



# Food Safety Seminar

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## Thai Restaurants





# Contents :

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Part I :

Food Hazards and Risks in Thai Restaurants

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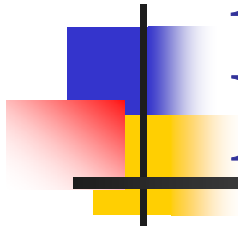
Tips on Effective Control on Food Risks in Thai  
Restaurants

Part I :

Food Hazards and Risks in Thai

Restaurants

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# Popular Thai dishes

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- Thai pomelo salad
  - Shrimp sashimi
  - Spicy and sour chicken soup with coconut milk
  - Thai pork and lemongrass stir-fry
  - Fried rice in pineapple boat
  - Thai coconut tapioca pudding
- [...the list is not exhaustive...]

# High risk foods (sashimi)



What do these dishes have in common?

## Common problems of high risk foods

- the preparation requires **a lot of handling**
  - susceptible to contamination
- absence of cooking steps
  - **absence of steps** to kill pathogens
- frozen/chilled only
  - **slow** the growth of bacteria

# Food Hazards

## Hazards

A hazard is anything in food that may cause harm to consumers.



**Chemical**

**Biological**



**Physical**

# Physical Hazard

- ◆ Extraneous objects
  - Glass fragments
  - Metal fragments
  - Stones
  - Pieces of product packaging
  - Hair
  - Buttons





# Chemical Hazard

- Naturally occurring toxins in microorganisms or marine fish (ciguatoxin)
- Environmental contaminant (mercury in wastewater)
- Pesticide residue in vegetables
- Chemicals formed during certain food processing and cooking conditions (acrylamide in fried food)

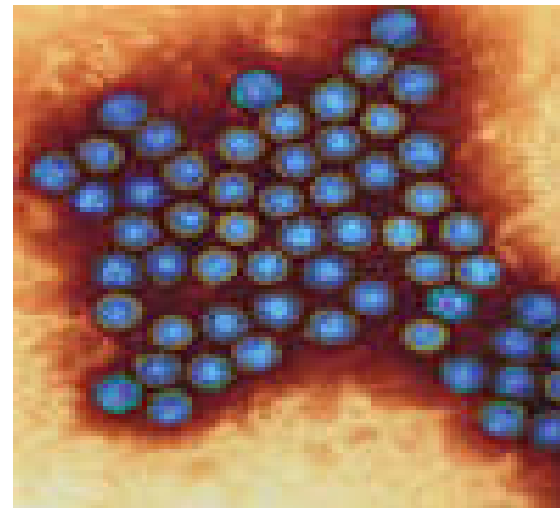
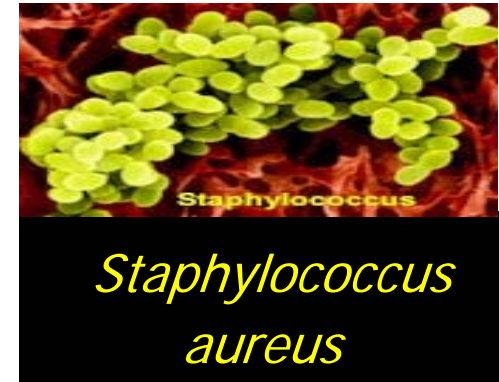
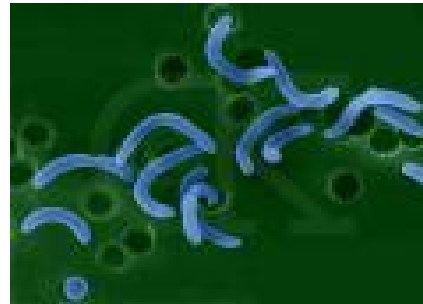


Leopard Coral Grouper



# Biological Hazard

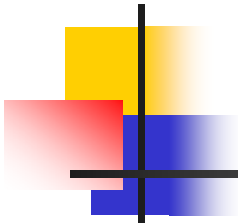
- Bacteria
- Virus





What is food poisoning?

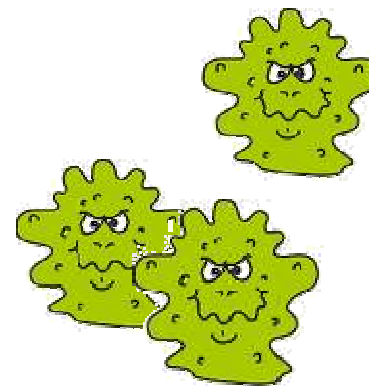
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# Food poisoning = foodborne disease

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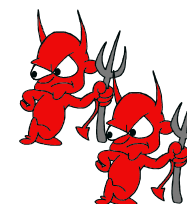
- Any illness resulting from the consumption of contaminated food
- Causes
  - pathogenic microorganisms and/or
  - toxic chemicals



# Common symptoms of foodborne disease

- occur 24 to 72 hours after eating
  - abdominal pain
  - vomiting
  - diarrhoea
- most are mild
- some may severely affect infants, pregnant women, elderly and the sick

# Causes of foodborne diseases



## Microbiological contamination of food

Use of food from an unsafe source

Consumption of raw shrimp

infected food handlers

### **Cross-contamination**

- raw food contaminate cooked food
- food handlers contaminate food
- utensils contaminate food

