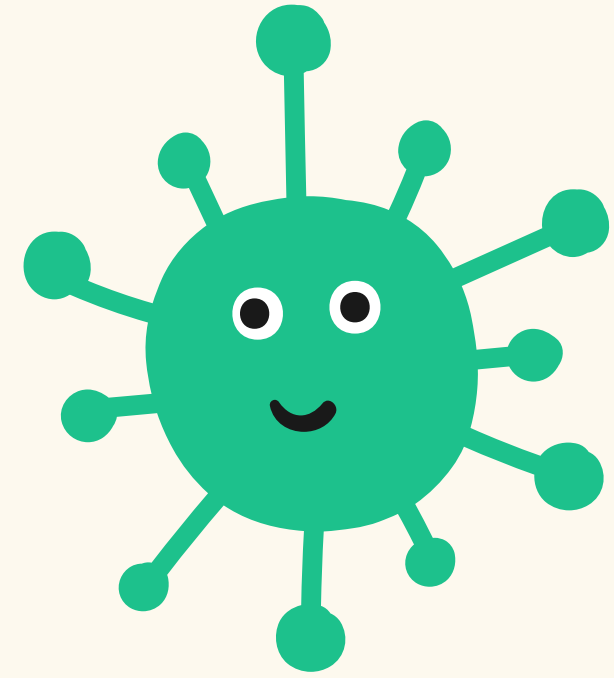
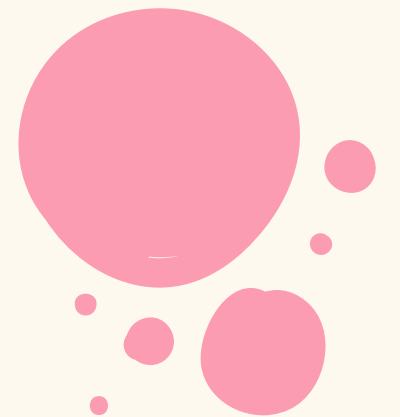


應對食物中的 抗菌素耐藥性問題 業界篇



How to address AMR in food for food businesses

業界諮詢論壇 第八十七次會議 (二零二四年十二月十三日)
87th Meeting of the Trade Consultation Forum (13 December 2024)





什麼是抗菌素耐藥性?

What is antimicrobial resistance?

- 抗菌素耐藥性是指某種微生物（主要為細菌）具有令抗菌劑（例如抗生素）不再對其有效的能力

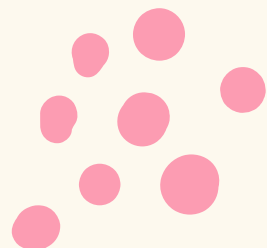
Antimicrobial resistance (AMR) is the ability of a microorganism, most significantly bacteria, to stop an antimicrobial agent, such as antibiotics, from working against it

- 結果，標準治療無效，病人受感染的情況持續，抗菌素耐藥性微生物更可能傳染他人

As a result, standard antimicrobial treatments become ineffective, infections persist and may spread to others

- 抗菌素耐藥性問題若不獲改善，有效的治療方案會愈趨減少

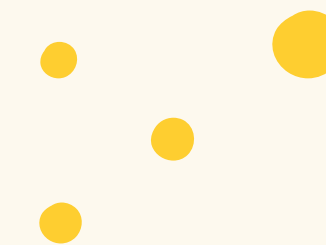
If the problem of AMR does not improve, there would be fewer effective treatment options





什麼是抗菌素耐藥性? (2)

What is antimicrobial resistance? (2)

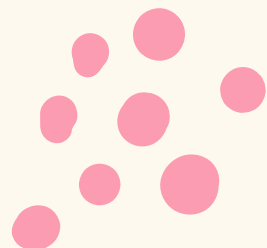


- 這些抗菌素耐藥性細菌不一定是病原體，也可以是於人體裡與人類共生而又對身體無害的微生物

AMR bacteria are not necessarily pathogens. They can also be commensal bacteria that derive benefits from their association with humans and are generally harmless

- 抗菌素耐藥性細菌不論是否有致病性，都有可能把抗菌素抗藥性基因轉移到人體的其他細菌，因而影響抗菌素的藥效

AMR bacteria can cause illnesses, they may transfer their antibiotic resistance genes to other bacteria in our body and consequently reduce the effectiveness of antimicrobials



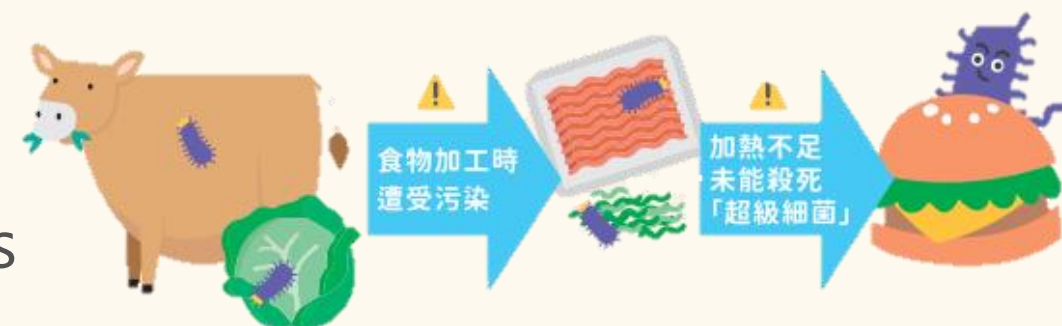


抗菌素耐藥性如何擴散到人類

How AMR spreads to humans

- ① 抗菌素耐藥性可隨時間通過基因轉變而自然出現

AMR may occur naturally over time, usually through genetic changes

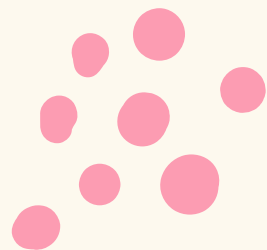


- ② 抗菌素耐藥性可以因為濫用抗生素(例如養殖動物期間)而引致，通過污染食物源頭進入食物鏈

It can also be a result of misuse of antimicrobials (e.g. during animal husbandry), whereby AMR bacteria may enter the food chain

在屠房屠宰牲口時，不慎將食用動物的腸內物污染到肉上。如果進食受污染而未經徹底煮熟的肉類，人類便有機會受抗菌素耐藥性細菌感染

Careless evisceration at slaughterhouse may contaminate the animal's meat with its intestinal content. Humans may be infected by AMR bacteria if the meat is consumed raw or undercooked.



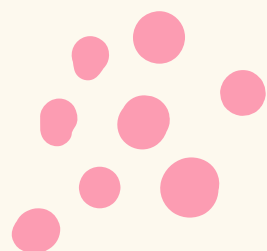


抗菌素耐藥性如何擴散到人類 (2)

How AMR spreads to humans (2)

- ③ 畜牧所產生的糞便如果沒有被妥善處理，土壤或水源或會受污染。如果在受污染的土壤種植或使用受污染的水灌溉農作物(例如蔬菜水果)，抗菌素耐藥性細菌可進入食物鏈

Improper disposal of manure from animal husbandry may allow AMR bacteria to contaminate soil or water. AMR bacteria may enter the food chain if produce such as vegetables or fruits are grown on contaminated soil or irrigated using contaminated water.





抗菌素耐藥性細菌會否影響我?

Would AMR affect me?



