

Vibrio

Food Act 2006

The genus *Vibrio* includes a group of bacteria that occur naturally in marine and estuarine waters throughout the world. Considered predominately a waterborne pathogen, some *Vibrio* species can cause foodborne illness in humans, including *Vibrio parahaemolyticus*, *Vibrio vulnificus* and *Vibrio cholerae*. Certain strains of *V. cholerae* cause severe diarrhoeal disease and have been associated with pandemics overseas.

How do *Vibrios* cause foodborne illness?

The most common sources of infection include ingestion of contaminated water or ingestion of food that has come into contact with contaminated water, unclean hands or flies, or consumption of poorly cooked fish or shellfish obtained from contaminated waters. *Vibrio* numbers can fluctuate with seawater temperature, increasing in the summer months, and can survive for long periods in water and in ice.

In Australia, cases of vibriosis are most commonly attributed to the consumption of seafood. *V. parahaemolyticus* and *V. vulnificus* may be naturally present in low numbers in seafood. Most healthy consumers are able to tolerate these low levels and do not become ill. However, severe gastroenteritis cases may occur when high levels of the bacteria are present or among people who have weakened immune systems.

The pandemic strain of *V. cholerae*, known as cholera, is not endemic in Australia. However, there have been rare sporadic occurrences in New South Wales and in Queensland where less virulent strains become established in river systems. *V. cholerae* will not be naturally present in food supplies unless they are products harvested from contaminated aquatic environments. The disease is closely linked with poor sanitation, so the risk of a large-scale outbreak is small in Australia due to appropriate sewage disposal and sanitation. Cases notified in Australia are often in returned travellers from overseas countries where the disease is still common e.g. Africa, Middle East and Latin America.

Who is at risk?

Anyone can be affected by foodborne illness from *Vibrios*, but certain people are at greater risk of severe illness, including:

- pregnant women
- young children (under 5 years)
- older adults (over 60 years)
- people with weakened immune systems
- people with liver disease
- people taking medication to decrease stomach acid levels.

The only way to protect susceptible consumers from infection is to ensure they do not eat raw or partially cooked seafood.

What are the symptoms of *Vibrio* foodborne illness?

Symptoms can vary depending on the species. Common symptoms include:

- nausea
- abdominal cramps
- watery diarrhoea
- vomiting
- fever
- chills.

Most infected people will experience symptoms within 12-24 hours after eating contaminated food, but it can range from one to seven days. Most people will recover on their own, however, severe illness may result in hospitalisation.

Cholera, while rare in Australia, is an acute diarrhoeal disease with variable severity. Mild illness and asymptomatic infection are more common. If infected, less than 20% of people develop severe illness characterised by sudden, painless, profuse watery diarrhoea ("rice water" diarrhoea) often with vomiting, rapid dehydration, muscle cramps and circulatory collapse. Death may result in 3-4 hours if the patient is not adequately rehydrated.

Prevention

V. parahaemolyticus and *V. vulnificus* are not normally spread from person-to-person, however, this is possible if there is poor personal hygiene. In the case of *V. cholerae*, humans can be a reservoir and food can become contaminated via infected food handlers. *Vibrio* gastroenteritis is most often the result of consuming seafood that is either undercooked or raw, such as oysters, or where food has been out of temperature control, allowing the growth of bacteria.

The most effective way of preventing *Vibrio* foodborne illness is to prevent its growth in food. This can be achieved by:

- cooking food thoroughly and serving it immediately or keeping it hot until serving
- when cooling cooked potentially hazardous food to be stored and used later, cool the food–
 - (a) within two hours - from 60°C to 21°C; and
 - (b) within a further four hours - from 21°C to 5°CHint: divide large amounts of hot food into small shallow containers to allow it to cool faster
- making sure your refrigerator temperature is at 5°C or colder
- reheating cooked food quickly with a microwave or stovetop (to 60°C or above)

- storing raw seafood below ready-to-eat foods in the refrigerator or cold room to prevent cross contamination
- do not wash or cool cooked seafood with untreated sea water
- washing your hands with soap and drying them before preparing food and between preparing raw and ready-to-eat foods
- keeping your kitchen clean and ensuring all food contact surfaces are cleaned and sanitised before preparing food and between preparation of raw foods and ready-to-eat foods.

What to do if you suspect foodborne illness

If you suspect you have foodborne illness, seek medical advice.

A faeces (poo) sample may be required to confirm *Vibrio* infection.

Diarrhoea can cause dehydration, so it is important to drink plenty of fluids.

If you have a concern about a food product or a food business, Queensland Health provides an online form to make a food complaint. This is available at <https://phconnect-foodcomplaints.health.qld.gov.au>

Further information

For health advice, please contact your doctor or nearest health facility, or call 13 HEALTH (13 43 25 84).

For food safety advice and further information, contact your local Public Health Unit at www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units.

The Food Pantry has advice related to food safety for food businesses and consumers at www.qld.gov.au/foodpantry.