議，特別強調烹煮時間不足及貯存熟食不當的風險。食肆即時暫停出售有關食品，而中心亦已指令食肆徹底進行清潔及消毒。中心並密切監察有關食肆的衛生情況。在食肆恢復售賣炒蛋食物後，中心檢取食物樣本作檢測，結果呈陰性。其後，中心再無接獲有關的食物中毒個案。

雞蛋是市民經常食用的食物。不過，雞蛋或會受沙門氏菌污染，故進食生蛋或未經徹底煮熟的雞蛋可能導致感染沙門氏菌。上述例子顯示徹底烹煮及妥善貯存含炒蛋的食物的重要性。業界應選用經巴士德消毒的蛋或蛋製品製作不需要進一步翻熱處理的食物。

因進食受病原體污染的生蠔蚶或未經徹底煮熟的蠔蚶而引起的食物中毒個案

二零一七年，中心接獲11宗涉及在不同食肆進食蠔蚶的集體食物中毒個案，共44人受影響。懷疑涉及的病原體包括諾如病毒、副溶血性弧菌及沙門氏菌。我們在調查這些個案時發現，烹煮時間不足的蠔蚶或預先包裝的醃製蠔蚶是這些食物中毒個案的成因。事實上，根據販商表示，這些預先包裝的醃製蠔蚶不是即食食物，必須進一步烹煮，但包裝上卻沒有提供有關須進一步烹煮的清晰指示。因此，中心指示販商提供相關資料，例如在包裝上加上清晰指示。中心亦已向涉事食肆提供衛生教育，包括向可靠的供應商購買食物配料，以及徹底烹煮蠔蚶的重要性。其後，與蠔蚶有關的食物中毒個案有所減少。

結語

雖然食物中毒個案數目在過去數年一直維持在相對較低的水平，但中心不會掉以輕心，仍會一如既往努力保障食物安全。另一方面，業界及市民亦需了解涉及的風險，並遵守“食物安全五要點”，以預防發生食物中毒個案。業界亦應確保所出售的食物適宜供人食用。

10 Clusters of Food Poisoning Outbreaks Related to Inadequate Cooking and Improper Storage

In late October to early November 2017, 10 clusters of FPOs related to a restaurant affecting a total of 22 persons were reported to the CFS. Stool specimens of seven victims in four clusters were cultured positive for *Salmonella enteritidis*. Epidemiological investigation of these clusters showed that they were related to the consumption of scrambled egg in fusilli or noodle.

Our field investigation revealed that the incriminated food, scrambled eggs was prepared in semi-cooked condition in advance and kept in room temperature for prolonged period of time. Upon receiving an order from the customer, the semi-cooked scrambled egg was just placed on top of the fusilli/noodle without any further reheating or cooking.



The lapse in hygiene practice, inadequate cooking and improper storage of scrambled eggs were the contributing factors to these FPOs. Specific health advice was conveyed to the food handlers, in particular, the risk of inadequate cooking and improper storage of cooked food was emphasised. The sale of the food items were suspended immediately and the food premises were instructed to carry out thorough cleansing and disinfection. The hygiene condition of the food premises was kept under close monitoring. Follow up food sample was collected after resumption of sale of scrambled eggs and the result was negative and no further FPO outbreaks were received afterwards.

Eggs are commonly consumed food. However, eggs may be contaminated with *Salmonella* and hence eating raw or undercooked eggs may result in salmonellosis. The above example revealed the importance of thorough cooking and proper storage of dishes with scrambled eggs. The trade is advised to choose pasteurised eggs or egg products to prepare dishes not requiring further heat treatment.



Food Poisoning Outbreaks Related to the Consumption of Raw or Undercooked Blood Cockles Contaminated by Pathogens

In 2017, the CFS received 11 clusters of FPOs related to blood cockles affecting 44 persons in different restaurants. The suspected pathogens included norovirus, *Vibrio parahaemolyticus* and *Salmonella*. Investigation of these cases revealed that inadequate cooking of raw blood cockles or pre-packed pickled blood cockles were the contributing factors. Indeed, according to traders, these pre-packed pickled blood cockles were not ready-to-eat food and further cooking is required but clear instruction of further cooking was not provided on the package. The traders were therefore instructed to provide relevant information, such as clear instruction on packing. Health education was provided to concerned food premises to purchase food ingredients from reliable supplier, as well as the importance of adequate cooking of blood cockles. The number of FPOs related to blood cockles decreased afterwards.