- 抗菌素耐藥性細菌感染會傳播給他人，且較難醫治的，嚴重的甚至可致命，因此威脅社區及人口健康

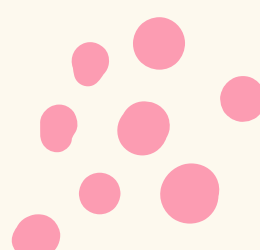
AMR bacteria can spread to others, and infections arising from these bacteria are difficult to treat. Severe infection may be fatal, thus threatening community and population health

- 現時抗菌素耐藥性問題令治療感染和預防死亡的工作更趨困難，情況惹人關注

AMR is of great concern as the current problems are complicating efforts to treat their infections and prevent deaths

- 我們需採取行動加強食物安全原則和措施，由於生態系統健康包括活生及非活生成分的健康，我們需要改善食物、人類與環境之間的協調工作

We need to take action on reinforcing food safety principles and practices. As ecosystem health involves the health of living and non-living components, we need to improve the balance between food, humans and the environment





「一體化健康」方法以對付抗菌素耐藥性

One Health approach to combat AMR

「一體化健康」

The "One Health" approach

- 人類與動物的健康和環境息息相關
Human, animal and environmental health are interconnected
- 抗菌素耐藥性防控策略的主要元素
A major element of AMR control and prevention strategies



人類醫學、獸醫、農業和食物界別均須同心協力採取行動，減緩抗菌素耐藥性的興起和傳播

Human medicine, veterinary medicine, agriculture and the food sector should therefore adopt a collaborative approach to minimise the emergence and spread of AMR

人類如果進食未經徹底煮熟的受污染食物，又或者製備食物的方式不衛生（例如處理食物前沒有洗手）造成交叉污染，有機會接觸到耐藥性細菌

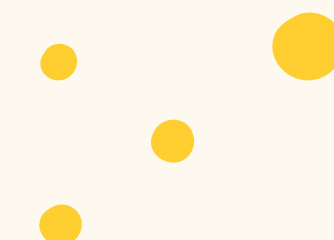
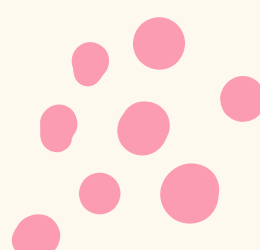
People may be exposed to AMR bacteria when they consume contaminated food without being thoroughly cooked, or prepare food with poor food hygiene practice (e.g. hands are not washed before handling food)



即食食物內的抗菌素耐藥性

AMR in Ready-to-eat (RTE) food

- 「即食食物」：已預先烹製，無須再烹煮便可進食的食物
“Ready-to-eat foods” : Foods that have been prepared so they can be consumed without any additional cooking
- 部份食物都是在生或未煮熟的狀態下進食的，例如刺身、沙律菜、三文治、切開水果、燒味及滷味，以及未煮熟的肉類等。即食食品屬高風險食物，原因是沒有經過熱處理或熱處理不足，未能消滅當中可致病的微生物
Some foods are served raw or undercooked, such as sashimi, salad greens, sandwiches, cut fruits, Siu-mei and Lo-mei, and undercooked meat. RTE foods are high-risk foods as there is no or inadequate heat treatment to eliminate the microorganisms present that can pose risks to human health
- 烹煮可殺死食物中的抗菌素耐藥性細菌，而生或未煮熟的食物則容易存有微生物，包括可透過進食途徑感染人類的抗菌素耐藥性細菌
While cooking can kill AMR bacteria, raw or undercooked foods are more likely to carry microorganisms including AMR bacteria that can be transferred to humans through food intake





食物內抗菌素耐藥性恆常監測計劃

Routine Surveillance Programme on AMR in food

- 因應抗菌素耐藥性對公共衛生的影響，食物安全中心（中心）自 2022 年起正進行食物內抗菌素耐藥性恆常監測計劃

Considering the public health significance of AMR, the Centre for Food Safety (CFS) has been conducting a routine surveillance programme on AMR in food since 2022

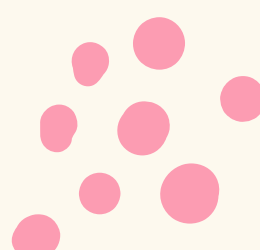
- 從香港各處零售層面抽取食物樣本

Food samples are collected from retail level across Hong Kong

- 測試細菌對抗菌素的耐藥性

Resistance of bacteria to antimicrobials is tested

- 超廣譜β-內酰胺酶耐藥性腸道桿菌 Extended-spectrum beta-lactamase-producing Enterobacteriaceae (ESBL-PE)
- 產碳青霉烯酶腸道桿菌 Carbapenemase-producing Enterobacteriaceae (CPE)
- 耐萬古霉素腸道鏈球菌 Vancomycin-resistant *Enterococcus* (VRE)

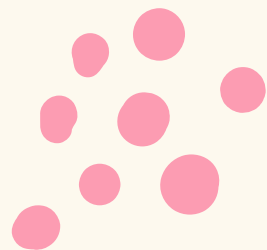




超廣譜β-內酰胺酶耐藥性腸道桿菌

Extended-spectrum β-lactamase-producing *Enterobacteriaceae* (ESBL-PE)

- 「超廣譜β-內酰胺酶(ESBL)耐藥性腸道桿菌」是其中一種備受關注的超級細菌，乙內酰胺是一大類常用抗生素，而ESBL這種酶可以分解幾乎所有乙內酰胺，令治療失效
Extended-spectrum β-lactamase (ESBL)-producing *Enterobacteriaceae* is one of the superbugs of concern. β-lactam is a large class of commonly used antibiotics. ESBLs are enzymes that can break down nearly all β-lactams and make them ineffective for treatment.
- ESBL耐藥性腸道桿菌在《世衛組織新型抗生素研發重點病原體清單》當中屬於「1類重點：極為重要」級別
ESBL-producing *Enterobacteriaceae* is ranked as "Priority 1: CRITICAL" on the list of "WHO priority pathogens list for research and development of new antibiotics"

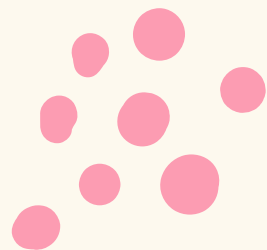




產碳青霉烯酶腸道桿菌 (1)

Carbapenemase-producing Enterobacteriaceae (CPE) (1)

- 產碳青霉烯酶腸道桿菌對碳青霉烯產生耐藥性
Carbapenemase-producing Enterobacteriaceae (CPE) are resistant to a group of antimicrobials called carbapenems
- 根據世界衛生組織（世衛）資料，碳青霉烯是對人類醫學至關重要的抗微生物藥物
According to information of the World Health Organization (WHO), carbapenems are critically important antimicrobials for human medicine
- 碳青霉烯是用於治療當細菌對所選主要藥物有耐藥性時的各種嚴重感染，院內感染，多種細菌感染
Carbapenems are used to treat infections including: a variety of serious infections when an organism is resistant to the primary agent of choice, infections acquired in hospital, mixed bacterial infections





產碳青霉烯酶腸道桿菌 (2)

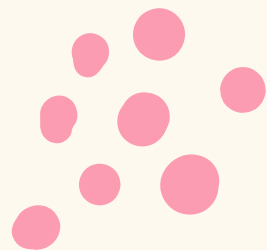
Carbapenemase-producing Enterobacteriaceae (CPE) (2)

- 產碳青霉烯酶腸道桿菌對大量的抗生素（包括碳青霉烯及第三代頭孢菌素等用於治療多重抗藥性細菌的最佳可用抗生素）產生耐藥性

CPE have become resistant to a large number of antibiotics, including carbapenems and third generation cephalosporins – the best available antibiotics for treating multi-drug resistant bacteria

- 耐碳青霉烯腸道桿菌、鮑氏不動桿菌及綠膿假單胞菌在《世衛組織新型抗生素研發重點病原體清單》當中屬於「1類重點：極為重要」級別

Carbapenem-resistant *Enterobacteriaceae*, *Acinetobacter baumannii* and *Pseudomonas aeruginosa* are bacteria ranked as "Priority 1: CRITICAL" on the list of "WHO priority pathogens list for research and development of new antibiotics"

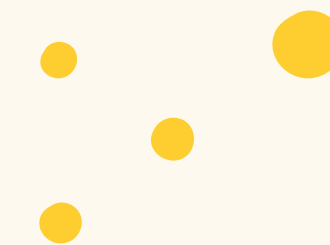
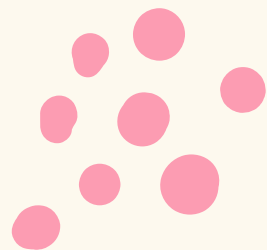