# Causes of foodborne diseases

## Survival or growth of pathogens in food



Inadequate thawing of frozen meat

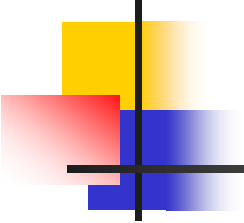
Inadequate cooking

Preparation of food too far in advance  
Preparation of food too much in amount

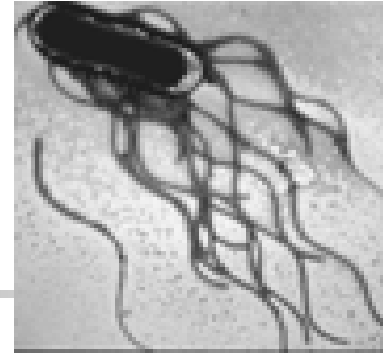
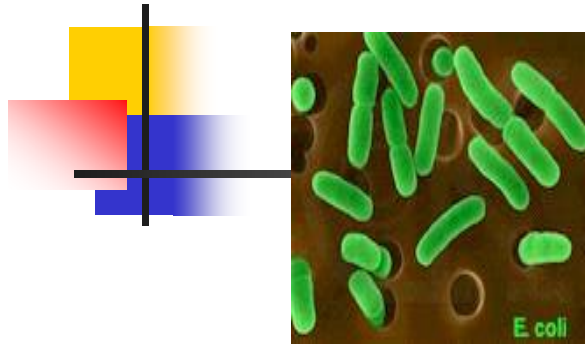
Prolonged holding of food in the temperature danger zone\*

Prolonged cooling of food

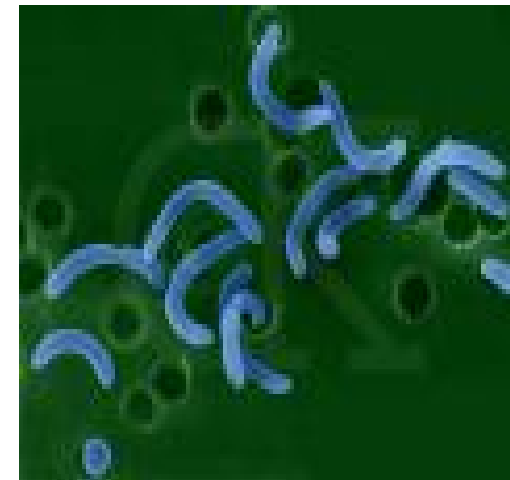
Improper reheating

- 
- 
- There have been 1099 food poisoning cases in the past three years affecting 4176 persons, 74 of these cases involved Thai restaurants (494 persons affected in total)





# Most Common Pathogens





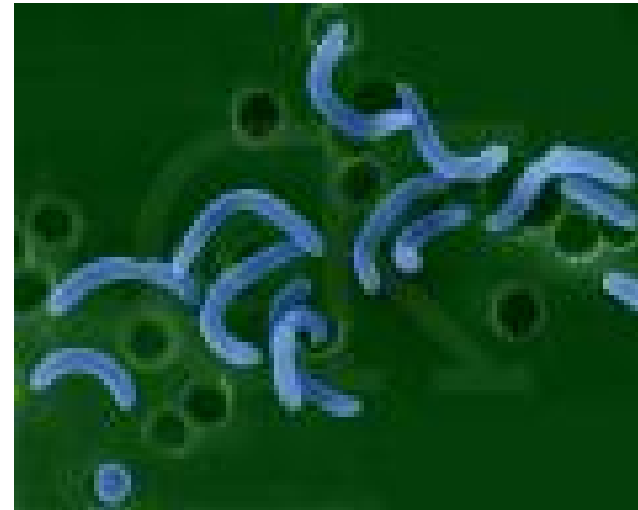
# Common Pathogens

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- *Vibrio parahaemolyticus*
- *Staphylococcus aureus*
- *Norovirus*

# 1. *Vibrio parahaemolyticus*

- Naturally found in **marine environment**
- **Seafood** (fish, shellfish (raw oyster), shrimps, crabs)



# 1. *Vibrio parahaemolyticus*

High risk foods



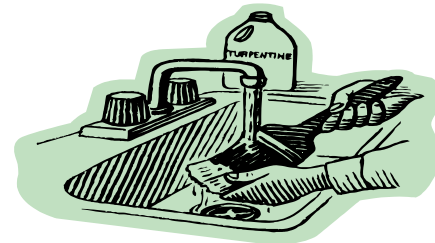
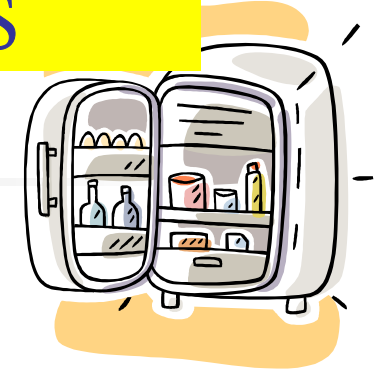
# 1. *Vibrio parahaemolyticus*

- Mode of Transmission
  - Cross contamination
    - Raw food and cooked food
    - Utensils and containers
    - refrigerator
    - hands
  - infected persons (fecal-oral route)



# 1. *Vibrio parahaemolyticus*

- Prevent contamination
  - Cook seafood thoroughly (if meant to be cooked)
  - Store seafood (including raw shrimp, salmon fish) at 4°C or below



# 1. *Vibrio parahaemolyticus*

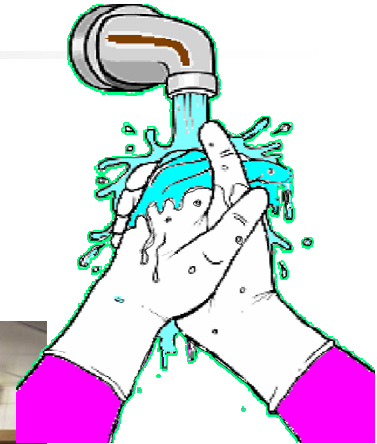
Separate raw food from cooked food

- use separate utensils for raw food and cooked food
- use designated utensils for handling of sashimi and salad, etc.



