

本期內容 IN THIS ISSUE

- ❖ 二零二四年有關食肆及食物業的食物中毒個案回顧
- ❖ 精明選擇燕麥類食物，盡得營養的益處
- ❖ 袋裝飯糰的微生物質素
- ❖ 貯存不當的預先包裝食物中的肉毒桿菌
- ❖ 風險傳達工作一覽
- ❖ Review of Food Poisoning Outbreaks Related to Food Premises and Food Business in 2024
- ❖ Choosing Oat-Based Foods Wisely for Best Nutritional Benefits
- ❖ Microbiological Quality of Packaged Rice Balls
- ❖ *Clostridium botulinum* in Improperly-stored Pre-packaged Food
- ❖ Summary of Risk Communication Work

編輯委員會 EDITORIAL BOARD

總編輯
張勇仁醫生
顧問醫生(社會醫學)(風險評估及傳達)
行政編輯
周楚耀醫生
首席醫生(風險評估及傳達)
委員
吳志翔醫生 首席醫生(風險管理)
曾然宙獸醫 高級獸醫師(獸醫公共衛生)
吳義德先生 高級總監(食物安全中心)
林明偉先生 高級總監(食物安全中心)
譚秀球醫生 主管(風險評估組)
陳以信博士 高級化驗師(食物研究化驗所)
Editor-in-chief
Dr. Terence CHEUNG
Consultant (Community Medicine)
(Risk Assessment and Communication)
Executive Editor
Dr. Tony CHOW
Principal Medical Officer
(Risk Assessment and Communication)
Members
Dr. Henry NG
Principal Medical Officer (Risk Management)
Dr. Benedict TSANG
Senior Veterinary Officer (Veterinary Public Health)
Mr. M W LAM
Senior Superintendent (Centre for Food Safety)
Mr. Edmond NG
Senior Superintendent (Centre for Food Safety)
Dr. Carole TAM
Head (Risk Assessment Section)
Dr. Gabriel CHAN
Senior Chemist (Food Research Laboratory)

二零二四年有關食肆及食物業的食物中毒個案回顧

Review of Food Poisoning Outbreaks Related to Food Premises and Food Business in 2024

食物安全中心風險管理組
蔡育嬌醫生報告

Reported by Dr. Choi Yuk Kiu, Senior Medical & Health Officer, Risk Management Section, Centre for Food Safety

本文旨在回顧2024年食物環境衛生署(食環署)食物安全中心(食安中心)在二零二四年所接報與本地食物業處所及食物業有關的食物中毒個案。

This article reviews the food poisoning outbreaks (FPO) related to local food premises and food businesses reported to the Centre for Food Safety (CFS) of the Food and Environmental Hygiene Department (FEHD) in 2024.

根據第 599 章《預防及控制疾病條例》，食物中毒是香港的法定須呈報的疾病。所有醫生均須將所有可疑的食物中毒個案通知衛生署。過去十年，接獲與食物業處所有關的食物中毒個案宗數在每年 117 宗至 256 宗之間波動。二零二四年，中心接獲192宗由衛生署轉介的食物中毒個案，涉及739人(見圖一)。食環署會巡查所有相關食物業處所進行調查。

Food poisoning outbreaks is a statutory notifiable disease in Hong Kong under the Cap 599 Prevention and Control of Disease Ordinance. All medical practitioners are required to notify the Department of Health (DH) of all suspected FPOs. The number of reported FPO related to food premises fluctuated in the past decade, ranging from 117 to 256 cases per year. In 2024, the CFS received 192 food poisoning cases referred by the DH, affecting 739 individuals (see Figure 1). FEHD will inspect all the concerned food premises for investigation.

