

SHELLFISH POISONING (PARALYTIC, AMNESIC)

There are two main types of shellfish poisoning that have occurred in Nova Scotia: Paralytic and Amnesic. Both types are covered in this section.

Case definition

Paralytic Shellfish Poisoning (PSP)

CONFIRMED CASE

Clinical illness and:

- detection of saxitoxin and/or gonyautoxins in epidemiologically related, ingested shellfish

OR

- detection of high levels of dinoflagellates associated with shellfish poisoning in water from which epidemiologically related shellfish were gathered.

PROBABLE CASE

Clinical illness within 12 hours of consumption of shellfish, primarily bivalve shellfish, [e.g., oysters, clams, mussels, whole scallops] and/or non-bivalve shellfish such as sea snails and/or the tomalley of crustaceans.

Amnesic Shellfish Poisoning (ASP)

Amnesic Shellfish Poisoning is also referred to as Domoic Acid Poisoning (DAP) because amnesia is not always present and shellfish are not always the vector.

CONFIRMED CASE

Clinical illness and:

- Detection of domoic acid (toxin associated with amnesic shellfish poisoning) in epidemiologically related, ingested shellfish.

OR

- Detection of high levels of dinoflagellates associated with shellfish poisoning in water from which epidemiologically related shellfish were gathered.

PROBABLE CASE

Clinical illness within 36 hours of consumption of shellfish and/or the tomalley of crustaceans and/or fin fish eaten whole, such as sardines and anchovies.

Causative agent

- PSP: Saxitoxin and/or gonyautoxins found in shellfish and the tomalley of crustaceans.
- ASP: Domoic acid, found in shellfish, fin fish and the tomalley of crustaceans.

Source

- Contaminated shellfish, including oysters, clams, mussels, scallops, cockles, sea snails and the tomalley of crustaceans.
- ASP can also be found in fish species; those fish which are eaten whole pose the greatest risk, including anchovies and sardines.

Incubation

- PSP: A few minutes to 12 hours from consumption, typically 30 minutes to 3 hours.
- ASP: 15 minutes to 36 hours, average 5 hours from ingestion.

Transmission

Consumption of seafood contaminated with marine biotoxins, saxitoxin, gonyautoxin and/or domoic acid.

Note: The toxins that cause PSP and ASP are not destroyed by cooking.

Communicability

None. PSP and ASP are foodborne intoxications and are not considered to be spread person-to-person.

Symptoms

The intensity and progression of the symptoms are dependent on the type and amount of the toxin ingested and the level of concentration of the toxin in the shellfish.

Paralytic Shellfish Poisoning:

Clinical illness is characterized by neurological symptoms such as paresthesia and/or paralysis involving the mouth, face, neck and extremities, which may be accompanied by gastrointestinal symptoms, which usually resolve within a few hours to a few days. In severe cases, ataxia, dysphonia, dysphagia and muscle paralysis with respiratory arrest and death may occur within 12 hours.

Amnesic Shellfish Poisoning:

Clinical illness is characterized by acute gastrointestinal symptoms such as nausea, vomiting, abdominal cramps and diarrhea. In more severe cases, neurological

symptoms may occur such as headache, dizziness, disorientation, hyporeflexia, hemiparesis, ophthalmoplegia, seizures and coma. Loss of short-term memory may also occur and for some the memory deficits may be permanent.

Diagnostic testing

Testing of shellfish for toxin.

Treatment

Supportive. Evacuation of stomach contents may help if consumption was recent.

PUBLIC HEALTH MANAGEMENT & CONTROL

Case management

Follow up the case using the following steps:

1. Contact the primary care provider to obtain clinical information on the case.
2. Interview the case, review clinical information, determine food history, travel history and activities, employment, potential source of exposure and determine any contacts that may require investigation (see “[Contact tracing](#)” section).
3. Educate the case and/or family about shellfish poisoning and prevention measures, providing access to website, general information, etc.
4. Contact a Food Safety Specialist at the Department of Environment to advise them of a suspected illness:
 - a. The Food Safety Specialist will begin an investigation of the possible source(s) of the disease.
 - b. They will provide information on their investigation to the investigator and the Medical Officer of Health.
 - c. Food Safety will liaise with the CFIA to arrange for testing of any shellfish/ seafood food samples.
 - i. The CFIA can be contacted directly if required by filling out the on-line form inspection.gc.ca/food/information-for-consumers/report-a-concern/contact-us/eng/1390269985112/1390346078752 or by calling the CFIA general number at 1-800-442-2342.
 - ii. If the need to contact the CFIA is urgent the MOH can provide direct contact information for the CFIA supervisor responsible for food safety and illness investigations.

Exclusion

Exclusion not required as shellfish poisoning is not transmissible from person to person. For hygiene reasons, recommend that the case remain at home until 48 hours after gastrointestinal symptoms have subsided, especially cases that work in food service.

Education

Offer the following information:

- Remind cases about the importance of hand hygiene and to wash hands before preparing food and after using the bathroom and changing diapers.
- Recommend that cases infected with shellfish poisoning or any other gastrointestinal illness should not prepare or serve food to other people.

See the [General Information Sheet](#) for further information on shellfish poisoning and how to prevent it from occurring.

Contact tracing

Not applicable. Not spread person to person.

Surveillance forms

novascotia.ca/dhw/populationhealth/surveillanceguidelines/NS_Notifiable_Disease_Surveillance_Case_Report_Form.docx

novascotia.ca/dhw/populationhealth/surveillanceguidelines/Enteric_Case_Report_Form.pdf

[General Information Sheet](#)

References

Alberta Health, Shellfish Poisoning health.alberta.ca/documents/Guidelines-Shellfish-Poisoning-2011.pdf

Canadian Shellfish Sanitation Program inspection.gc.ca/food/fish-and-seafood/shellfish-sanitation/eng/1299826806807/1299826912745

Health Canada reminds Canadians about the consumption of lobster tomalley healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2013/33625a-eng.php

Marine Toxins in Bivalve Shellfish: Paralytic Shellfish Poisoning, Amnesic Shellfish Poisoning and Diarrhetic Shellfish Poisoning inspection.gc.ca/food/information-for-consumers/fact-sheets/specific-products-and-risks/fish-and-seafood/toxins-in-shellfish/eng/1332275144981/1332275222849

Public Health Agency of Canada. [2009]. Case Definitions for Communicable Diseases under National Surveillance. CDDR 2009; 35S2, 1-123. Retrieved from phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/35s2/index-eng.php

Shellfish food safety healthycanadians.gc.ca/eating-nutrition/healthy-eating-saine-alimentation/safety-salubrite/meat-viandes/shellfish-mollusques-eng.php