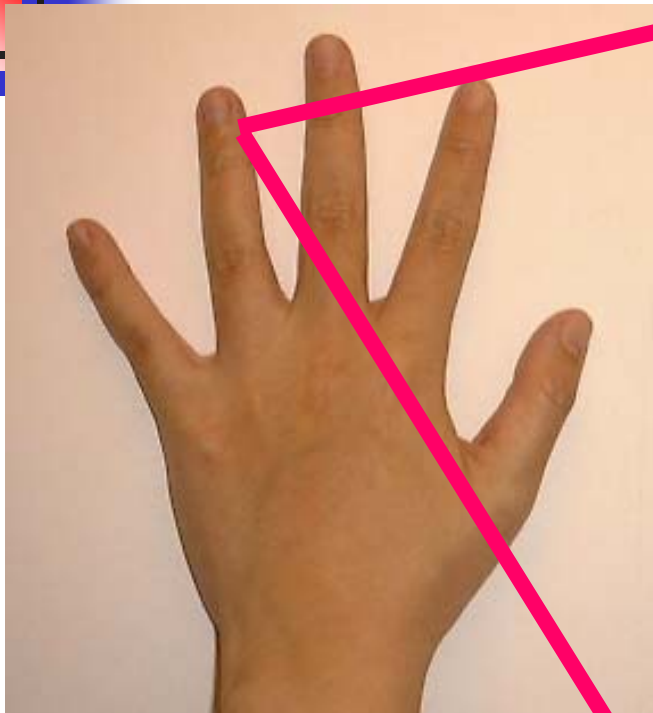
# 1. *Vibrio parahaemolyticus*

- store raw food and cooked food separately
- practice good **personal hygiene**





## 2. Staphylococcus aureus



*Staphylococcus aureus*

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## 2. Staphylococcus aureus

- commonly found on human skin and in mucous membranes
- about one third of the healthy population carries this bacterium in their nasal passage or skin without showing any symptoms.

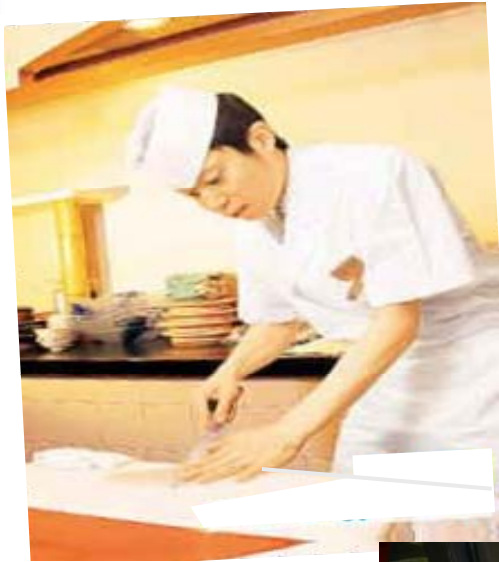
## 2. Staphylococcus aureus



*Staphylococcus aureus* is commonly found in kitchen surfaces, including:

- 👉 **dish cloths**
- 👉 **food handlers' fingers, nasal passage**
- 👉 **fridge doors**
- 👉 **hand towels**
- 👉 **taps**