病原體及成因

在二零二四年，由於部份衛生防護中心轉介的個案涉及超過一種病原體，因此各類食物中毒個案的病原體總百分比超過100%。二零二四年，所有食物中毒個案的前3位病原體為諾如病毒(46.9%)、沙門氏菌(34.4%)和副溶血性弧菌(28.1%)。天然毒素(如雪卡毒素、貝類毒素)

Causative Agents and Contributing Factors

As some of the FPO reported by the CHP in 2024 involved more than one pathogens, resulting in the total percentage of causative agents exceeding 100%. In 2024, the top 3 causative agents for all FPO were Norovirus (46.9%), *Salmonella* (34.4%) and *Vibrio parahaemolyticus* (28.1%). Biochemical cases (e.g., ciguatoxin, shellfish toxin) and chemical case account for 4.2% and 0.5% of all FPO. Overall, "consumption of raw food", "contamination

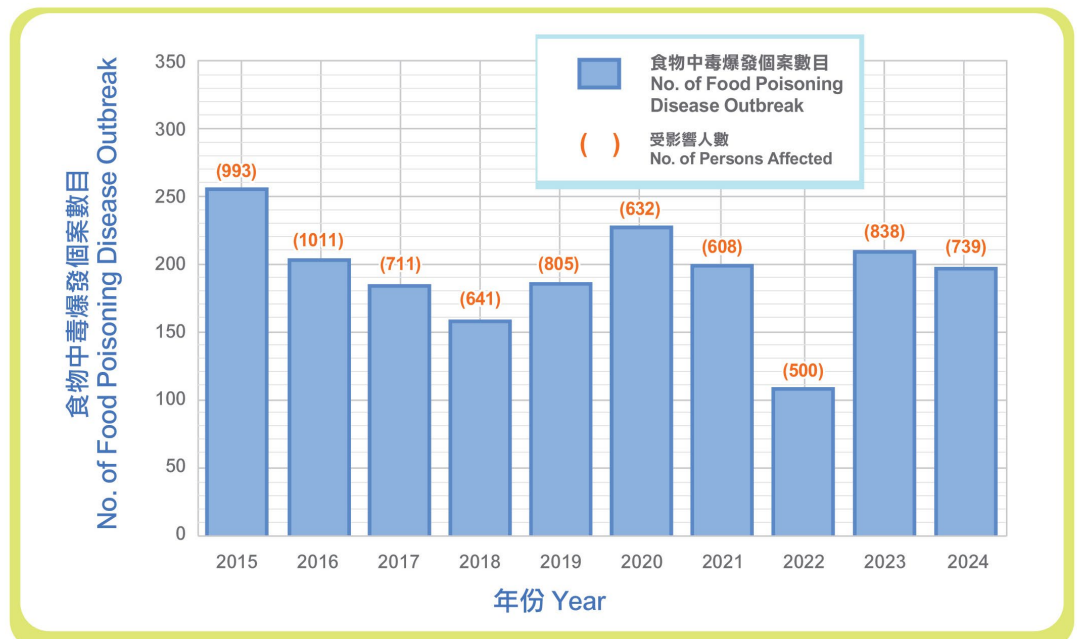


圖1: 2015年至2024年與食物業處所及食物業有關的食物中毒事件宗數及受影響人數

Figure 1: Number of food poisoning outbreaks related to food premises and food business and the corresponding number of persons affected from 2015 to 2024

和化學物質分別佔所有食物中毒個案的 4.2% 和 0.5%。整體而言，二零二四年食物中毒個案最常見的三大成因分別是「食用生的食物」、「被用具污染」和「食物未經徹底煮熟」。

病原體	百分比 #
諾如病毒	46.90%
沙門氏菌	34.40%
副溶血性弧菌	28.10%
天然毒素 (如雪卡毒素、貝類毒素)	4.20%
化學物質	0.50%
# 由於部份個案的流行病學調查未能分辨確實病原體(如未有臨床化驗樣本結果)，所以一宗個案可以涉及多於一種病原體 (如諾如病毒和沙門氏菌等)。	

二零二四年的食物中毒個案摘要

(i) 涉及副溶血性弧菌和未經徹底煮熟的花甲相關的集群性食物中毒個案

食安中心共接獲四宗相關的食物中毒個案轉介，合共 15 人受影響。食安中心在接獲通報後，已即時派員到有關處所調查。中心調查後發現，有關食肆處理花甲的方式不當。花甲只是簡單烹煮，然後在室溫下放置幾個小時冷卻。接到訂單後，食物處理人員會將自製的醬汁（用辣椒、大蒜和酒製成）與花甲混合，然後在未經進一步烹煮或重新加熱下就提供給顧客食用。食安中心抽取花甲樣本進行化驗，結果對副溶血性弧菌呈陽性反應。

