Frequently Asked Questions

- What is *Vibrio parahaemolyticus*?
- What type of illness is caused by *V. parahaemolyticus*?
- How does infection with *V. parahaemolyticus* occur?
- How common is *V. parahaemolyticus* infection?
- How is *V. parahaemolyticus* diagnosed?
- How is *V. parahaemolyticus* treated?
- How do oysters get contaminated with *V. parahaemolyticus*?
- How is *V. parahaemolyticus* infection prevented?
- How can I find out more about *V. parahaemolyticus*?

What is *Vibrio parahaemolyticus*?

*Vibrio parahaemolyticus* is a bacterium in the same family as those that cause cholera. It lives in brackish saltwater and causes gastrointestinal illness in humans. *V. parahaemolyticus* naturally inhabits coastal waters in the United States and Canada and is present in higher concentrations during summer; it is a halophilic, or salt-requiring organism.

What type of illness is caused by *V. parahaemolyticus*?

When ingested, *V. parahaemolyticus* causes watery diarrhea often with abdominal cramping, nausea, vomiting, fever and chills. Usually these symptoms occur within 24 hours of ingestion. Illness is usually self-limited and lasts 3 days. Severe disease is rare and occurs more commonly in persons with weakened immune systems. *V. parahaemolyticus* can also cause an infection of the skin when an open wound is exposed to warm seawater.
Most people become infected by eating raw or undercooked shellfish, particularly oysters. Less commonly, this organism can cause an infection in the skin when an open wound is exposed to warm seawater.

**How common is infection with *V. parahaemolyticus*?**

In Asia, *V. parahaemolyticus* is a common cause of foodborne disease. In the United States, it is less commonly recognized as a cause of illness, partly because clinical laboratories rarely use the selective medium that is necessary to identify this organism. Not all states require that *V. parahaemolyticus* infections be reported to the state health department, but CDC collaborates with the Gulf Coast states of Alabama, Florida, Louisiana, and Texas to monitor the number of cases of Vibrio infection in this region. From those states, about 30-40 cases of *V. parahaemolyticus* infections are reported each year. The Foodborne Diseases Active Surveillance Network, Food Net, also tracks *V. parahaemolyticus* in regions outside the Gulf Coast. In 1997, the incidence of diagnosed *V. parahaemolyticus* infection in Food Net sites was .25/100,000.

**How is *V. parahaemolyticus* infection diagnosed?**

Vibrio organisms can be isolated from cultures of stool, wound, or blood. For isolation from stool, use of a selective medium that has thiosulfate, citrate, bile salts, and sucrose (TCBS agar) is recommended. If there is clinical suspicion for infection with this organism, the microbiology laboratory should be notified so that they will perform cultures using this medium. A physician should suspect *V. parahaemolyticus* infection if a patient has watery diarrhea and has eaten raw or undercooked seafood, especially oysters, or when a wound infection occurs after exposure to seawater.

**How is *V. parahaemolyticus* treated?**

Treatment is not necessary in most cases of *V. parahaemolyticus* infection. There is no evidence that antibiotic treatment decreases the severity or the length of the illness. Patients should drink plenty of liquids to replace fluids lost through diarrhea. In severe or prolonged illnesses, antibiotics such as tetracycline, ampicillin or ciprofloxacin can be used. The choice of antibiotics should be based on antimicrobial susceptibilities of the organism.

**How do oysters get contaminated with *V. parahaemolyticus***?

Vibrio is a naturally occurring organism commonly found in waters where oysters are cultivated. When the appropriate conditions occur with regard to salt content
and temperature, \textit{V. parahaemolyticus} thrives.

**How is \textit{V. parahaemolyticus} infection prevented?**

Most infections caused by \textit{V. parahaemolyticus} in the United States can be prevented by thoroughly cooking seafood, especially oysters. Wound infections can be prevented by avoiding exposure of open wounds to warm seawater. When an outbreak is traced to an oyster bed, health officials recommend closing the oyster bed until conditions are less favorable for \textit{V. parahaemolyticus}.

**How can I learn more about \textit{Vibrio parahaemolyticus}?**

You can discuss your medical concerns with your doctor or other health care provider. Your local health department can provide information about this and other public health problems. Information about problems associated with raw seafood consumption can be obtained from the FDA’s Center for Food Safety and Applied Nutrition (telephone 1-800-332-4010). At this number recorded information is available on many subjects including seafood consumption and handling. A public affairs specialist is available 12:00 p.m.-4:00 p.m. Eastern Standard Time. Seafood safety information is also available on the world wide web at \url{http://vm.cfsan.fda.gov}, \url{http://seafood.ucdavis.edu}. There is more information about other Vibrio infections, such as \textit{Vibrio vulnificus} at \url{http://www.cdc.gov/ncidod/diseases/foodborn/vibrio.htm}. 

\textbf{Disease Listing} | General Information | Technical Information | Additional Information

\textbf{CDC Home} | Search | Health Topics A-Z

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\textbf{Centers for Disease Control and Prevention}
\textbf{National Center for Infectious Diseases}
\textbf{Division of Bacterial and Mycotic Diseases}
### Vibrio parahaemolyticus

#### Clinical Features
Watery diarrhea, often with abdominal cramping, nausea, vomiting, and fever. Less commonly, wound or soft tissue infections. Occasionally bloodstream infections.

#### Etiologic Agent
*Vibrio parahaemolyticus*, a halophilic (salt-requiring) gram-negative bacterium naturally and commonly found in warm marine and estuarine environments.

#### Incidence
Nationwide, an average of 190 culture-confirmed cases, 30 hospitalizations, and 1-2 deaths are reported each year. However, it is estimated that there are truly as many as 3000 cases (most not culture confirmed), 40 hospitalizations and 7 deaths.

#### Sequele
Most persons recover after 3 days and suffer no long-term consequences. Bloodstream infections and death are uncommon and usually occur in persons with underlying medical conditions.

#### Transmission
Eating raw or undercooked shellfish, particularly oysters. Less commonly, wound infections may occur when wounds or soft tissues are exposed to warm seawater.

#### Risk Groups
All persons. Persons with underlying medical conditions, such as alcoholism and liver disease may be at increased risk of infection and serious complications.

#### Surveillance
Twenty states require reporting of *Vibrio* infections to public health officials. Surveillance for culture-confirmed infections has been conducted in the Gulf Coast states of Alabama, Florida, Louisiana, Mississippi, and Texas since 1988, and expanded to include FoodNet sites in 1996.

#### Trends
Infections are seasonal; approximately 70% occur between May and October. Four outbreaks linked to the consumption of raw oysters occurred in 1997 and 1998 involving over 700 cases combined. Environmental factors, such as warm water and moderate salinity, can increase the number of *V. parahaemolyticus* organisms in shellfish.

#### Challenges
Many persons prefer to consume oysters and other shellfish raw. Not all strains cause illness. Large outbreaks
have occurred when counts of *V. parahaemolyticus* in oysters from implicated sites were very low. Therefore, monitoring and responding to elevated counts of *V. parahaemolyticus* in the harvesting waters and in shellfish does not adequately protect the public health.

**Opportunities**  
Education focusing on the risks associated with consumption of raw and undercooked shellfish, especially in warm months. Implement refrigeration from harvesting to consumption. Revision of the standards used for closing and re-opening of oyster beds to take into account the role of environmental factors.

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Links

References