## 2. Staphylococcus aureus



**High risk foods**



## 2. Staphylococcus aureus

### Causes of food poisoning

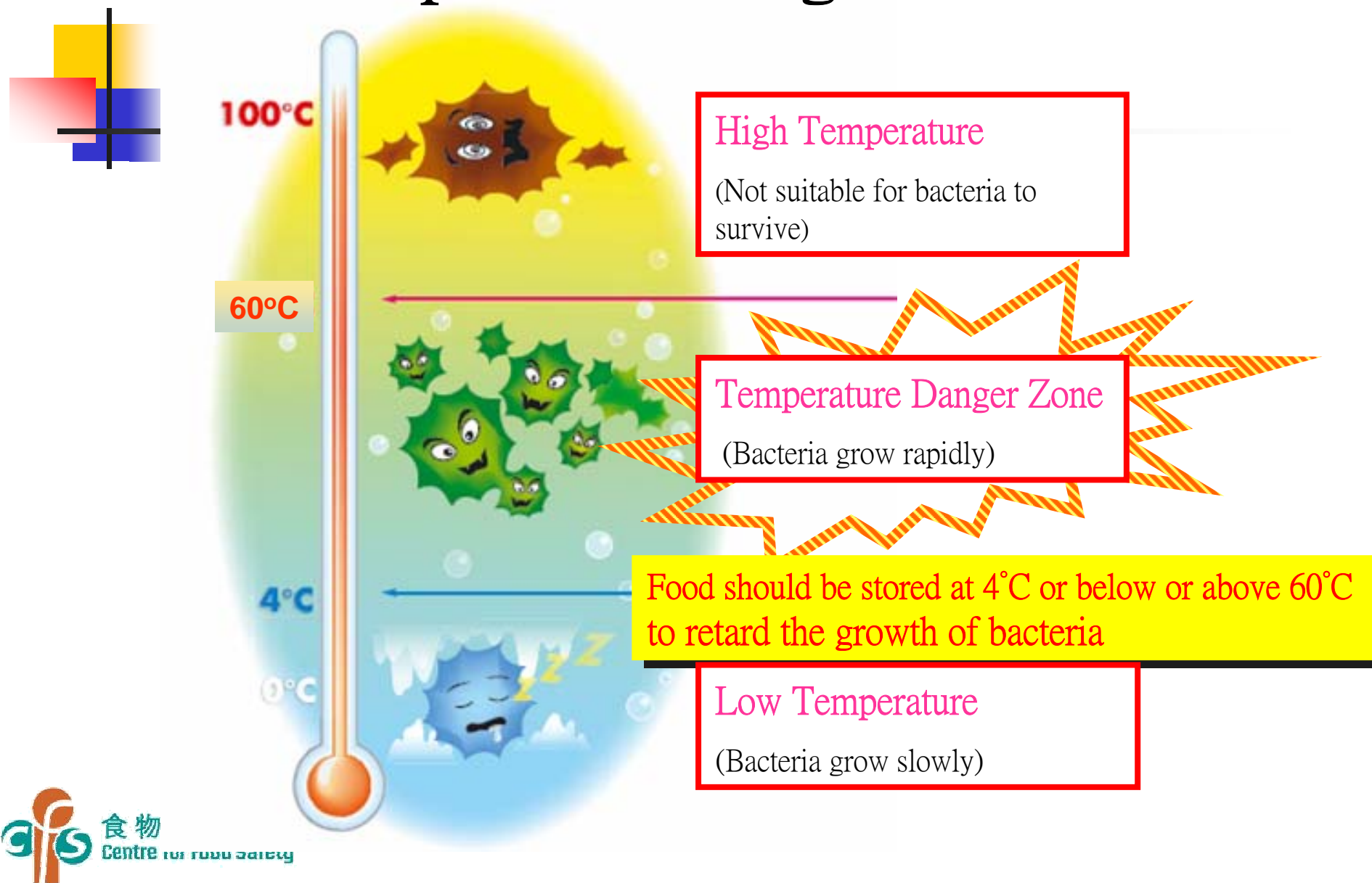
1. Foods that need to be handled a lot

2. Food held in temperature danger zone after cooking for a while

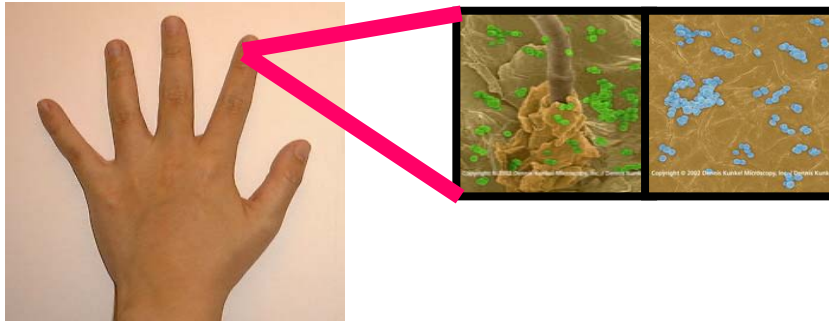
Temperature Danger Zone ?



# Temperature Danger Zone



## 2. Staphylococcus aureus

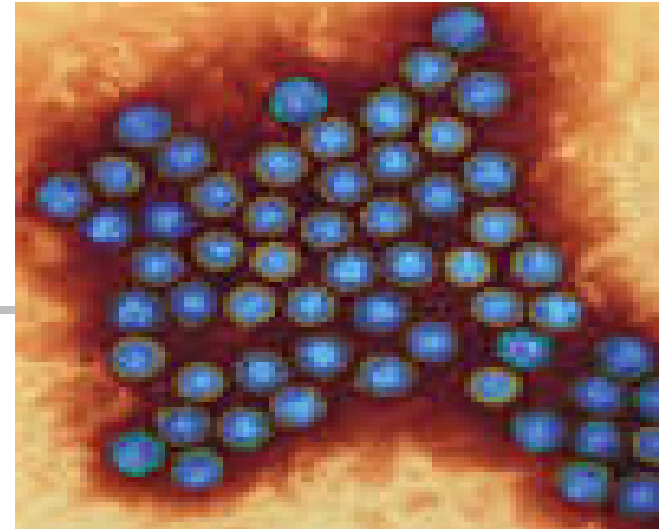
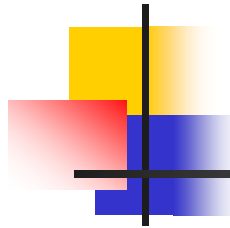


1. Avoid touching food with bare hands

2. Store food at a low temperature

3. *Avoid display of food in room temperature  
over 2 hours*



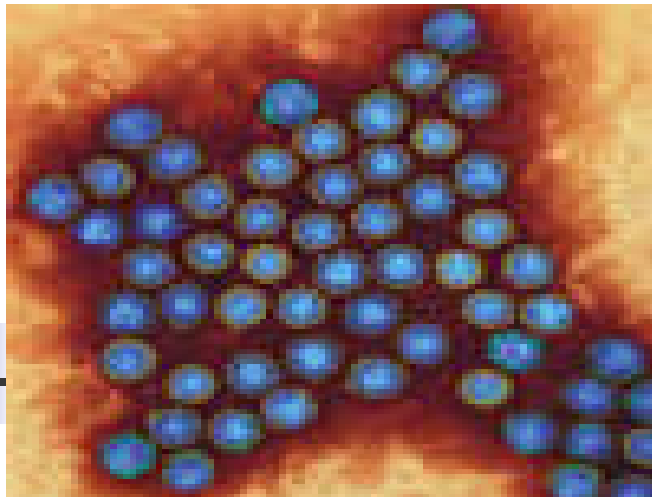
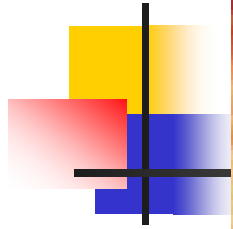