食安中心已立即採取控制措施，包括暫停銷售花甲、對食物業處所進行徹底清潔和消毒、檢討和改善食物生產過程。向食物處理人員及其管理層提供了健康教育，強調徹底煮熟和翻熱的重要性，並仔細預計食物需求以避免製作過剩。中心在食物業處所採取管制措施後，並未再接獲相關的食物中毒個案。

(ii) 二零二四年涉及諾如病毒的食物中毒事件

在二零二四年，轉介至食安中心的諾如病毒食物中毒個案有所增加。諾如病毒最常見與食用生的或未煮熟的海鮮有關。2023 年，25.7% 的食物中毒個案被懷疑由諾如病毒導致，而生吃生蠔是主要原因。2024 年，諾如病毒食物中毒個案通報增加至所有食物中毒個案的 46.9%，涉及的食物種類廣泛。三分之二的諾如病毒爆發都是由生吃生蠔造成的。其他個案則與食用未煮熟的海鮮（除了生吃的生蠔）及食用受污染的即食食物（如燒味、沙律及甜點等）有關。

除了與生吃貝殼類海產相關的固有風險外，涉及多種食物的個案亦表明交叉污染在諾如病毒食物中毒爆發中發揮了作用。諾如病毒具有高度傳染性，容易透過人與人、污染物體/環境、食物、水傳播並引起胃腸炎。在控制這些食物業處所的諾如病毒食物中毒個案時，應強調適當的清潔和消毒以及適當的食物處理。食安中心已指示有關食肆使用含 5.25% 次氯酸鈉的 1:49 稀釋家用漂白水進行徹底清潔及消毒，並待 15 - 30 分鐘以徹底消滅病毒，然後用水清洗並抹乾。此外，食安中心亦提供食物處理人員有關諾如病毒的健康教育資料及健康講座，強調如廁後、處理食物前及進食前用視液和清水洗手的重要性。值得注意的是，酒精搓手液對諾如病毒無效，不應取代適當的洗手程序。患病的食物處理人員應向其管理層報告，並應在康復前暫停從事任何與食物、食品物接觸表面和食物器具接觸相關的工作。

總結

整體而言，過去十年食物中毒事件的數字波動。沙門氏菌、副溶血性弧菌和諾如病毒仍然是導致食物中毒個案的主要原因。食物業的管理人員必須落實「食物安全五要點」，並開始對員工進行更多食物安全培訓，並在食物業處所實施監控系統（例如保持食物在安全溫度和防止食物交叉污染）。

by utensil" and "inadequate cooking" were the three most common contributing factors in all FPO.

Causative agent	Percentage #
Norovirus	46.90%
<i>Salmonella</i> spp.	34.40%
<i>Vibrio parahaemolyticus</i>	28.10%
Biochemical cases (e.g. Ciguatoxin, shellfish toxin)	4.20%
Chemical case	0.50%
# As epidemiological investigation could not clearly define the causative agent (e.g. due to lack of clinical samples), therefore more than one type of causative agents (e.g. Norovirus and Salmonella) could be referred in one case.	

Highlights of FPO in 2024:

(i) Food poisoning clusters related to *Vibrio parahaemolyticus* and undercooked clams

There were a total of four linked cases affecting 15 persons referred to the CFS for this FPO. The CFS immediately conducted a site visit to the food premises upon notification. Investigation by the CFS revealed irregularities in food handling of clams in the concerned food premises. The clams were just briefly cooked and being placed at room temperature for few hours for cooling. Upon order, food handlers would mix the home-made sauce (prepared with chilli, garlic, and wine) with the clams and served it to customers without further cooking or reheating. The CFS collected a food sample of clams for testing and it was tested positive for *Vibrio parahaemolyticus*.

