Shellfish Safety: Advice for Harvesters

Shellfish are animals living in the sea that have shells. Shellfish are generally edible but are not actually fish. Bivalve shellfish have two hinged shells and include oysters, clams, scallops, mussels and cockles.

British Columbia programs that ensure shellfish quality and safety
The Canadian Shellfish Sanitation Program (CSSP) seeks to ensure that bivalve shellfish harvested in Canada is safe to eat. The CSSP is run by 3 federal government agencies:
- Environment Canada (EC)
- Canadian Food Inspection Agency (CFIA)
- Fisheries and Oceans Canada (DFO)

In BC, all commercially harvested bivalve shellfish are processed and inspected in federally registered plants. Bivalve shellfish tags issued are required to be kept for three (3) months by all businesses purchasing bivalve shellfish in BC.

The shellfish industry is organized under the BC Shellfish Growers Association. The industry participates with CSSP and other provincial and federal government agencies in monitoring and managing bivalve shellfish. Shellfish harvesters and processing plants manage risks by following strict time/temperature guidelines to safely harvest and transport shellfish. A shellfish sampling program ensures that Vibrio parahaemolyticus levels during warm summer months are within Health Canada guidelines. These control measures work together to reduce the risk of illness to the consumer.

Recommendations for harvesting shellfish
- As a recreational harvester, you will need to buy a “Tidal Waters Licence” from DFO.
- Check before you harvest - harvest bivalve shellfish only from approved open areas.
- To ensure the area you are going to harvest from is safe, contact your local office of Fisheries and Oceans Canada (DFO), DFO’s 24 hour information telephone line at (604) 666-3330 or toll free at 1-866-431-3474 or consult the DFO Pacific Region website at www.pac.dfo-mpo.gc.ca.
- Harvest shellfish when the shellfish are still under water, and on a receding tide (tide is going out, not coming in).
- Refrigerate immediately after harvesting. Use an ice pack and cooler to keep shellfish cold (less than 4°C) until they can be refrigerated.
- Harvest shellfish 125m away from floathomes.
- Harvest shellfish when the shellfish are still under water (the shellfish will suffocate and die).
Why does eating shellfish sometimes cause illness?

Shellfish naturally ingest organisms such as bacteria, viruses, and plankton toxins that are in ocean water. These organisms and toxins can build up in the shellfish and can make people sick when they consume the contaminated shellfish.

*Vibrio parahaemolyticus*, Hepatitis A and Norovirus infections are associated with eating raw shellfish. *Vibrio* is a bacterium naturally found in the ocean. During warm summer months the levels of bacteria increase in the water and bivalve shellfish (especially raw oysters) can become contaminated.

Shellfish contaminated with viruses (like Hepatitis A and Norovirus) are likely a result of sewage contamination.

Paralytic Shellfish Poisoning (PSP), Diarrhetic Shellfish Poisoning (DSP) and Amnesic Shellfish Poisoning (ASP) can be the result of eating shellfish contaminated with toxins from plankton (sometimes - but not always - seen in ‘red tides’).

Eating raw shellfish increases the risk of infection. Cooking shellfish will destroy these organisms and prevent illness.

Illnesses associated with eating shellfish can occur when:
- Contaminated shellfish are eaten raw.
- Contaminated shellfish are eaten cooked when toxins are elevated.
- Shellfish are not kept cold either during or after harvesting. Higher temperatures allow some bacteria to multiply and cause illness.

**How do I avoid getting ill?**

There is sometimes no way to know if shellfish are contaminated; there may be no change in the sight, smell or taste. Follow the harvesting, storing and cooking instructions.

**Allergic Reactions** can result in some persons when they contact seafood (fish, crustaceans and shellfish), considered one of the nine most common food allergens by Health Canada.

**What should I do if I get sick after eating shellfish?**
- See your doctor for testing, advice and treatment.
- Contact your local public health department to report your illness.
- Keep track of where you consumed, purchased or harvested the shellfish and other foods.

**What are the symptoms?**

- Jaundice
- Persons with liver conditions at risk for serious illness
- Numbness/tingling in mouth, face, arms or legs
- Coordination problems
- In serious cases, paralysis, difficulty breathing & death
- Muscle weakness
- Disorientation
- Memory loss
- In serious cases, death is possible
- Chills

<table>
<thead>
<tr>
<th>Hypertoxin appropriate Condition</th>
<th><em>Vibrio parahaemolyticus</em></th>
<th>Hepatitis A</th>
<th>Norovirus</th>
<th>Paralytic Shellfish Poisoning</th>
<th>Amnesic Shellfish Poisoning</th>
<th>Diarrhetic Shellfish Poisoning</th>
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<td>Jaundice</td>
<td>Muscle weakness</td>
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<td>Chills</td>
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**Onset of Symptoms after exposure**
- Within 24 hrs
- Within 15-50 days (typically 28-30 days)
- Within 12-48 hours (typically 36 hrs)
- Within 15 min to 10 hrs (typically 2 hours)
- Within 24 hrs
- Within 30 min to 12 hrs

**Duration of Symptoms**
- 1-7 days
- 1-2 weeks (mild) to 1 year
- 2-3 days
- Few hours to a few days
- Few hours to a few days
- 2-3 days