### 3. Norovirus

## Sources of contamination

- Humans are the only known host for norovirus
- Norovirus can survive, though not multiply, outside a human body





### 3. Norovirus



#### Mode of Transmission

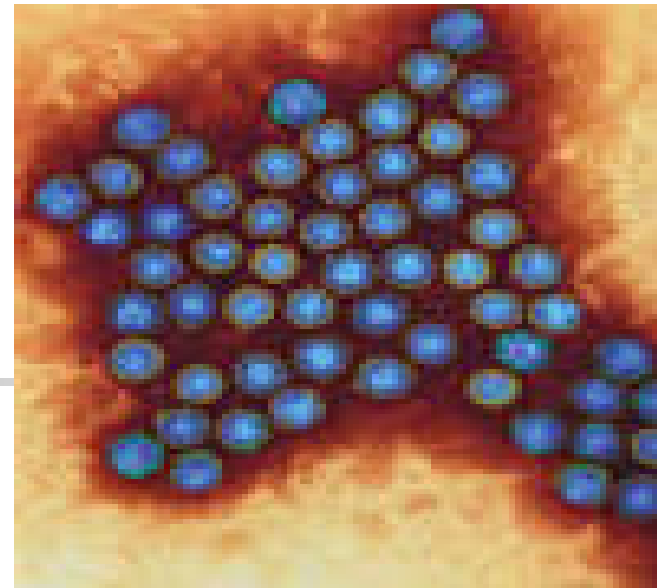
- by fecal-oral route
  - via contaminated food, water and shellfish

# Key point

- humans can contaminate food **directly** and **indirectly** (infected persons contaminate sea water, irrigation water and drinking water)

## Implications

- Aquatic products, in particular **shellfish**, should be cooked thoroughly before consumption
- Obtain food from reputable food premises



### 3. Norovirus

# Conclusions: Part I

## Thai Restaurant and food

### Potential hazards and Risk of Food Poisoning



**Biological**

**Chemical**



**Physical**

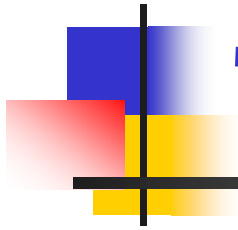


Part II:

Thai Restaurants

Tips on Effective Control on Food Risks

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# Risk Analysis for Thai Dishes

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- Thai pomelo salad
- Shrimp sashimi
- Spicy and sour chicken soup with coconut milk
- Thai pork and lemongrass stir-fry
- Fried rice in pineapple boat
- Thai coconut pudding

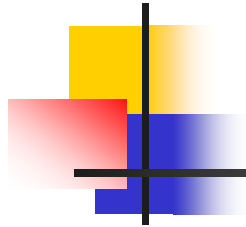
# Hazard Analysis and Critical Control Point System (HACCP)

- What is HACCP?
- Apply HACCP in Thai Restaurants
  - Purchase (including receiving)
  - Storage
  - Preparation
  - Cold Storage
  - Serving (display)

# HACCP System



- Principle 1 Analyse **hazards**
- Principle 2 Determine **critical control points**
- Principle 3 Establish **limits** for critical control points
- Principle 4 Establish **monitoring procedures** for critical control points
- Principle 5 Establish **corrective actions**
- Principle 6 Establish **verification procedures**
- Principle 7 Establish a **record system**



\*Choose → \*Receiving → \*Storage (frozen/chilled)  
→ \*Preparation → \*Cold Storage → \*Display

\*Critical Control Points





## Apply HACCP in daily operation

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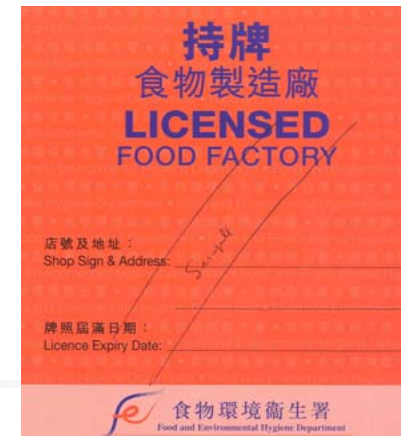
- **Purchase (including receiving)**
- **Storage**
- **Preparation**
- **Cold Storage**
- **Serving (display)**