Control measures were implemented immediately including suspending the sale of the clam dish, conducting thorough cleaning and disinfection of the food premises, reviewing and improving the food production process. Health education was provided to the food handlers and their management, emphasizing the importance of adequate cooking, reheating and careful estimation of dish demand to avoid over-production. No more linked FPO was received by the CFS after the introduction of control measures in the food premises.

(ii) Food Poisoning Outbreaks involving Norovirus in 2024

There were an increasing number of Norovirus food poisoning outbreaks cases referred to the CFS in 2024. Norovirus is most commonly related to the consumption of raw or undercooked shellfish. In 2023, Norovirus was implicated as the suspected cause in 25.7% of all FPO, and the consumption of raw oysters was the predominant cause. In 2024, Norovirus FPO notification increased to 46.9% of all FPO, and a wide array of food items were involved. Consumption of ready to eat raw oysters contributed to two-thirds of the Norovirus outbreak. Others were related to consumption of undercooked seafood (other than raw oysters) and consumption of contaminated ready to eat food (such as siu mei, salad and dessert).

In addition to the inherent risk associated with raw shellfish, the diversity in other food items suggests the role of cross contamination in Norovirus food poisoning outbreaks. Norovirus is a highly contagious and can easily spread via person to person, contaminated object/ environment, food, water and cause gastroenteritis. Proper cleaning and disinfection and proper food handling should be emphasised in the control of Norovirus outbreaks in these food premises. The CFS has instructed the concerned food premises to use 1:49 diluted household bleach containing 5.25% sodium hypochlorite for thorough cleaning and disinfection, and leave for 15-30 minutes to allow time for the bleach to inactivate the viruses; then rinse with water and wipe the area dry. Moreover, the CFS provided health education material on norovirus and health talks for food handlers, emphasising the importance of handwashing with soap and water after using the toilet, before handling food, and before eating. Notably, alcohol-based hand sanitizers are ineffective against Norovirus and should not replace proper hand washing procedure. Sick food handlers should report to their management and suspend from engaging in any work related to contact with food, food contact surfaces and food utensils until recovery.

Conclusion

Overall, the number of food poisoning outbreaks fluctuated in the past decade. *Salmonella*, *Vibrio parahaemolyticus* and Norovirus remain to be the main causes of FPO. It is important for the management of the food business to implement "Five Keys to Food Safety" and start to introduce more food safety training to staff and implement the monitoring system (such as safe cooking and keeping temperature and prevention of contamination to cook food) in the food premises.

精明選擇燕麥類食物，盡得營養的益處

Choosing Oat-Based Foods Wisely for Best Nutritional Benefits

食物安全中心風險傳達組
科學主任鄧紹平博士報告

Reported by Dr. Anna SP TANG, Scientific Officer,
Risk Communication Section, Centre for Food Safety

由於燕麥對健康具有多種益處，其深受注重健康，特別是奉行高纖低糖飲食人士的歡迎。然而，最近有些經過加工的燕麥類食物和飲品因糖分含量高而受到關注，並引發其對健康能否帶來好處的疑慮。本文會探討如何明智地選擇燕麥類食物，增加營養方面的益處。

Oat grain has been a popular food choice for health-conscious individuals due to its numerous health-related benefits, particularly for those following a high fibre and low sugar diet. However, some processed oat-based foods and beverages have recently come under scrutiny for their high sugar content, raising doubts about their potential health benefits. This article explore how to choose oat-based foods wisely to maximise the best nutritional benefits.

燕麥的營養價值及對健康的益處

燕麥是來自燕麥植物的的完整種子，含豐富複合碳水化合物，還含有大量膳食纖維，特別是水溶性纖維β-聚葡萄糖。多項研究指出，定期進食燕麥食品，與降低膽固醇吸收有關，也能減低患上心血管疾病、癌症、糖尿病及胃腸病的風險。燕麥對健康帶來種種好處，主要是由於燕麥本身糖分含量低，纖維含量高，有助減少膽固醇吸收並減慢葡萄糖進入血液的速度。此外，纖維含量高的食物會增加飽腹感，有助減少過度進食，從而減低患上肥胖症和各種慢性疾病的風險。