耐萬古霉素腸道鏈球菌

Vancomycin-resistant *Enterococcus* (VRE)

- 耐萬古霉素腸道鏈球菌是對萬古霉素產生耐藥性的腸道鏈球菌
Enterococcus that are resistant to the effects of vancomycin are known as VRE
- 根據世衛資料，萬古霉素是對人類醫學至關重要的抗微生物藥物
According to information of the WHO, vancomycin is a critically important antimicrobial for human medicine
- 萬古霉素是糖肽類抗菌素的其中一種
Vancomycin is a member of a class of antimicrobial agents known as glycopeptides
- 糖肽是用作治療嚴重腸道鏈球菌感染為數不多的治療方法之一
Glycopeptides are one of the few available therapies for serious *Enterococcus* bacterial infections



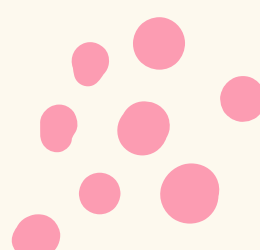


食物抗菌素耐藥性監測計劃的即食食物

RTE food in the AMR Surveillance Programme on Food

- 自恆常食物抗菌素耐藥性監測計劃開始至今，一共抽取了超過 1000 個即食食物樣本，包括：
Over 1000 RTE food samples were collected since the start of the AMR Routine Surveillance Programme. Samples included are:

- | | |
|---------|---------------|
| • 蔬菜 | Vegetables |
| • 刺身 | Sashimi |
| • 切開的水果 | Cut fruits |
| • 三文治 | Sandwiches |
| • 燒味 | Siu Mei |
| • 滷味 | Lo Mei |
| • 壽司 | Sushi |
| • 煙三文魚 | Smoked salmon |
| • 生蠔 | Raw oysters |
| • 其他 | Others |

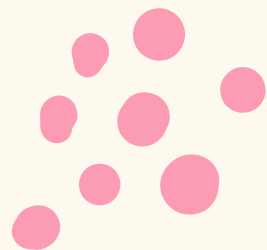




結果 – 即食食物的抗菌素耐藥性細菌

Results – AMR bacteria in RTE food

- 截至二零二四年二月，50 個即食食物樣本被驗出ESBL耐藥性腸道桿菌，9 個即食食物樣本被驗出產碳青霉烯酶腸道桿菌，1 個即食食物樣本被驗出耐萬古霉素腸道鏈球菌
As of February 2024, 50 RTE food samples were identified as ESBL-PE positive, 9 RTE food samples were identified as CPE positive, and 1 RTE food sample was identified as VRE positive
- 中心將繼續抽取不同類型的食物樣本作抗菌素耐藥性細菌測試
CFS will continue collection of different food samples for testing of AMR





中心就驗出抗菌素耐藥性細菌的樣本採取的行動

Actions of CFS when AMR positive samples were detected

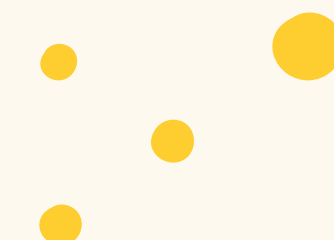
- 食物環境衛生署或會按實際情況派員巡查有關商戶
Food and Environmental Hygiene Department may conduct site inspection to concerned vendors depending on actual situation
- 視察個人衛生情況及生產流程等事項是否有潛在的交叉感染，例如
Conduct inspection to look for potential risk of cross-contamination related to personal hygiene and food processing workflow, e.g.
 - 同一食物製造廠內的不同食物之間的交叉感染
Cross-contamination between different food produced in the same food factory
 - 員工在不同生產線之間的流動亦有機會引致交叉感染
Movement of staff from different production lines may result in cross-contamination
- 指示有關商戶清洗處所
Instruct the concerned vendors to conduct cleansing
- 提供有關抗菌素耐藥性的健康建議及小冊子
Provide health advice and pamphlet on AMR and food safety



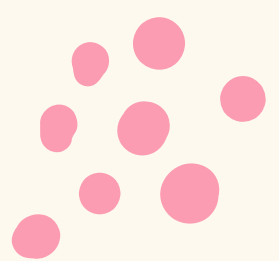


業界的注意事項 (1)

Points to note for the trade (1)



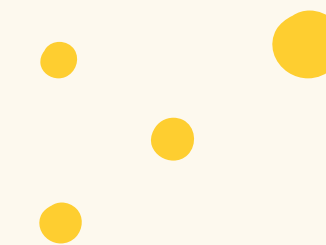
- 加強食物從業員的手部衛生及衛生教育
Enhance hand hygiene and hygiene education of the food handlers
 - 配戴手套前要先洗手
Hands should be washed being wearing gloves
 - 應提供視液以作洗手之用
Liquid soap should be provided for hand-washing
 - 可進行微生物測試以檢查食物製造環境的衛生。頻密接觸點(例如電掣及門柄)的總菌數或可反映食物從業員的手部衛生情況
Microbiological tests may be conducted to check the hygiene of food production environment. TBC count of high-touch areas such as switches and door knobs may reflect hand hygiene situation of the food handlers
 - 可藉著比較實行衛生措施前後的測試結果得知措施的成效。應持續監察測試結果，而監察的頻率則視乎措施的成效而定
The effectiveness of hygiene measures could be shown by comparing the test results before and after implementation of the hygiene measures. Test results should be continuously monitored, while the frequency of the monitoring depends on the effectiveness of the hygiene measures





業界的注意事項 (2)

Points to note for the trade (2)



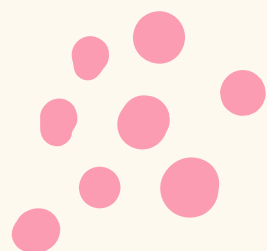
確保消毒劑有效

Ensure the effectiveness of disinfectants

- 使用實時監測或試紙以監察氯化物的水平，確保消毒劑的濃度得而維持
Monitor the level of chloride with real-time monitor or test with test paper and ensure the concentration of the disinfectant can be maintained
- 除去水果表面可能令氯化物等消毒劑失去活性的有機物 (例如移除菠蘿的冠)
Removal of organic matters on the surface of fruits which may deactivate the disinfectants like chloride substance (e.g. remove the crown of pineapple)
- 檢查用作浸泡的水的水溫
Check the temperature of soaking water

避免食物與食物包裝內的其他物品 (例如裝飾用物品) 潛在的交叉感染

Avoid potential cross-contamination between food and other materials (e.g. decorative material) of food packaging

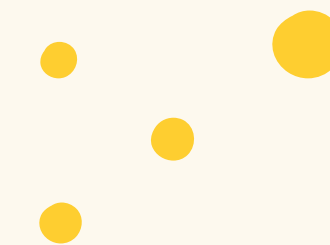
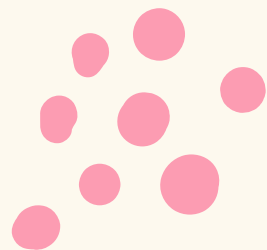




業界的注意事項 (3)

Points to note for the trade (3)

- 遵守有關衛生經理及衛生督導員的規定，以確保食物安全的妥善監督
Observe the requirements of Hygiene Manager and Hygiene Supervisor to ensure proper supervision of food safety
- 巡查時應出示衛生經理及衛生督導員的證書
The certificate of hygiene manager / hygiene supervisor should be available at the time of inspection
- 為食物製造廠申領適合的牌照及批註
Obtain suitable license and endorsement(s) for food factory
- 確保通風設施依照發牌時所核准的計劃運行
Ensure the ventilation system are working as approved under licensing condition
- 妥善保養食物製作區的空調設備(如出風口的葉片及管道)，因為積聚的塵埃可能會被吹至食物表面
Proper maintenance of the air conditioner in the food preparation areas especially the louvers of the outlets and the ducts, as the accumulated dust may fall on the surface of food