Conclusion

While it appeared that the number of food poisoning outbreaks has remained at relatively low level over the past few years, the CFS will continue to be vigilant in safeguarding food safety. On the other hand, the trade and public need to recognise the risks involved and follow the “Five Keys to Food Safety” to prevent food poisoning outbreaks. The trade should also ensure the food sold is fit for human consumption.

訂定精米中鎘的最高含量 Setting Maximum Level for Cadmium in Polished Rice

食物安全中心風險評估組
研究主任黎礎程女士報告

Reported by Ms. Constance LAI, Research Officer,
Risk Assessment Section, Centre for Food Safety

上期文章探討了訂定食物中金屬污染物的最高含量的一般原則。現在讓我們看看如何為精米這種食品，訂定有關引起公眾衛生關注的金屬污染物——鎘的最高含量。

鎘是如何進入精米中？

鎘是其中一種天然存在於地殼的金屬，普遍存在於環境中。一些人類活動(例如工業化及採礦)會釋出鎘進入水及土壤。稻株從受污染的土壤及水吸收鎘，最終會積聚在不同部分，包括米。

有關精米中鎘含量的國際標準

聯合國糧食及農業組織 / 世界衛生組織食物添加劑聯合專家委員會(專家委員會)確定米是全球逾半人口的主要食糧，而亞洲是最大的生產及食用地區。在某些地區，米亦是其中一個攝入鎘的主要膳食來源。從膳食攝入鎘導致急性鎘中毒的機會很微。不過，鎘可積聚在腎臟，長期攝入鎘或會破壞腎功能。

二零零六年，食品法典委員會把精米中鎘的最高含量定為每公斤0.4毫克。不過，值得注意的是，在制訂該最高含量時，日本基於國內土壤的高鎘含量以致一些日本米樣本的鎘含量偏高，故支持把最高含量定為每公斤0.4毫克。相反，一些其他司法管轄區關注到，專家委員會所進行的鎘攝入量評估未有充分顧及部分國家 / 地區飲食模式的差異，以及易受影響羣組(包括兒童)攝入鎘的情況。此外，土壤的高鎘含量只屬地區性問題，只會影響少量在國際間買賣的米。因此，以米為主要食糧的國家對於把最高含量定為每公斤0.4毫克有所保留。

本地情況

在香港，食物中准許的金屬污染物含量受《食物攪雜(金屬雜質含量)規例》(第132V章)(《規例》)所規管。最近，香港檢討《規例》，以保障公眾健康和促使本港標準與國際標準接軌。食物安全中心(中心)注意到，食品法典委員會的標準是把精米中鎘的含量訂為每公斤0.4毫克，但世界貿易組織的《實施動植物衛生檢疫措施的協議》亦訂明，政府可建基於科學制訂本身的食物安全標準。

在提出精米中鎘的建議最高含量時，中心已考慮多項因素。有關因素包括：本港的食物消費模式及飲食習慣(即精米是本地的主要食糧)、不同司法管轄區所採用的相關標準(即歐洲聯盟、南韓、新加坡及內地採納精米中鎘的最高含量為每公斤0.2毫克)，以及風險評估結果(即基於本地食米量，把精米中鎘的建議最高含

In the last article, the general principles for setting maximum levels (MLs) for metallic contaminants in food were discussed. Hereafter, let's take this opportunity to see how an ML is set for a metallic contaminant of public health concern in a specific food commodity — cadmium in polished rice.

How does Cadmium Get into Polished Rice?

Cadmium is one of the metals that can be naturally found in the earth crust and ubiquitous in the environment. Human activities like industrialisation and mining activities contribute to the presence of cadmium in water and soil. Rice plant absorbs cadmium from contaminated soil and water and eventually accumulates in various parts including the rice.