Nutritional Value and Health Benefits of Oats

Oats are whole seeds from the *Avena sativa* plant. They are an excellent source of complex carbohydrates, rich in dietary fibre, especially the soluble fibre beta-glucan, and naturally low in sugar. Numerous studies have reported that regular consumption of oat products is associated with significant amount of reduction of serum cholesterol absorption, as well as a lower risk of cardiovascular diseases, cancer, diabetes and gastrointestinal disorders. The health benefits are largely attributed to the inherent low sugar content and high fibre content in oats, which help to reduce the absorption of cholesterol, and slow glucose uptake into the blood stream. Besides, fibre-rich foods promote satiety, reducing the likelihood of overeating and thereby lowers the risk of obesity and chronic diseases.

挑選燕麥類食物，增加對健康的益處

儘管燕麥營養豐富，但燕麥類食物對健康帶來的好處會視乎處理程序和添加的配料等因素而大有不同。例如，與肝醬等高脂肪配料一起煮的燕麥類食物便可能因為高熱量和脂肪而對心血管系統造成不良影響。因此，消費者應注意燕麥類食物中使用的配料。

Choosing Oat-Based Foods to Maximise Health Benefits

Although oat grains themselves are highly nutritious, the health benefits of oat-based foods can vary significantly depending on factors such as processing procedures and added ingredients. For example, oat-based food cooked with high fat ingredients like pâté may have adverse effects on cardiovascular system due to the high calorie and fat content. Thus, consumers should be aware of the ingredients used in the oat-based food.

一般而言，未精製的原片燕麥食品較高度加工的燕麥食品健康。全穀食物如燕麥米、鋼切燕麥及燕麥片經過最小程度的加工，因此保留了大部分纖維和營養價值。消費者應選擇精製程度較低的食物，並配以糖分低和脂肪含量低的食材，製作健康均衡的膳食。另一方面，高度加工的燕麥食品如預先包裝的穀類和燕麥綜合食品、穀麥、格蘭諾拉燕麥卷、燕麥條及燕麥飲品往往含有添加糖、糖漿、蜜糖和朱古力，令其糖分和脂肪含量增加。即使部分燕麥奶類飲品標榜“不加甜味”或“不含添加糖”，也可能因為複合碳水化合物在生產過程中分解而含有一些糖分。因此，細閱配料表和營養標籤以衡量營養素的確實含量並比較不同食品是必不可少的。選擇高纖、低脂和低糖的燕麥食品是增加對健康益處的關鍵。

In general, unrefined whole oat products are healthier than highly processed alternatives. Whole grains such as oat groats, steel-cut oats, and rolled oats retain most of their fibre content and nutritional value because they undergo minimal processing. Consumers are encouraged to choose these less refined options and pair them with low fat, low sugar ingredients as for a healthy balanced diet. On the other hand, highly processed oat-based products, such as prepackaged oat cereal mix, muesli, granola, oat bars and oat beverages often contain added sugars, syrup, honey and chocolate, which increase their sugars and fat contents. Even some oat milk products being highlighted as “unsweetened” or “with no added sugars” may contain certain amounts of sugars due to the breakdown of complex carbohydrate during production processes. Therefore, it is essential to

carefully read the ingredient list and nutrition labels to assess the actual nutrient contents and compare the products. Opting for oat products with higher fibre, less fats and less sugar contents is the key to maximising their health benefits.

精明選擇燕麥類食物以減少攝入糖分

燕麥可以作為符合低糖攝取量建議的健康飲食的一部分。為減低患上肥胖症、糖尿病及其他與過量進食游離糖和熱量過高相關的非傳染病的風險，世界衛生組織建議，游離糖的攝取量應少於每日所需能量的百分之十。以一個每日攝取2000千卡能量的成年人為例，每日游離糖的攝取量應少於50克(約10粒方糖)。以下是一些在低糖的均衡飲食中加入燕麥類食物和飲品的方法：