# Purchase -

Choose

Receiving

Storage



Obtain food and food ingredients from approved and reliable sources

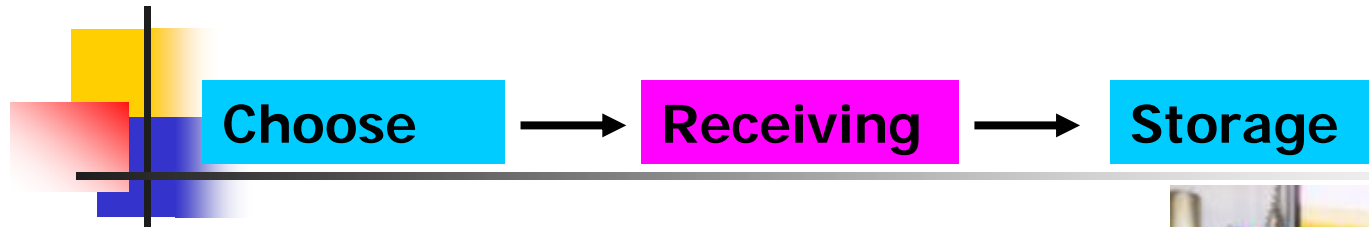
- Ensure that the suppliers have obtained relevant and **valid licences** from the **Food and Environmental Hygiene Department**. Please visit <http://www.fehd.gov.hk/licensing/licence-typec.html> for details
- imported raw materials should be accompanied with valid and recognised official health certificates
- keep records of acquisition and stock of raw material



Use **fresh** and **wholesome** ingredients and check the quality of the ingredient upon receipt:

- use fresh/chilled shrimp intended for making sashimi
- Food or food ingredients are stored at **safe temperature**
  - Chilled food: 4°C or below
  - Frozen food: -18°C or below





- Check if the packaging is intact
- Check the *expiry date*



# Storage -

Choose

Receiving

Storage



- Refrigerate cooked and perishable food within **2 hours**
- Check the **temperature of the refrigerator** with a thermometer and keep a record
  - **Fridge**: at **4° C** or below
  - **Freezer**: at **-18°C** or below
- Don't overstuff the refrigerator

Temperature Log

Device*: Freezer / Chiller / Hot holding apparatus / Oven /		Location / Code:	
Standard*: <-18°C / <4°C / >60°C /		Check Frequency:	
Corrective Action:		Remarks:	

Date	Time	Temperature	Comments	Corrective actions (if any)	Signature

# Storage -

Choose



Receiving



Storage

- Ideally, use **two separate refrigerators** for storing raw food and cooked food/ready-to-eat food (raw materials for the preparation of sashimi should be stored in a separate or designated part of a freezer) and bilingually labelled “**刺身專用**” ” Sashimi only”
- If raw food and cooked food/ready-to-eat food have to be stored in the same refrigerator, do the following:
  - Store food in **containers with lids**
  - Store **ready-to-eat /cooked food** on the **top shelf** of the refrigerator
  - Store **raw meat, poultry and seafood** on the **bottom shelf** of the refrigerator



# Preparation – Clean (keep yourself clean)

Choose

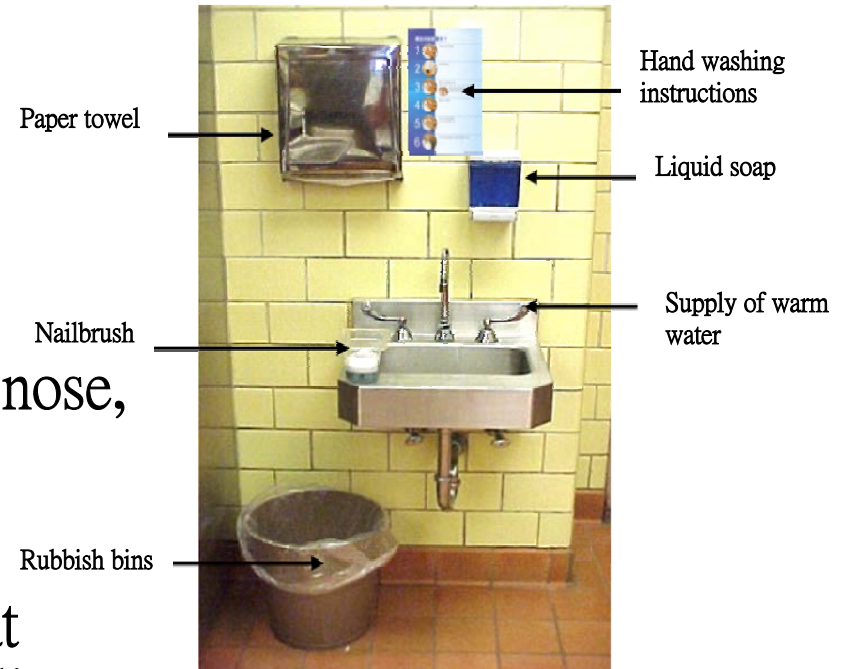
Receiving

Storage

Preparation

## Wash hands

- Before handling food
- After handling raw meat or poultry
- During food preparation
- After coughing, sneezing, blowing nose, eating or drinking
- After going to the toilet
- After engaging in any activities that may contaminate hands (e.g. handling money, carrying out cleaning duties)



# Preparation – Keep Clean (personal hygiene)

Wash your hands with **soapy water** for **20 seconds**

- wet hands under running water
- apply liquid soap
- rub hands together for at least 20 seconds
- rinse hands under running water
- dry hands with clean paper towels or air dryers





# Preparation – Keep Clean (personal hygiene)

Choose

Receiving

Storage

Preparation

- Food handlers should
  - wear **clean and light-coloured outer clothing** or protective overalls
  - wear **masks** during food handling
  - wear **disposable gloves** when handling ready-to-eat food
  - cover sores or cuts on hands by waterproof bandages or gloves



# Use Gloves

## Purpose of using gloves

- Minimise bare hand contact with food
- prevent infection of cuts by the bacteria in food