International Standards for Cadmium in Polished Rice

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) identified rice as the primary staple for more than half the world's population while Asia represents the largest producing and consuming region. Rice is also one of the major dietary sources of cadmium in certain regions of the world. Acute toxicity of cadmium due to dietary exposure is unlikely. However, cadmium can accumulate in kidney and chronic exposure of cadmium would lead to kidney dysfunction.

In 2006, the Codex Alimentarius Commission (Codex) established an ML for cadmium in polished rice at 0.4 mg/kg. However, it is noted that during the development of such Codex ML, Japan supported the ML of 0.4 mg/kg because some rice samples in Japan contained relatively high levels of cadmium based on the high background levels of cadmium in soils in their country. On the contrary, some other jurisdictions expressed

their concern that the intake assessment conducted by JECFA had not comprehensively taken into consideration different food intake patterns in some countries / regions and exposure of cadmium to vulnerable groups including children. In addition, the high background level appeared to be a regional issue and only affected a small percentage of rice traded internationally. Countries where rice was a major staple food have reservation on setting the ML of 0.4 mg/kg for rice.

訂定米中鎘的建議最高含量的相關考慮因素

- 食品法典委員會的現有標準
- 本地市民的食物食用模式及飲食習慣
- 風險評估結果
- 其他經濟體系所採用的相關標準

Relevant factors considered for the proposed ML for cadmium in rice

- Current Codex standard
- Local food consumption pattern and dietary practice
- Results of risk assessments
- Relevant standards of other economies



米中的鎘含量訂為每公斤0.2毫克足以保障公眾健康。
0.2mg/kg for cadmium in rice is adequate in protecting public health.



圖2：在提出精米中鎘的建議最高含量時，中心已考慮多項因素。

Figure 2: When proposing the ML for cadmium in polished rice, various relevant factors have been taken into account.

Local Situation

In Hong Kong, the levels of metallic contaminants allowed in food are governed by the Food Adulteration (Metallic Contamination) Regulations (Cap. 132V) (the Regulations). Recently, the Regulations have been reviewed in order to protect public health and promote harmonisation between local and international standards. While noting the Codex standard for cadmium in polished rice is set at 0.4 mg/kg, the Centre for Food Safety (CFS) has also observed the World Trade Organization's Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) that governments are allowed to set their own food safety standards based on science.

When proposing the ML for cadmium in polished rice, various relevant factors have been taken into account. These include the local food consumption pattern and dietary practice (i.e. polished rice is a staple food locally), relevant standards

量訂為每公斤0.2毫克足以保障本港市民的健康)(見圖2)。中心建議把精米中鎘的最高含量訂為每公斤0.2毫克，較食品法典委員會更嚴格，屬符合科學理據的做法。該建議最高含量可在保障本地公眾健康與避免造成不必要的國際貿易障礙之間取得平衡。此外，該建議的最高含量與以精米為主要食糧的經濟體系所採納的最高含量相若。

下期文章

我們將會在下期文章探討另一種食品(即水產動物)中的金屬污染物。

adopted by various jurisdictions (i.e. the European Union, South Korea, Singapore and the Mainland have adopted MLs of 0.2 mg/kg for cadmium in polished rice), and results of risk assessments conducted (i.e. a proposed ML at 0.2 mg/kg for cadmium in polished rice, based on the local rice consumption, is adequate in protecting local public health) (see Figure2). The CFS has proposed an ML for cadmium in polished rice at 0.2 mg/kg, more stringent than Codex, is considered scientifically justified. This proposed ML has stricken a balance between protecting local public health and not creating unnecessary barriers for international trade. It also compares favourably with relevant MLs adopted by economies where polished rice is their staple food.

Next Article

In the next article, we will have a look on the metallic contaminants in another food commodity, i.e. aquatic animals.



