

# PARALYTIC SHELLFISH POISONING

## Disease Overview

Paralytic Shellfish Poisoning is an illness that may have serious and potentially fatal effects for some people and is caused by eating bivalve shellfish that contain high levels of marine biotoxins. These include marine biotoxins, saxitoxins and gonyautoxins produced by microscopic plants, Alexandrium species and other dinoflagellates. Concentration of these toxins in shellfish occurs during massive algal blooms known as "red tides" but also in the absence of recognizable algal bloom. The toxins can persist in shellfish for up to a year after a bloom. It is most common in shellfish harvested from colder waters but may also occur in tropical waters.

## Symptoms

Symptoms include a tingling sensation or numbness around the lips, gradually spreading to the face and neck. Other symptoms include a prickly sensation in the fingertips and toes, headache, and dizziness. In more severe cases, affected individuals can experience incoherent speech, a prickly sensation in the arms and legs, stiffness and non-co-ordination of limbs, weakness, and a rapid pulse. Respiratory difficulty, salivation, temporary blindness, nausea, and vomiting may also occur. In extreme cases, paralysis of respiratory muscles may lead to respiratory arrest and death within two to 12 hours after consumption.

## Reservoir

## Mode of Transmission

Illness is linked to the consumption of contaminated shellfish. The toxins are not destroyed by cooking. Shellfish can have high levels of marine toxins during any given month depending on environmental conditions.

## Incubation Period

Symptoms may begin within a few minutes and up to 10 hours after consumption.

## Period of Communicability

Not communicable

## Risk Factors

Increased risk of acquiring and/or severe illness:

- Children

## Surveillance Case Definition

**Confirmed case** is clinical illness and:

- detection of saxitoxin 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

A **probable case** is clinical illness within 12 hours of consumption of bivalve mollusk shellfish (e.g. oysters, clams, mussels).

## Diagnosis and Laboratory Guidelines

Food samples can be tested for by the Canadian Food Inspection Agency (CFIA).

## Reporting

Per Policy 2.2 Disease and Event notification to OCMOH and Disease and Event Reporting section.

- Routine surveillance (RDSS) for all confirmed cases.

## Case Management

### Education

Case or relevant caregiver should be informed about:

- Nature of infection, length of communicable period and mode of transmission
- Hand washing
- Food safety
- Adults should restrict consumption of lobster tomalley to no more than one cooked lobster per day
- Children should not consume lobster tomalley.

### Investigation

For cases complete enteric investigation form.

Perform a food history to determine the possible source of the analysis. Include questions about place of purchase, vendor and where the food was prepared and ingested. Ask about travel history and participation in shellfish harvesting.

Inquire about other persons that may have been exposed. Persons with compatible symptoms should seek medical attention immediately.

Inquire about availability of a food sample for testing. Ensure that remaining sources of exposure have been discarded to prevent further cases.

An identified source may require public notification and postings and closing of shellfish harvesting areas in conjunction with Fisheries and Oceans Canada, CFIA and Environment Canada.

### Exclusion/Social Distancing

Not applicable

### Treatment

Supportive.

### Immunization

Not applicable. There is no antidote to the toxins. Severe cases can require hospitalization.

## **Contact Management**

### **Education**

As per case management

### **Investigation**

Followup should occur to identify other people who could have been exposed to the source. Symptomatic contacts should seek medical attention.

### **Exclusion/Social Distancing**

Not applicable

### **Prophylaxis**

Not applicable

## **Outbreak Management**

Activate the local outbreak plan when an outbreak has been declared.

An identified source of outbreak may require closing of shellfish harvesting areas.