如何對抗即食食品的抗菌素耐藥性

How to tackle AMR in RTE food

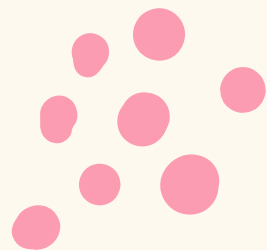


- 食物從業員應了解和實踐「食物安全五要點」，並與良好衛生規範 (GHP) 結合應用，以確保從採購、貯存、配製、烹煮到運輸和供餐的食物安全

Food handlers should understand and practice the "Five Keys to Food Safety", and apply them in conjunction with Good Hygiene Practice (GHP) to ensure food safety from procurement, storage, preparation, cooking to transportation and serving

- 運用「食物安全五要點」，對無論是否帶有抗菌素耐藥性的病原體，都能有效預防食源性疾病

Applying the "Five Keys to Food Safety" can effectively prevent foodborne illness from pathogens with or without antimicrobial resistance





食物安全五要點

Five Keys to Food Safety

食物安全五要點由世界衛生組織提倡，旨在為食物業界和公眾提供相關指引，保障食物安全

The five keys to food safety has been advocated by the WHO to provide handy tips for the trade and public to ensure safe eating



精明選擇

選擇安全的原材料

Choose

Choose safe raw materials

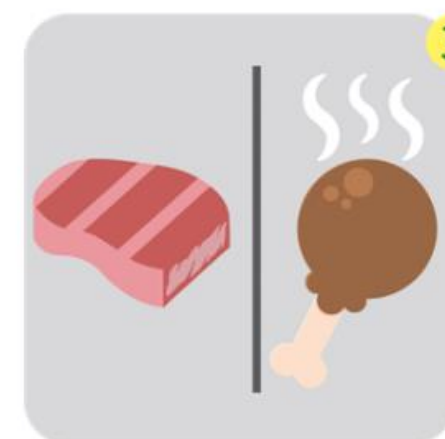


保持清潔

保持雙手及用具清潔

Clean

Keep hands and utensils clean



生熟分開

分開生熟食物

Separate

Separate raw and cooked food

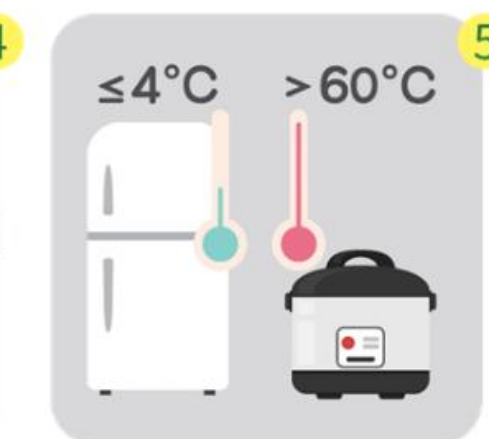


煮熟食物

徹底煮熟食物

Cook

Cook thoroughly

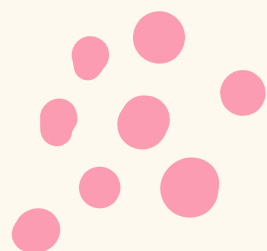


安全溫度

把食物存放於安全溫度

Safe temperature

Keep food at safe temperature





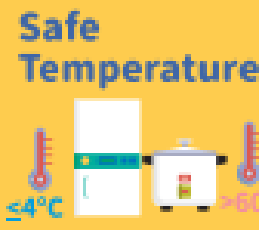


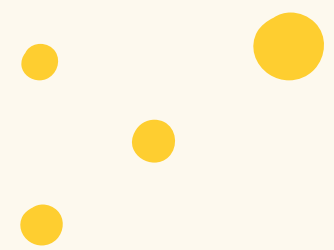
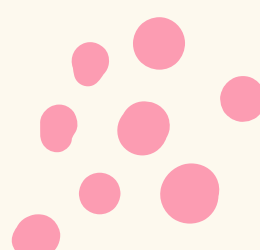


食物安全五要點 (2)

Five Keys to Food Safety (2)

五要點	建議	重要性
 <p>精明選擇</p>	<ul style="list-style-type: none"> ● 避免食用生或未煮熟的食物，尤其是高危人士 	<ul style="list-style-type: none"> ● 生的或未煮熟的食物未經熱處理，可能含有「超級細菌」
 <p>徹底煮熟</p>	<ul style="list-style-type: none"> ● 上菜前徹底煮熟食物 	<ul style="list-style-type: none"> ● 烹調可有效殺死食物中的「超級細菌」
 <p>保持清潔</p>	<ul style="list-style-type: none"> ● 清洗蔬果才進食 ● 處理食物前清潔雙手和食物準備區 	<ul style="list-style-type: none"> ● 水洗可去除部分食物表面的「超級細菌」 ● 防止熟食或即食食物被「超級細菌」交叉污染
 <p>生熟分開</p>	<ul style="list-style-type: none"> ● 將熟食或即食食物與生的食物分開及存放 ● 用不同工具分開處理熟食或即食食物和生食 	<ul style="list-style-type: none"> ● 防止熟食或即食食物受到生食的「超級細菌」交叉污染
 <p>安全溫度</p>	<ul style="list-style-type: none"> ● 如不立即食用，應將凍食保持在攝氏 4 度或以下，熟食則保持在攝氏 60 度以上 	<ul style="list-style-type: none"> ● 安全溫度可避免食物滋生細菌

Five Keys	Advice(s)	Why important?
 <p>Choose</p>	<ul style="list-style-type: none"> ● Avoid eating raw or undercooked food, especially for susceptible populations 	<ul style="list-style-type: none"> ● Without heat treatment, raw or undercooked food can contain "superbugs"
 <p>Cook</p>	<ul style="list-style-type: none"> ● Cook food thoroughly before serving 	<ul style="list-style-type: none"> ● Cooking is effective to kill "superbugs" in food
 <p>Clean</p>	<ul style="list-style-type: none"> ● Wash fruits and vegetables before eating ● Clean hands and food preparation areas before handling foods 	<ul style="list-style-type: none"> ● Washing can partially remove "superbugs" from food's surface ● Prevent cross-contamination of cooked or ready-to-eat foods with "superbugs"
 <p>Separate</p>	<ul style="list-style-type: none"> ● Store cooked or ready-to-eat foods and raw foods separately ● Handle cooked or ready-to-eat foods and raw foods with separate utensils 	<ul style="list-style-type: none"> ● Prevent cross-contamination of cooked or ready-to-eat foods with "superbugs" from raw food
 <p>Safe Temperature</p>	<ul style="list-style-type: none"> ● Keep cold food cold at 4°C or below and hot food hot over 60°C if not consumed at once 	<ul style="list-style-type: none"> ● Safe temperatures can avoid bacterial growth in food





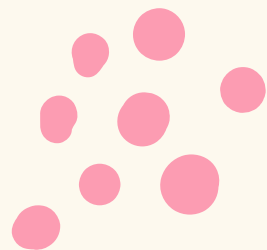
即食食品與食物安全五要點

RTE food and Five Keys to Food Safety



- 由於燒味、滷味、三文治等食物在製作後不會煮熟或重新加熱，因此「保持清潔」、「生熟分開」和「安全溫度」對於處理即食食物中的食源性抗菌素耐藥性尤為重要

As food such as Siu-mei, Lo-mei, sandwiches may not be cooked or reheated after preparation, “clean”, “separation” and “safe temperatures” are particularly important in addressing foodborne AMR in RTE food





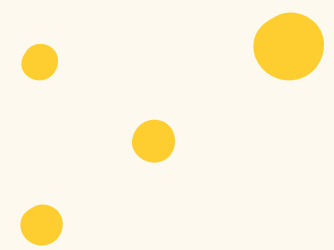
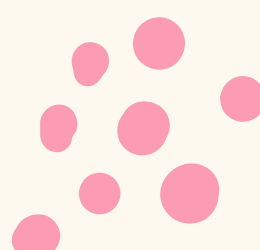
保持清潔 - 什麼時候要洗手？

Clean - When should you wash your hands?