## When to use gloves

- When there is a cut on hands
  - ◆ Prevent contamination of the food by the bacteria in cut (e.g. *Staphylococcus aureus*)
  - ◆ Prevent infection of cut by the bacteria in food (e.g. *Streptococcus suis*)
- When handling ready-to-eat food (e.g. sushi, desserts, sandwiches, etc.)
  - ◆ Ready-to-eat food will not undergo further heat treatment to kill pathogens



# Use Gloves Correctly

- Use disposable gloves
- Wear gloves of appropriate size
- Wash hands thoroughly before and after wearing or changing gloves



# Use Gloves Correctly



- Change gloves frequently
  - ◆ When changing tasks or leaving the work station
  - ◆ When the gloves are soiled
  - ◆ When the gloves are torn
  - ◆ Change regularly during work (e.g. every half an hour/one hour)
- Discard gloves after use and never reuse gloves



# Preparation – Keep Clean (personal hygiene)

Choose

Receiving

Storage

Preparation

- Clean utensils and worktops with hot water and detergent after each use
- All knives used for the preparation of ready-to-eat food shall be placed under cover in the knife sterilization apparatus and immersed in sterilization solution when they are not in use
- Keep kitchen clean and away from insects, pests and other animals
  - Keep food covered or in closed containers
  - Keep rubbish bins covered and remove rubbish at least once a day
  - Use rodenticides or insecticides to kill pests but take care not to contaminate food



# Preparation

Choose



Receiving



Storage



Preparation



- Use separate utensils to handle raw food and cooked food/ready-to-eat food (such as fruit and sashimi)
- Use designated utensils (including cutting boards and knives) for handling sashimi
- Label utensils with different colours:
  - Red – Raw Food
  - Blue – Cooked food
  - Green – Ready-to-eat food
- Use one utensil to taste and another to stir or mix food



# Prevent Cross-contamination

Choose



Receiving



Storage



Preparation

- Designate a separate portion in a food room for handling ready-to-eat food and labelled “For preparation of sashimi only”
- **Cover** unpackaged ready-to-eat food is an effective way to prevent bacteria contamination



# Thawing

Choose

Receiving

Storage

Preparation

Frozen food should be thawed properly:

- Thawing in a refrigerator (4°C or below ); or
- Thawing under cold running water
- Avoid re-freezing and re-defrosting





# Serving

- **Cold Food: 4°C or below**
  - When serving cold food, put them in a **shallow container** and keep food chilled by setting the container with food in a **deep container with ice-cubes**
    - Drain off water as ice melts and refill new ice-cube
    - Serve ready-to-eat food as soon as possible after preparation



# Thai Sashimi



- **Valid license** is required for manufacturing of shrimp sashimi
- In addition to food premises license, a **specific endorsement for sale of sashimi** is required
- Meet the licensing requirements and conditions for food premises selling sashimi





# Licensing Requirements and Conditions

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- Preparation of sashimi shall be conducted in a separate portion or food preparation room specified for such purpose, which shall be bilingually labelled “此處只供配製刺身之用” “This portion is to be used only for the preparation of sashimi”
- Frozen raw materials for the preparation of sashimi shall be stored in a separate or designated part of a freezer. The freezer shall be bilingually labelled “刺身之用” “Sashimi only”
- The temperature of the freezer should be kept at  $-18^{\circ}\text{C}$  or below and equipped with a thermometer
- There shall be a refrigerator kept at a temperature between  $0^{\circ}\text{C}$  and  $4^{\circ}\text{C}$  and bilingually labelled “刺身之用” “Sashimi only”
- A sushi/sashimi-knife sterilization apparatus shall be provided and use approved sterilization solution
- Separate equipment and cutting boards shall be provided for the preparation of sashimi. The equipment shall be bilingually labelled “Sashimi only” and “刺身專用”



# Licensing Requirements and Conditions

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- If the food materials are imported, a copy of the health certificate issued by the relevant authority of the exporting country shall be kept by the licensee.

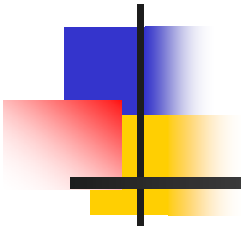
(It is not advisable to buy raw shrimps from market stalls or use shrimps intended for hotpot to make shrimp sashimi)

- The sushi/sashimi knife sterilization apparatus shall be cleansed and the sterilization solution renewed at least once daily
- All handlers of sashimi shall wear clean protective clothing including head coverings
- Stock records on the raw materials for the preparation of sashimi shall be kept

