

Risks of raw and undercooked seafood

生或未煮熟海產的風險



業界諮詢論壇

Trade Consultation Forum

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Food and Environmental
Hygiene Department



食物安全中心
Centre for Food Safety

★ 常見的生或未煮熟海產的例子

Examples of raw and undercooked seafood



生蠔
Raw Oyster



刺身及壽司
Sashimi and Sushi

★生或未煮熟海產中的病原體

Pathogens in Raw and Undercooked Seafood

細菌 (如副溶血性弧菌)

病毒 (如諾如病毒及甲型肝炎病毒)

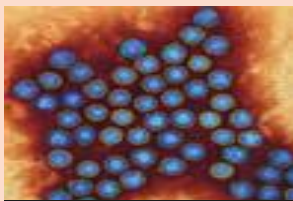
寄生蟲

容易受污染的海產:

- 魚類
- 軟體動物(例如蠔、八爪魚和墨魚)
- 甲殼類動物(例如蟹、龍蝦和蝦)



副溶血性弧菌
Vibrio
parahaemolyticus



諾如病毒
Norovirus

Bacteria (e.g. *Vibrio parahaemolyticus*)

Virus (e.g. Norovirus and Hepatitis A virus)

Parasites

Commonly contaminated seafood:

- Fish
- Molluscs (e.g. oysters, octopus and squid)
- Crustaceans (e.g. crab, lobsters and shrimps)



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★生蠔帶有病源體的食安風險

Risks of Raw Oysters in containing pathogens

- 生蠔以過濾周遭的水來進食
- 一些有害微生物在過濾的過程中有機會積聚其體內組織，包括病毒和細菌
- **Oysters** feed by filtering the surrounding waters and may concentrate harmful microorganisms, including viruses and bacteria
- The viruses and bacteria accumulated in raw oysters may not result in deterioration



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★生蠔帶有病源體的食安風險

Risks of Raw Oysters in containing pathogens

- 積聚的病毒和細菌未必使生蠔腐壞，單憑生蠔肉質未能分辨有否受到污染
- 進食生或未煮熟食物包括生蠔都有食物安全風險，因生蠔在製作過程中未經過烹煮
- Solely checking the raw oyster quality cannot judge whether they are contaminated or not
- **Consuming raw and undercooked food including raw oysters has inherent risks** because no heat treatment on raw oysters is conducted during food preparation



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★預先去殼生蠔的既有風險

Specific Risks of Pre-shucked Raw Oysters

預先去殼生蠔存在的微生物風險較高，
不建議生吃

- 去殼生蠔在製作、包裝以至售賣過程中可能涉及各種不同的人手或機械操作→增加了因加工步驟而被交叉感染的風險
- 去殼生蠔在製作過程中會被殺死→因此較容易腐壞

Pre-shucked raw oysters has a high microbiological risk, thus are not recommended for raw consumption

- Pre-shucked raw oysters **prone to be cross-contaminated during the preparation, packaging and selling processes** which involve various manual and machinery works
- Pre-shucked raw oysters are **killed** upon the shell removal step which is more susceptible to deterioration



★ 海產中的寄生蟲

Parasites in Seafood

- 人類有可能透過食用生或未煮熟海產而**感染寄生蟲**
- 海產中有可能發現寄生蟲包括**蛔蟲**、**絲蟲**和**吸蟲**
- 寄生在海魚、甲殼類(例如蝦)和頭足類(例如魷魚)的海產體內的**異尖科線蟲**是一種經進食魚類而感染的蛔蟲



- Human can be **infected by parasites** upon consuming raw and undercooked seafood
- Parasites such as **roundworms, tapeworms and flukes** can be found in seafood
- **Anisakidae** are one of the important fish-transmitted foodborne roundworms found in marine fish, crustaceans (e.g. shrimp) and cephalopods (e.g. squid)



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良好的水產養殖方法可降低寄生蟲感染風險

★ Good Aquaculture Practice (GAP) Can Reduce the Risk of Parasite Infection

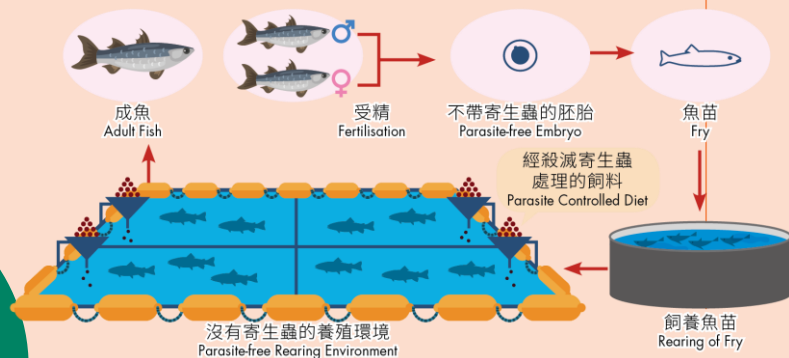


歐盟已認可:

- 在沒有寄生蟲環境中培植胚胎飼養；及
- 以經殺滅寄生蟲處理（例如加熱處理）的飼料餵飼
→ 可降低感染寄生蟲的風險

The Europe Union accepted that:

- Farmed fish cultured from embryo and reared in a parasite-free environment; and
- Fed with parasite-controlled diet (e.g. heat-treated feed)
→ have a lower risk of parasite infection



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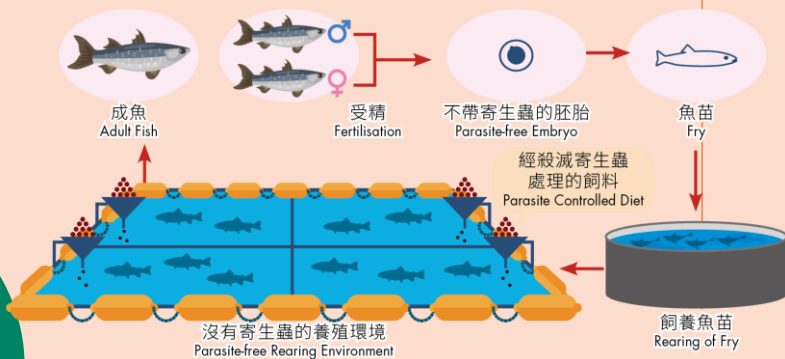
良好的水產養殖方法可降低寄生蟲感染風險

★ Good Aquaculture Practice (GAP) Can Reduce the Risk of Parasite Infection



- 但是，良好的水產養殖方法並不能完全確保養殖魚類的產品沒有寄生蟲
- 仍須定期進行寄生蟲檢測

- Nevertheless, GAP **does not guarantee** all the fishery products are free from parasites
- Farmed fish must still be inspected regularly for presence of parasites



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★ 透過冷藏殺死魚內的寄生蟲

Killing Parasites in Fish by Freezing

- 歐盟與美國食品及藥物管理局規定，擬供生吃的魚類產品必須經過冷藏處理，以降低寄生蟲感染的風險
- The EU and the USFDA require fishery products intended to be consumed raw to go through freezing treatment to reduce the risk of parasite infection



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★ 透過冷藏殺死魚內的寄生蟲

Killing Parasites in Fish by Freezing

- 供生吃的魚類在出售前須冷藏於攝氏零下20度或以下7天，或攝氏零下35度約20小時

若養殖環境缺乏監控，或產品未有適當處理，都可能帶有寄生蟲

- e.g. fish intended for raw consumption should be frozen at -20°C or below for seven days or at -35°C for about 20 hours before sale

If the fish is not raised in controlled environment or the product is not treated properly, it may carry parasites

★高危人士應避免進食生或未煮熟海產

Susceptible populations should avoid consuming Raw and Undercooked Seafood

- 高危人士包括孕婦、嬰幼兒、長者及免疫力弱人士
- 無論感染了哪種食源性病原體，高危人士都較大機會出現嚴重症狀，甚至會有生命危險



- Susceptible Population includes pregnant women, infants and young children, elderly and individuals with weakened immunity
- No matter what kind of foodborne pathogen it is, susceptible population will have higher chance of having severe symptoms which can **result in life threatening consequences**



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★給業界的建議

Advice to the trade

- 確保海產購自可靠的供應商；貝類海產(包括蠔)須附有原產地有關當局簽發的衛生證書
 - 售賣生吃海鮮須得到食物環境衛生署批准
 - 切勿使用只供熟食的海產製作生吃食物
 - 徹底煮熟只供熟食的海產
- Ensure seafood are obtained from reliable sources; shellfish, including oysters should have **health certificates** issued by relevant authority of the exporting countries
 - Selling raw seafood **requires endorsement from the Food and Environmental Hygiene Department**
 - Do not prepare raw food with seafood which is intended for consumption only after cooking
 - **Cook thoroughly** for seafood intended for consumption after cooking



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謝謝
Thank you

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