- 我們的雙手可能沾染了數以百萬計的微生物，當中有些更會令我們生病

Our hands may carry millions of microorganisms, including those that may result in illness

- 處理食物前後
Before and after handling food
- 如廁後
After toilet
- 觸摸面部後
After touching face
- 咳嗽、打噴嚏或擤鼻子後
After coughing, sneezing or blowing nose
- 帶上手套前與脫下手套後
Before and after wearing gloves
- 完成清潔工作後
After cleaning up
- 處理髒物如金錢、垃圾後
After handling dirty items, e.g. cash and garbage
- 接觸化學品後、吸煙後
After handling chemicals and smoking





保持清潔 (2)

Clean (2)

- ① 把衣袖拉到手肘

Pull sleeves up to the elbows

- ② 以流動清水弄濕雙手

Wet hands under running water

- ③ 塗上梘液

Apply liquid soap

- ④ 徹底搓手20秒，包括前臂、手腕、手掌、手背、手指及指甲底下

Rub hands thoroughly for 20 sec, including the forearms, wrists, palms, back of hands, fingers and under the fingernails

- ⑤ 徹底沖洗

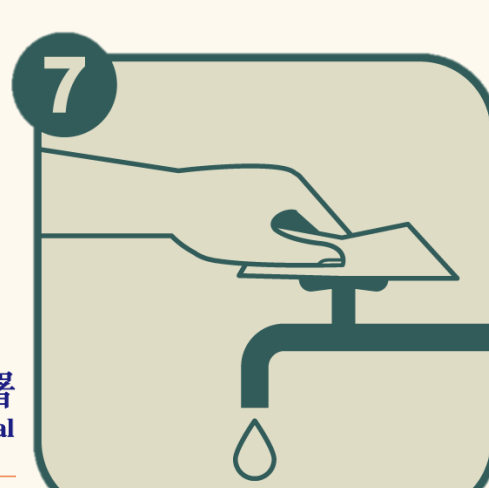
Rinse thoroughly

- ⑥ 以抹手紙抹乾或風乾雙手，避免共用抹手巾

Dry with a paper towel and avoid sharing a hand towel

- ⑦ 如果水龍頭不是自動或腳踏操作，使用抹手紙關上

Use a paper towel to turn off the tap if it is not automatic or foot operated





保持清潔 (3) - 手套使用

Clean (3) - Use of gloves

- 即棄手套是有助安全處理食物的工具，尤其是當手上有傷口或處理即食食物
Disposable gloves help us handle food safely, especially when our hands have wounds or when handling RTE food

① 即棄手套不能代替洗手，**戴上手套前、脫下手套後及更換手套時**要洗手

Wearing disposable gloves cannot replace hand washing. Wash **thoroughly before putting on, after removing and when changing gloves**

② 使用過的手套要棄掉，不可重用

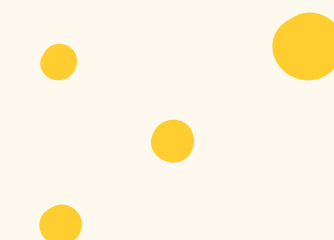
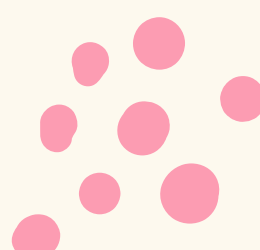
Discard gloves after use and do not reuse them

適時更換手套，包括：

Change gloves at appropriate times:

- 在處理生和熟的食物之間
Between handling raw and cooked foods
- 在完成每項工作（例如處理垃圾）後
After completing each task (e.g. handling garbage)
- 手套出現破損或弄污時
When gloves are torn or dirty

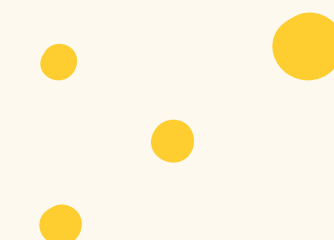
- 手套被手汗弄濕
When gloves are wet with hand sweat
- 轉換工作崗位或換班時
When switching jobs or shifts
- 使用食物鉗等工具也可避免徒手接觸食物
Use of tools such as food tongs can also avoid contact of food with bare hands





保持清潔 (4)

Clean (4)





錯誤示範




良好示範





- ❶ 長髮者應束起頭髮，如使用帽子／髮網，必須完全覆蓋頭髮以防止頭髮掉落食物中。
- ❷ 口罩要覆蓋鼻和口。
- ❸ 工作服以淺色為佳，並只限在工作區穿上。
- ❹ 每次開始值班時，工作服和圍裙均是清潔的。不要用圍裙抹手。
- ❺ 工作鞋以舒適的密頭鞋為佳，並只限在工作區穿上。
- ❻ 不要在食物配製範圍外穿着工作服或圍裙。
- ❼ 處理食物時避免穿戴首飾（例如手鐲、戒指）和手錶。
- ❽ 指甲保持短而清潔，不應塗指甲油或戴水晶甲。
- ❾ 如果手上有傷口，應戴上即棄手套，或用彩色（例如藍色）的防水膠布完全覆蓋手或前臂上的傷口。定時更換手套或膠布。





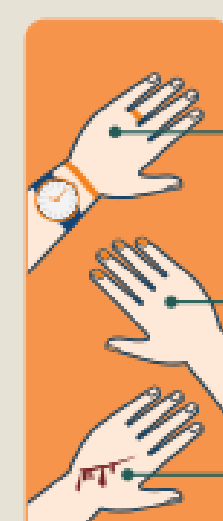

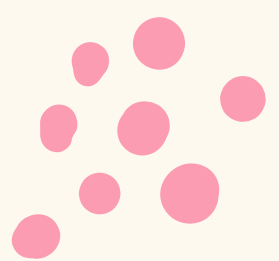
Wrong demonstration



Good demonstration

- ❶ Long hair should be tied up. If using a cap / hair net, make sure it covers the hair entirely to prevent hairs from falling into food.
- ❷ Wear a mask and make sure it covers the nose and mouth.
- ❸ Working clothes should preferably be light-coloured and should be worn solely in the work area.
- ❹ Working clothes and aprons should be clean at the beginning of a work shift. Do not wipe hands on an apron.
- ❺ Comfortable closed toe shoes should be worn exclusively in the work area.
- ❻ Do not wear working clothes or aprons outside the food preparation area.
- ❼ Avoid wearing jewellery (e.g. bracelet, rings) and watches while handling food.
- ❽ Keep fingernails short and clean. Do not wear nail polish or acrylic nails.
- ❾ Wear disposable gloves if there are wounds or cuts on hands, or cover all wounds or cuts on hands or forearms completely with bright-coloured (e.g. blue) waterproof plasters. Change both gloves and plasters regularly.