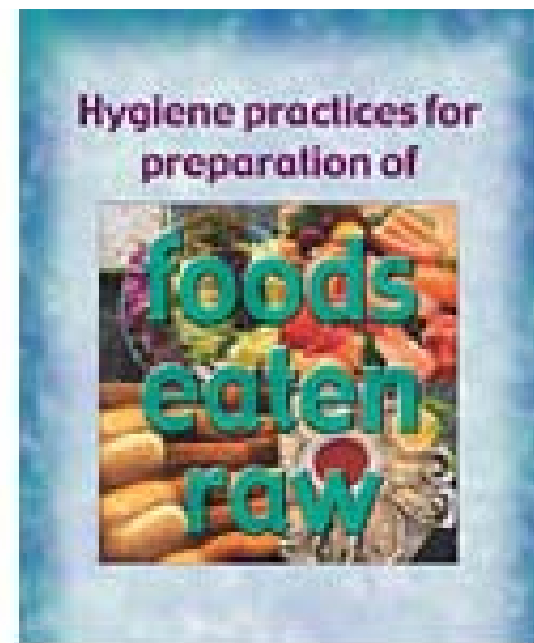
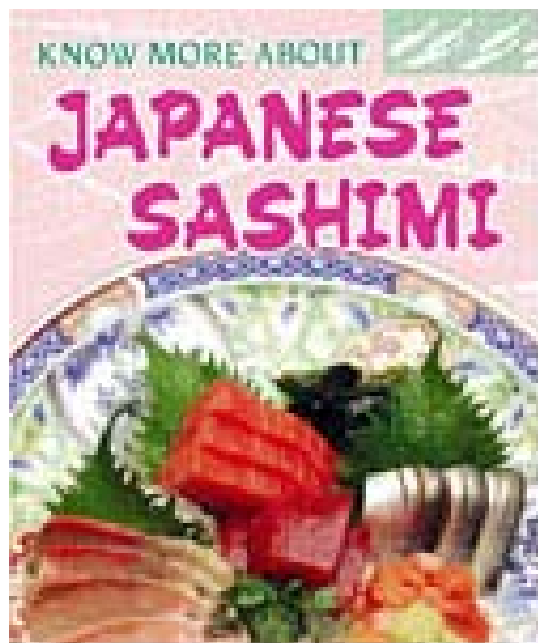
## Conclusions: Part II

Thai Restaurants and Food Risks  
can be controlled effectively by adopting  
the HACCP principle

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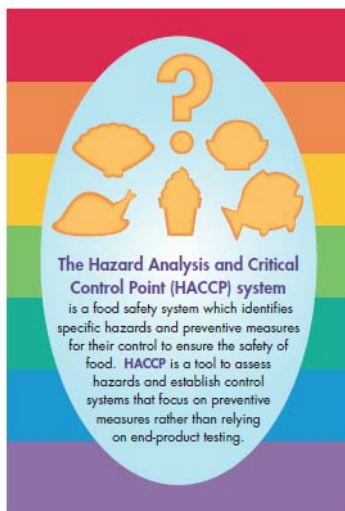


# References

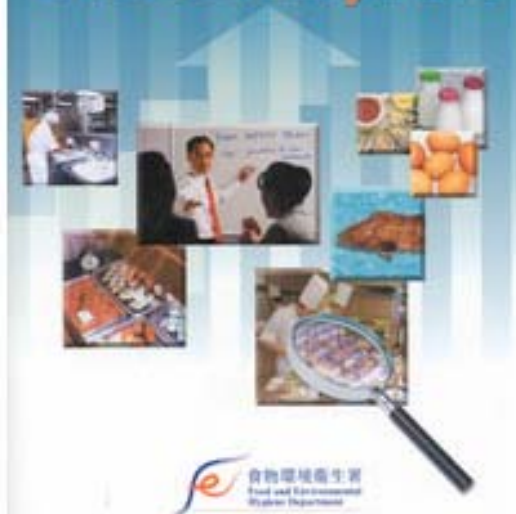


# Reference

## Adopt Food Safety System - Hazard Analysis and Critical Control Point



## How to Implement a Food Safety Plan



## MANAGE *RISK* for Food Safety

### Food Poisoning **10** Contributing Factors



#### Preparation of food

- Use of an unsafe food source
- Inadequate cooking of food
- Inadequate thawing of food before cooking
- Preparation of food too far in advance
- Inadequate reheating of cooked food

#### Storage of food

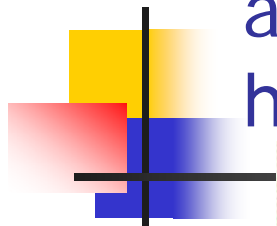
- Contamination of cooked food
- Improper storage of cooked food - prolonged storage of cooked food between 4°C and 60°C

#### Personnel and consumption practices

- Infected food handlers
- Consumption of raw food
- Use of leftovers



http://www.cfs.gov.hk/tc\_chi/programme/programme\_haccp/programme\_haccp\_industry\_safe.html



The screenshot shows the website for the Centre for Food Safety, Government of the Hong Kong Special Administrative Region. The header includes the logo, navigation links for 'GovHK 香港政府一站通', '繁體版', and '简体版', a search bar, and links for 'SITE MAP' and an email icon. A main banner features a group photo from the '2011 Food Safety Day' event. Below the banner is a 'Programme Areas' section with a 'Print Friendly' button. The main content area is titled 'Download "How to Implement a Food Safety Plan"' and lists several PDF files for download:

Document Title	File Type	Size
Front Page	PDF file	(267 KB)
Contents	PDF file	(22 KB)
Chapter 1 Introduction	PDF file	(18 KB)
Chapter 2 What is a Food Safety Plan	PDF file	(42 KB)
Chapter 3 How to implement a Food Safety Plan	PDF file	(173 KB)
Chapter 4 Basic requirements for a Food Safety Plan	PDF file	(173 KB)
Chapter 5 Relevant websites	PDF file	(72 KB)
Appendix	PDF file	







# Reference

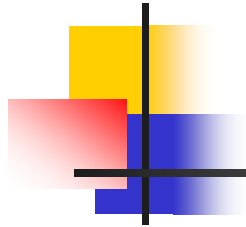
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## Communication Resource Unit

8/F, Fa Yuen Street Municipal Services Building,  
123A Fa Yuen Street, Mong Kok, Kowloon  
2381 6096

Centre for Food Safety Website :

**<http://www.cfs.gov.hk>**



Thank you