

- Scrub and rinse shellfish in clean water and discard shellfish with broken shells.
- Remove the intestines of shellfish.
- Wash meat before slicing and mincing.
- Slice raw meat and offal into thin strips to allow thorough cooking, especially during hotpot or congee cooking.

Cooking

- For sliced pig liver, depending on thickness and quantity, boil at 100°C or stir-fry in hot skillet/wok for at least three to five minutes.
- Food handlers should be made aware that heating to an internal temperature of 90°C for 90 seconds is required for cooking for molluscan shellfish. If possible, remove the shells before cooking as they impede heat penetration. Otherwise, boil at 100°C until their shells open; boil for additional three to five minutes afterwards. Discard any shellfish that do not open during cooking.
- For meat and offal, make sure that juices are clear, not red, blood is not visible when you cut the cooked meat and offal.

Heat treatment usually recommended (i.e. cooking to an internal temperature of 75°C for 30 seconds) to food safety may not be adequate for some virus-food combinations (e.g. hepatitis A virus and shellfish). More stringent time and temperature combinations are required.

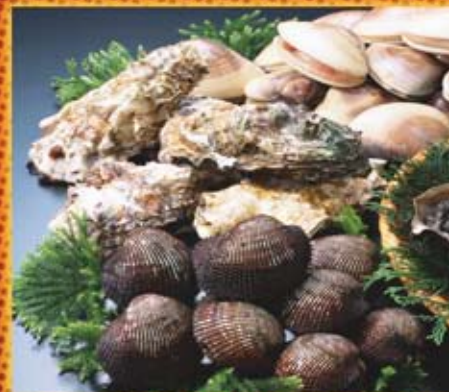
Personal Hygiene

- Always follow good personal hygiene practices, including:
 - Wash hands thoroughly with running water and soap for 20 seconds before handling food and often during food preparation, after handling raw meat or offal, before eating, and after using the toilet.
 - Open wound should be covered by bright-coloured water proof bandages or gloves.
 - Suspend from engaging in any food handling work when suffering or suspected to be suffering from an infectious disease or symptoms of illness such as flu, diarrhoea, vomiting, jaundice, fever, sore throat and abdominal pain.

A Guide for Food Service and Retail Outlets- Practise Food Hygiene to Prevent

Hepatitis A and Hepatitis E

Hepatitis A
Hepatitis E



Viral hepatitis is the inflammation of liver caused by virus. The disease is mainly caused by five different hepatitis viruses known as types A to E, of which types A and E are related to contaminated food or water.

Hepatitis A

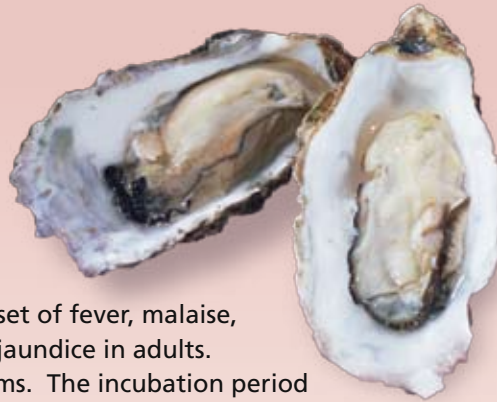
Hepatitis A may cause symptoms like an abrupt onset of fever, malaise, anorexia, nausea, abdominal pain, dark urine and jaundice in adults. Infected young children are often without symptoms. The incubation period ranges from 15 days to 50 days (average: 28 to 30 days). Hepatitis A virus is excreted in faeces of infected people which can contaminate water or food. As shellfish live in water and filter out minute living organisms as food, they can be easily contaminated by hepatitis A virus. People may contract hepatitis A after consumption of raw or undercooked shellfish harvested from contaminated waters and fresh produce nourished with contaminated water. In addition, food handlers can spread hepatitis A virus through cross-contamination with affected food, or by being hepatitis A virus carriers themselves and with poor personal hygiene.

Hepatitis E

Symptoms of hepatitis E are similar to those of hepatitis A such as fever, malaise, anorexia, nausea, abdominal pain, dark urine and jaundice. The incubation period for hepatitis E is longer with mean varied from 26 to 42 days and ranges from two to nine weeks. The disease usually is mild and resolves in two weeks, leaving no sequelae, except for pregnant women where hepatitis E may result in serious complications such as death of the mother and foetus, abortion, premature delivery, or death of baby soon after birth. In addition, the disease may cause adverse outcome in patients with preexisting chronic liver disease. Hepatitis E virus is also transmitted by faecal-oral route, mainly via consuming contaminated food (e.g. shellfish) or water. Foodborne transmission through consumption of raw or undercooked meat has been documented and pig livers may harbour hepatitis E virus. However, the epidemiological importance of this transmission route is uncertain.

Prevention by Practising the Five Keys to Food Safety

To prepare safe and wholesome food, it is recommended to practise the Five Keys to Food Safety in the daily operation:



1. Choose (Choose safe raw materials)
2. Clean (Keep hands and utensils clean)
3. Separate (Separate raw and cooked food)
4. Cook (Cook thoroughly)
5. Safe Temperature (Keep food at safe temperature)

Below are some practical tips in daily life to minimise the risk of contracting hepatitis A virus and hepatitis E virus as well as other pathogens through foods including shellfish, meat and offal.

Purchase and Receiving

- Obtain food and food ingredients from approved and reliable sources; and keep transaction records to ensure traceability.
- Use fresh and wholesome food ingredients and check the quality of the ingredients upon receipt.

Storage

- Do not overstuff the refrigerator.
- Ideally, use two separate refrigerators for storing raw food and cooked food or ready-to-eat food.
- If cooked food or ready-to-eat food and raw food such as raw meat and offal have to be stored in the same refrigerator, do the following :
 - Store food in containers with lids to avoid contact between raw food and ready-to-eat food or cooked food.
 - Store raw food below ready-to-eat food or cooked food in the refrigerator to prevent juices from dripping onto ready-to-eat food or cooked food.

Preparation

- Food contact surfaces of equipment and utensils should be maintained in a clean and sanitary condition.
- Wash utensils and worktops with hot water and detergent after each use.
- Use separate utensils to handle raw food (including raw meat and offal) and cooked food or ready-to-eat food e.g., use different colours codes for different utensils (including cutting boards and knives):

Red - Raw food

Blue - Cooked food

Green - Ready-to-eat food