哈密瓜(又稱皺皮瓜)與李斯特菌 Rockmelons and *Listeria monocytogenes*

食物安全中心(中心)在三月透過食物事故監察系統，得悉澳洲某農場出產的一些哈密瓜受李斯特菌污染，導致有人染病及死亡，並正回收有關哈密瓜。中心即時採取跟進行動，發現數個本地進口商曾進口涉事產品。有關進口商已按中心的建議展開回收工作。

李斯特菌是泥土及枯萎植物中常見的細菌。哈密瓜表面粗糙，有助細菌滋生。與其他很多食源性細菌不一樣，李斯特菌能在冷藏低溫下生存及繁殖，受李斯特菌污染的食物通常是在冷藏下保質期較長的即食食物。對孕婦(未出生的胎兒)、初生嬰兒、長者及免疫力較低的人而言，李斯特菌是一種危險的細菌。

中心建議消費者及業界在流動的清水下以清潔的刷子刷洗整個哈密瓜的表面，然後才切開食用，及盡快進食/出售已切開的哈密瓜。

In March, the Centre for Food Safety (CFS) through its Food Incident Surveillance System, noted some *Listeria monocytogenes* (LM) contaminated rockmelons produced from a farm had caused illnesses and deaths in Australia and were being recalled. The CFS immediately took follow-up actions and found several local importers had imported the affected products. Following the CFS' advice, the importers initiated recall.

LM is a bacterium commonly found in soil and decaying vegetation. Rockmelons have a rough surface that can harbour the growth of bacteria. Unlike many other foodborne bacteria, LM can survive and multiply at refrigerator temperatures. Foods that have been reported to have LM contamination are usually ready-to-eat foods with long shelf lives under refrigeration. LM could be dangerous to pregnant women (unborn foetuses), newborns, the elderly and people with weakened immunity.

The CFS advises consumers and the trade to wash and scrub the surface of the whole rockmelon with a clean brush under running water before cutting it, and consume/sell cut rockmelons as soon as possible.

減低幼兒被食物哽喉引致窒息的風險 Minimising Food-related Choking in Young Children

幼兒易被食物哽喉，特別是進食難以咬碎或咀嚼的食物時，食物或會卡在咽喉，引致窒息。這是由於兒童的呼吸道及食道較細，而咬碎或咀嚼食物的技巧又仍未成熟。

除了蒟蒻果凍(難於溶化)外，其他較易哽喉的食物包括：
i) 細小的堅硬食物(例如果仁、生紅蘿蔔及葵花籽) ii) 細小的圓形/橢圓形食物(例如葡萄、豆)；iii) 有外皮/葉的食物(例如肉腸、生菜、桃駁梨)；iv) 可壓縮食物(例如熱狗、棉花糖、香口膠)；v) 厚稠糊狀的醬(例如朱古力醬、花生醬)；以及 vi) 高纖維食物(例如西芹、新鮮菠蘿)。

為減低幼兒被食物哽喉的風險，照顧者應採用不同的方法改變高風險食物的質地，例如烹煮、切碎、搗碎、削掉外皮或除去纖維含量高的部分。避免讓幼兒進食難以改變質地的食物(例如細小的堅硬食物)。

Young children can choke on food easily especially when the foods are difficult to bite or chew and may then get stuck in their throats. This is because children have small air and food passages, and their food-biting or chewing skills are still under development.

Besides konjac jellies (do not dissolve easily), other foods more likely to cause choking include: i) small hard foods (e.g., nuts, raw carrot and sunflower seeds); ii) small round/oval foods (e.g., grapes, peas); iii) foods with skins/leaves (e.g., sausages, lettuce, nectarines); iv) compressible foods (e.g., hot dogs, marshmallows, chewing gum); v) thick pastes (e.g., chocolate spreads, peanut butter); and vi) fibrous/stringy foods (e.g., celery, raw pineapple).

To minimise the risks of food-related choking in young children, caregivers are advised to modify the texture of high risk foods by various techniques, e.g. cooking, fine-chopping, mashing, peeling off the skin, or removing the strong fibres. Avoid giving foods that the texture is difficult to be modified (e.g. small hard foods) to young children.



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