1. 選擇原味、未經加工的燕麥：選擇經過最低限度加工的燕麥如燕麥米、鋼切燕麥及燕麥片。添加新鮮水果或堅果而不要添加糖來增添味道。在家中配製燕麥和燕麥類食物，可控制糖的用量。

Choose Oat-based Foods Wisely to Reduce Sugar Intake

Oats can be part of the healthy diet that aligns with low sugar intake recommendations. To lower the risk of obesity, diabetes and other non-communicable diseases associated with excess consumption of free sugars and high calories, the World Health Organization recommends limiting the intake of free sugars to less than 10% of total energy intake. For an adult consuming a 2000 kcal diet, this equal to less than 50g of free sugars (about 10 sugar cubes) per day. Here are some practical tips for incorporating oat-based foods and beverages into a balanced, low sugar diet:

1. Choose plain, unprocessed oats: Opt for minimally processed oats like oat groats, steel-cut oats, or rolled oats. Enhance their flavor with fresh fruits or nuts instead of adding sugar. Preparing oatmeal and oat-based foods at home allows you to control the amount of sugar used.

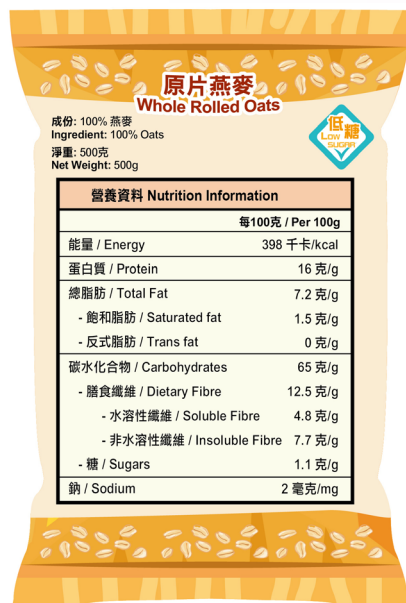


圖2: 參閱包裝上的成份表及營養標籤以選擇低糖食物
Figure 2: Read the ingredient list and nutrition label on the package to choose food products with low sugar content.

2. 細閱營養標籤：選擇預先包裝的燕麥類食物和飲品時，應對比不同食品並選擇低糖的食品。注意食品的分量大小。每100克固體食物或每100毫升液體食物含不超過5克糖，便屬於低糖食物。
3. 參閱配料表：避免或減少選擇添加了高果糖的粟米糖漿、蔗糖、果糖、麥芽糖、蜜糖、糖蜜或其他類別的糖等游離糖的食品。
4. 適量進食燕麥：加入燕麥作為均衡飲食的一部分。其他健康的穀類食物選擇包括大麥、藜麥、紅米、糙米和全麥麵包。

2. Read nutrition labels carefully: When selecting prepackaged oat-based foods and beverages: compare products and choose those with low sugar content. Be mindful of portion sizes. Foods containing not more than 5g of sugars per 100g solid food or 100 ml of liquid food are considered low in sugars.
3. Check ingredient list: Avoid or limit products with added free sugars which may appear as high fructose corn syrup, sucrose, fructose, maltose, honey, molasses, or other types of sugar, etc.
4. Consume oats in moderation: Incorporate oats as part of a balanced diet. Other healthy cereals options include barley, quinoa, red rice, brown rice, and whole-wheat bread.

袋裝飯糰的微生物質素 Microbiological Quality of Packaged Rice Balls

食物安全中心（食安中心）進行了一項研究，以評估袋裝飯糰的微生物質素，以及在室溫下存放的飯糰質素有何變化。二零二四年，食安中心在多家連鎖店收集了63對袋裝飯糰樣本進行分析。

研究結果顯示，全部樣本致病菌檢測均符合微生物含量的食物安全準則，沒有發現食物安全問題。然而，其中一個紅燒三文魚飯糰樣本因被發現含過量大腸桿菌而於衛生質素方面被評為欠佳。此外，三個在室溫存放的樣本相較在購買後隨即冷存的樣本，細菌數量高出了超過十倍。雖然此項結果顯示的是質素而非安全問題，但研究凸顯了食物製造及處理程序仍有地方需改善。

食物業界應遵守良好衛生規範；要長時間陳列的飯糰，應該要在配製後冷存。市民應盡早食用飯糰，如非立即食用，應以攝氏四度或以下冷藏。要遵從包裝上的指示貯存袋裝飯糰，並於「此日期或之前食用」的日期前食用。

The Centre for Food Safety (CFS) conducted a study to assess the microbiological quality of packaged rice balls and assess how their quality changes when stored under ambient conditions. Sixty-three pairs of packaged rice ball samples were collected from various retail chains for analysis in 2024.