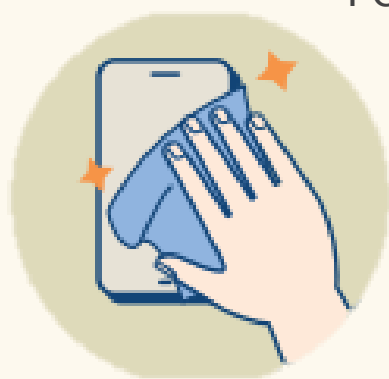






保持清潔 (5) - 手提電話

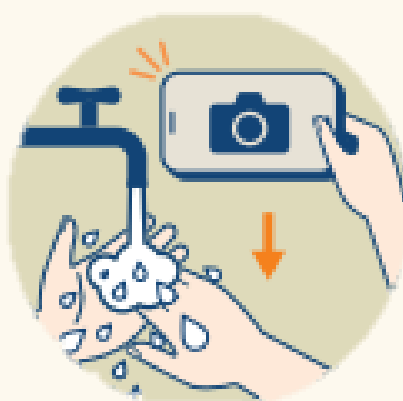
Clean (5) - Mobile phones

- 越來越多食肆提供手提電話點餐服務，或透過自助點餐機為顧客下單
The use of mobile phones or self-service catering machines to take customer orders is becoming more popular amongst restaurants
- 電話上的細菌有可能傳播到食物處理人員雙手，然後再傳播至食物中，造成交叉污染
Phone bacteria can be transferred to food via our hands, causing cross-contamination and becoming a food safety risk for consumers
- 食物處理人員須留意下列各項建議：
Food handlers should be aware of the following advice:

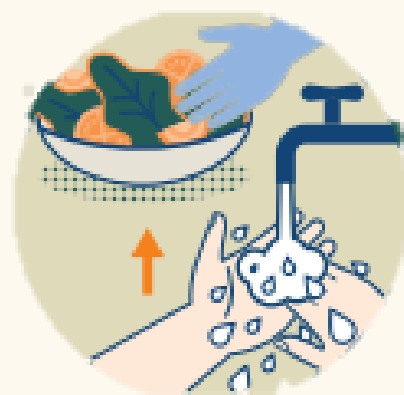


消毒屏幕

Disinfect mobile device



觸摸顧客手機後要洗手
Wash hands after touching
customers' mobile



配製食物前如曾觸摸手
機，要洗手
Wash hands after
touching mobile
before preparing food.



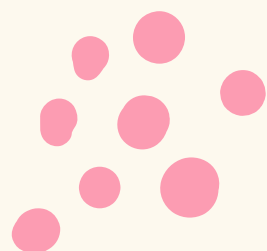
切勿把手機放在食物檯上
Never leave mobile on
food preparation table.



配製食物時切勿使用手機
Never use mobile when
preparing food.



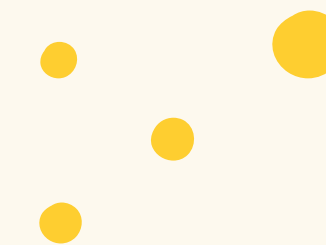
如廁時切勿使用機
Never use mobile when
in the toilet





保持清潔 (6)

Clean (6)



- **清潔**：指使用**溫水配合清潔劑**，擦拭或沖洗去除表面可見的污垢、油脂和碎屑

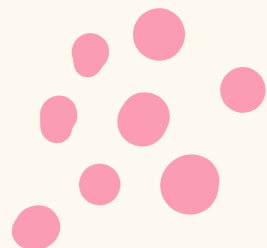
Clean: Wipe or rinse away visible dirt, grease and debris from surfaces **using warm water and detergents**

- **消毒**：指用**沸水或食品級別的消毒劑**，覆蓋需消毒表面**一段時間**

Sanitisation: Use **boiling water or food-grade disinfectants** on surfaces that require disinfection **for a period of time**

養成「**邊做邊整理清潔**」的習慣，會減低食物受到污染的機會，應訂立時間表，列出須定進行清潔的項目

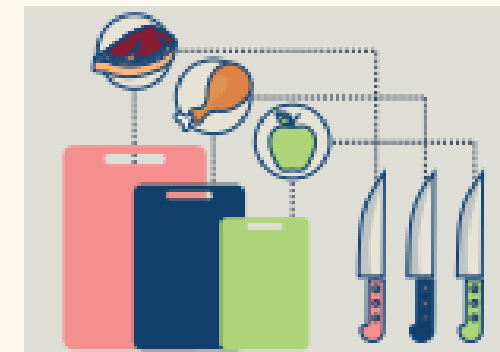
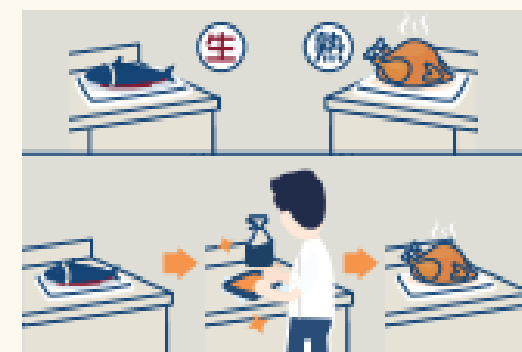
Adopting the “**Clear and clean as you go**” approach can effectively reduce the chance of food contamination and make cleaning easier. Food premises should have a schedule for items that require regular cleaning





生熟分開 - 防止交叉污染

Separate – prevent cross-contamination



- 交叉污染發生是食物中毒最常見的原因之一，生食接觸到熟食或即食食物、用具與食物接觸；用相同的工具處理生食和熟食或即食食物；雙手處理生食後沒有徹底清洗；這都可導致交叉污染

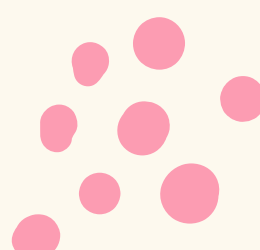
Cross-contamination is one of the most common causes of food poisoning. It occurs when raw food comes in contact with cooked or RTE food, and when using the same equipment for raw and cooked or RTE food. Hands can also spread germs if not properly washed after handling raw food

- 使用**獨立的食物預備區**來分別處理生食、熟食、即食食物及高風險食物，每次使用後須徹底消毒

Use **separate food preparation areas** for handling raw, cooked, RTE and high-risk foods. Disinfect the area thoroughly between each use.

- 使用**指定的器具** (包括砧板、刀、抹布等)處理生食 (例如生肉)、熟食(例如白切雞)或即食食物(例如水果)，可以不同顏色標籤作識別

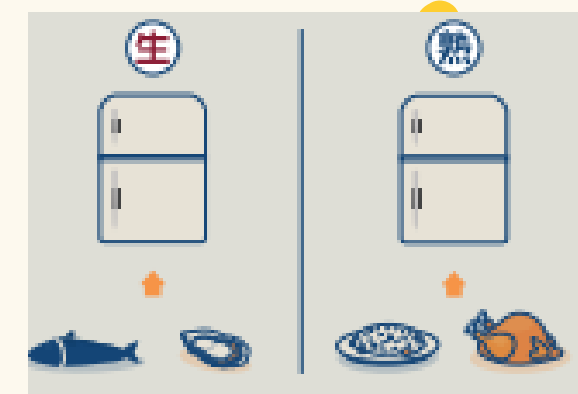
Use **designated utensils** (e.g. cutting boards, knives and wiping cloths) to handle raw foods (e.g. raw meat) and cooked foods (e.g. poached chicken) or RTE foods (e.g. fruits). Colour coding can be applied to utensils for different types of food





生熟分開 (2) - 防止交叉污染

Separate (2) – prevent cross-contamination

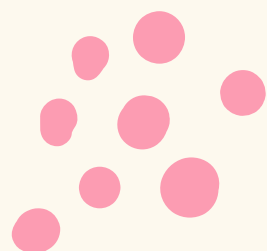


- 用兩個雪櫃分開貯存生的食物和熟食或即食食物
Use two separate refrigerators for storing raw foods, and cooked or RTE foods
- 如生食和熟食或即食食物需貯存在同一雪櫃內，必須以有蓋的容器貯存，並把熟食和即食食物放在雪櫃上層，生的食物放在下層

Store all the food in **lidded containers** if raw foods, and cooked or RTE foods must be stored in the same refrigerator. **Cooked or RTE foods** should be placed on the **upper shelf** of the refrigerator, and raw foods in **the lower shelf**



- 不可在地板上、座廁或排水渠旁等配製食物或飲料
Do not prepare food and drinks on the floor, near the toilet or drains
- 粉料及其他乾製食物應保持乾爽，避免以濕的器具及木匙接觸，以防霉菌的傳入和污染
Store powdery ingredients, spices and other dried foods in dry areas, and avoid its contact with wet or wooden utensils to prevent mould formation and subsequent contamination
- 清潔劑等化學品不應存放在食物處理區
Keep detergents and other chemicals away from food preparation areas



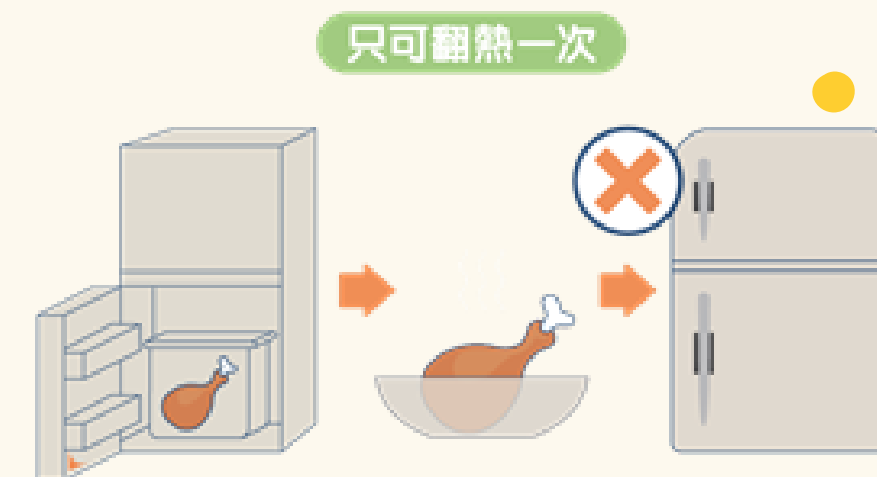


徹底煮熟

Cook thoroughly

烹煮及翻熱：

Cooking and Reheating:



烹煮及翻熱是一個很重要的環節，食物如不徹底煮熟以殺死致病菌，很容易導致食源性疾病

Cooking and reheating are critical steps in keeping food safe. Inadequate cooking and reheating can easily result in foodborne illnesses

- 烹煮或翻熱食物時，食物中心溫度應達至75°C或以上，維持至少30秒
When cooking or reheating food, the core temperature of the food should reach at least 75°C for 30 seconds
- 可以使用其他溫度 / 時間組合，例如：達至70°C或以上，維持至少2分鐘；或達至65°C或以上，維持至少10分鐘
You can also cook food safely with other equivalent temperature / time combinations, such as cooking at 70°C for 2 minutes or 65°C for 10 minutes
- 食物只可翻熱一次，不應再次冷存，防止細菌因長時間在危險溫度而急速增長
Reheat the food only once, and do not refrigerate it again as prolonged exposure to dangerous temperatures can lead to bacterial growth.

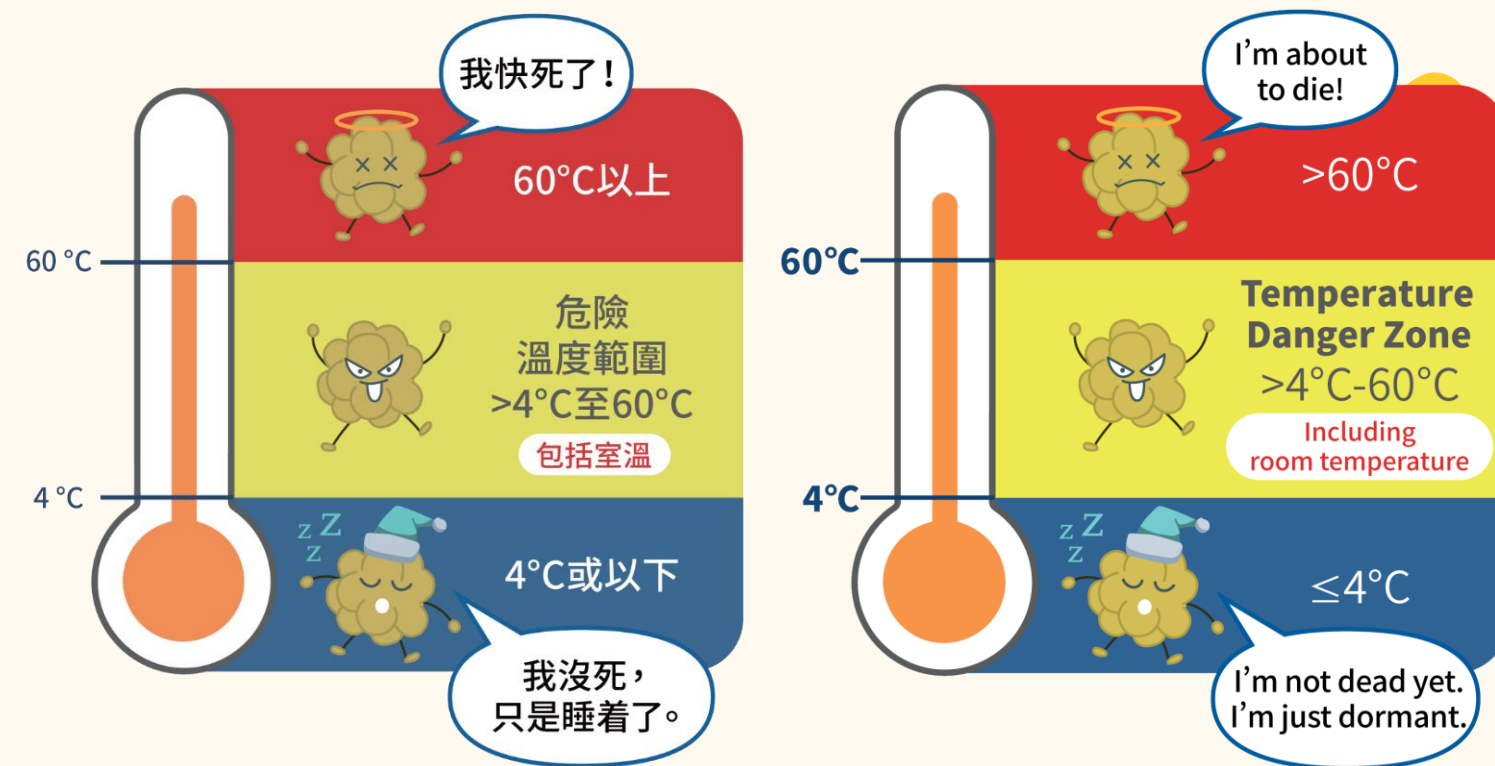


安全溫度

Safe temperature

危險溫度範圍：

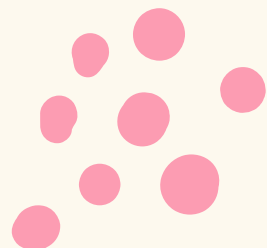
Temperature Danger Zone:



食物如存放在 4 至 60°C 的範圍內，容易滋生各種細菌

Storing food at a temperature between 4°C and 60°C allows various types of bacteria to grow rapidly

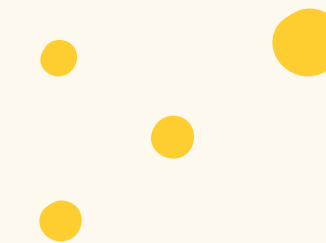
- 烹製食物各階段中須妥善控制溫度，是預防細菌性食物中毒的有效方法
Proper temperature control at all stages of food preparation is an effective way to prevent bacterial food poisoning
- 低溫貯存只可抑制細菌生長，不能殺菌，而高溫處理則可有效消滅細菌
While chilling will inhibit bacterial growth (but cannot kill them), high temperature treatment can destroy bacteria effectively





安全溫度 (2)

Safe temperature (2)