The study results showed that the overall microbiological quality of the samples was satisfactory, with no food safety concern identified. However, one rice ball sample containing braised salmon was found to have an excessive level of *Escherichia coli*, resulting in an unsatisfactory rating for hygienic quality. Besides, three samples left at ambient temperature exhibited bacterial counts over 10 times higher than their counterparts refrigerated immediately after purchase. Although the finding suggested a quality issue rather than a safety concern, the study highlights potential areas for improvement in the food manufacturing and handling processes.

The trade should follow Good Hygiene Practices; rice balls intended for prolonged display should be refrigerated. The public should consume rice balls as soon as possible, or refrigerate them at 4°C or below if they are not to be consumed immediately. For packaged rice balls, follow storage instructions and consume them before their use-by dates.

貯存不當的預先包裝食物中的肉毒桿菌 *Clostridium botulinum* in Improperly-stored Pre-packaged Food

2025年2月，日本一名女子因肉毒桿菌毒素中毒入院接受治療。雖然她意識清醒，但全身癱瘓，需依賴呼吸儀器維持生命。調查發現，食物中毒事故的起因是食用了貯存不當的預先包裝食物。相關食物沒有按照指示冷凍貯存，而是在室溫存放超過一個月。

肉毒桿菌的孢子在環境中無處不在。當食物含有肉毒桿菌的孢子，孢子便可在氣調或真空包裝等低氧（即含氧量比大氣環境低）的環境下發芽、繁殖並產生毒素。相比其他細菌，低氧的環境較有利於肉毒桿菌生長。

要預防肉毒桿菌毒素中毒，食物業界應確保氣調或真空包裝食物經過妥善加工，以消滅所有孢子，並就貯存、保質期和處理方法提供清晰的資料。消費者應遵從有關預先包裝食物的貯存和處理指示，並在食用限期前進食。如懷疑食物有問題，便不應食用。

In February 2025, a woman in Japan was hospitalised due to *botulinum* toxin poisoning. Although she remained conscious, she developed general paralysis and required life support through mechanical ventilation. Investigation revealed that the poisoning resulted from consuming prepackaged food that had been stored incorrectly at room temperature for over a month, against the refrigeration requirement.

The spores of *Clostridium botulinum* are ubiquitous in the environment. When present in food, these spores can germinate, multiply, and produce toxins under low-oxygen conditions like in *modified-atmosphere* or *vacuum* packages (i.e., a lower oxygen level than in the atmosphere), which favour the growth of *Clostridium botulinum* over other bacteria.

To prevent botulinum toxin poisoning, the food trade should ensure that modified-atmosphere or vacuum-packed food is properly processed to eliminate any spores. Clear information for storage, durability, and preparation should also be provided. Consumers should store and prepare prepackaged food according to instructions and consume it before the expiry date. Do not consume any food when in doubt.



風險傳達工作一覽（二零二五年二月）

Summary of Risk Communication Work (February 2025)

事故/ 食物安全個案 Incidents/ Food Safety Cases: 470	公眾查詢 Public Enquiries: 131	業界查詢 Trade Enquiries: 159	食物投訴 Food Complaints: 768	給業界的快速警報 Rapid Alerts to Trade: 5
給消費者的食物警報 Food Alerts to Consumers: 4	懷疑食物中毒個案通報 Suspected Food Poisoning Alerts: 3	教育研討會/ 演講/ 講座/ 輔導 Educational Seminars/ Lectures/ Talks/ Counselling: 49	上載到食物安全中心網頁的新訊息 New Messages Put on the CFS Website: 60	