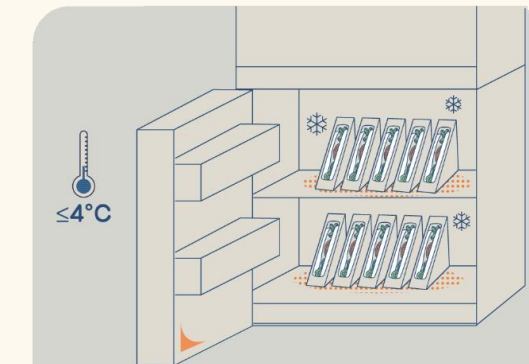
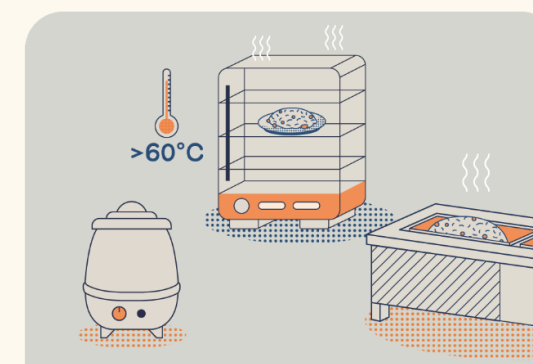
熱存及冷存

Hot and Cold Holding

大量預先烹製的食物，尤其是肉類、家禽及肉汁等，如非立即食用，就應2小時內進行熱存或冷存

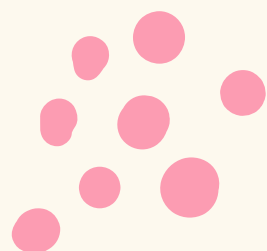
Store large amounts of precooked food, especially meat, poultry and gravy (e.g. stewed beef or curry) properly in hot or cold-holding devices within 2 hours of preparation if not for immediate serving

- **熱存要夠熱**：預先煮好的熱食應熱存在60°C以上
Keep hot food hot: Hot food must be kept at temperatures above 60°C
- **冷存要夠冷**：預先處理好的冷食應冷存在4°C或以下
Keep cold food cold: Cold food must be kept at 4°C or below



所有熱食必須徹底煮熟至沸騰才開始熱存保溫

Food must be cooked thoroughly to steaming hot before hot holding begins





安全溫度 (3)

Safe temperature (3)

2小時 / 4小時原則：保存、食用或棄掉？

2-hour / 4-hour rule: to keep, to eat or to throw away?

- 是確保食物安全的好方法

It is an effective way to ensure food safety

- 適用於已從雪櫃取出或已經煮熟，並放在室溫下的食物

Applicable to food out of refrigeration or placed at ambient temperatures after cooking

- 這項原則建基於微生物可在「危險溫度範圍」內迅速生長的理論，已獲科學實證支持

The rule has been scientifically proven and is based on how fast microorganisms grow in foods kept at the Temperature Danger Zone

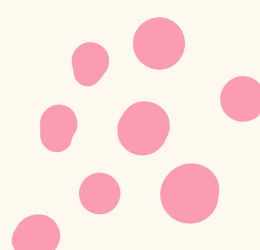
下表概述2小時/4小時原則：✓為可以而✗為不可以：

The table below outlines the 2-hour / 4-hour rule. ✓ means "yes" and ✗ means "no".

	食物置於4°C至60°C (例如室溫)	放入雪櫃備用	即時食用	Food held at 4°C-60°C for	For refrigeration to use later	For immediate use and consumption
<2小時		✓	✓	<2 hours		✓
2 - 4小時		✗	✓	2 - 4 hours	✗	✓
>4小時		✗	✗	>4 hours	✗	✗

置於4°C至60°C之間超過4小時的高風險食物必須棄掉。

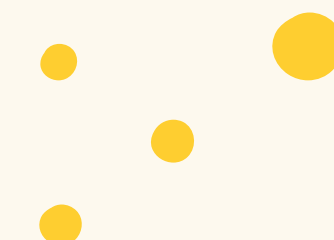
High-risk foods held at temperatures between 4°C and 60°C for 4 hours or more **must be thrown away**.





良好衛生規範

Good Hygiene Practices



- 中心為一般食物處理人員製作了一份良好衛生規範圖解指南，其中載有良好衛生規範和食物安全五要點如何解決食物鏈中的抗微生物藥物耐藥性的信息。專題網站已推出：

The CFS has produced an illustrated guide on Good Hygiene Practices (GHPs) for food handlers in general, which contains messages on how GHPs and Five Keys to Food Safety can address AMR in the food chain. A thematic website has been launched:

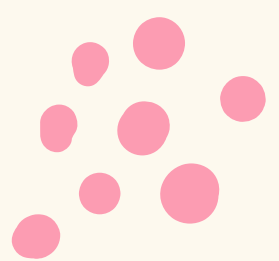
<http://cfs.gov.hk/safekitchen>

<https://www.cfs.gov.hk/amr>

- 協助食物業界有效確保食物安全，保障消費者健康
To help food handlers ensure food safety and protect consumers' health



《食安Guide：給食物處理人員的食安圖解指南》
"Food Safety Guide: An Illustrated Guide to Good Hygiene Practices for Food Handlers"





在餐牌上就高風險食物向消費者作出食用忠告

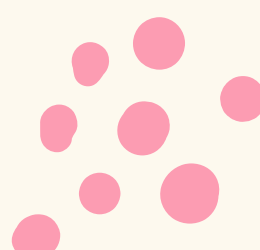
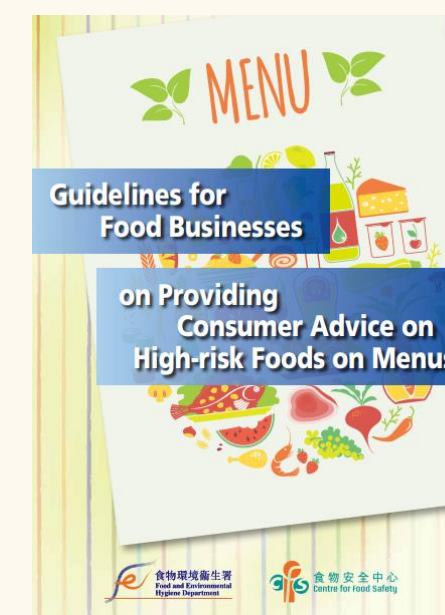
Providing Consumer Advice on Menus of High-Risk Foods

- 為鼓勵和協助食物業者告知消費者進食生的或未煮熟的食物及即食食物的配料的風險增加，中心發出《在餐牌上就高風險食物向消費者作出食用忠告的業界指引》

To encourage and facilitate food businesses in informing consumers of the increased risk of consuming raw or undercooked foods and ingredients RTE foods, the CFS has issued the “Guidelines for Food Businesses on Providing Consumer Advisory on High-risk Foods on Menus”

- 該指引通過2019年貿易食品安全研討會、貿易諮詢論壇和與餐飲協會的指定會議發布。該指引以電子方式製作，而印刷本於2020年初郵寄給食物業，尤其是食物業處所

The Guidelines were promulgated through the Food Safety Seminar for Trade 2019, Trade Consultation Forum and a designated meeting with catering associations. The Guidelines are made electronically, while hard copies were distributed to the food trade especially food premises by post in early 2020.





食用忠告

Consumer Advice

食肆有責任提供準確及充分的食物資料，以助消費者作出明智的選擇

Restaurants are obliged to provide accurate and sufficient information to help consumers make informed food choices

可透過小冊子、海報、餐牌、座檯卡或其他書面方式，向消費者作出食用忠告

Food advice can be given to consumers through brochures, posters, menu cards, table cards or other written means

此舉亦可提升食肆的盡責形象

This can promote the restaurant's image as a responsible food trader



餐牌



門口貼紙



Food menu



Sticker displayed at the entrance



付款處提示



餐桌立牌



Signage displayed at the cashier



Table tent

* 食用生或未煮熟的食物，可增加患上**食源性疾病**的風險，尤其是孕婦、嬰幼兒、長者和免疫力弱人士。

* Consuming raw or undercooked foods may increase **the risk of foodborne illness**, especially for pregnant women, infants, young children, the elderly and people with weakened immunity.

Thank you
謝謝

