



# OLR RESEARCH REPORT

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## VIBRIO VULNIFICUS

This report provides general information about *Vibrio vulnificus*, a bacterium sometimes found in certain seafood and coastal waters, and reported cases of it in Connecticut since 2000.

### SUMMARY

*Vibrio vulnificus* is a naturally occurring bacterium found throughout warm coastal waters. It can cause illness in people who eat contaminated seafood, particularly oysters, or expose a wound to seawater containing it.

According to the Centers for Disease Control and Prevention (CDC), cases of *Vibrio vulnificus* are rare and most occur in Gulf Coast states. Cases occur sporadically and are more common during the warmer months. No outbreaks have been reported.

Ingesting it can cause gastroenteritis (stomach or intestinal inflammation) which can progress to infection. Infections can also occur from the bacterium entering an open wound. People with weakened immune systems are more likely to suffer serious reactions or infections, some deadly.

Seven cases of *Vibrio vulnificus* have been reported in Connecticut since 2000. Of those cases, three were associated with seafood consumption and the rest with wound exposure. All of the cases occurred between June and October.

## **VIBRIO VULNIFICUS**

*Vibrio vulnificus* is a bacterium in the same family as that which causes cholera. It is usually found in warm seawater and can cause illness in people who eat contaminated seafood or have an open wound exposed to seawater containing it. It is associated with marine species such as shellfish, crustaceans, and finfish.

According to the CDC, *Vibrio vulnificus* cases are rare and most cases occur in Gulf Coast states (over 90% of U.S. cases are associated with Gulf Coast oysters). The CDC received over 900 reports of infections from those states between 1988 and 2006. Cases are more prevalent during the warmer months (with water temperatures over 68 degrees Fahrenheit).

In healthy people, ingesting the bacteria can cause abdominal pain and digestive maladies. Symptoms include fever, vomiting, diarrhea, and cramping. People with compromised immune systems, such as people with chronic liver disease, are more likely to have it enter the bloodstream, develop septicemia or other serious infections, and suffer potentially fatal effects. Septicemia symptoms include fever and chills and may include the above symptoms of gastroenteritis. The bacteria can also directly infect skin when open wounds are exposed to seawater, breaking down the skin and causing ulcers.

One study cited by the CDC showed that people with preexisting medical conditions were 80 times more likely than healthy people to develop bloodstream infections. According to the CDC, bloodstream infections from *Vibrio vulnificus* are fatal about 50% of the time.

Symptoms from ingestion can occur anywhere from 12 hours to 21 days whereas symptoms from wound infection can occur in as quickly as four hours. The CDC encourages immediate treatment if *Vibrio vulnificus* is suspected. Antibiotics increase the chance of survival and people that recover from a *Vibrio vulnificus* infection should not experience long-term effects.

The bacterium is susceptible to freezing and cooking. To decrease the likelihood of acquiring *Vibrio vulnificus*, the CDC recommends such things as (1) cooking shellfish thoroughly and not eating raw shellfish, (2) avoiding cross-contamination of food with raw seafood, (3) wearing protective clothing when handling raw shellfish, (4) eating shellfish promptly after cooking and refrigerating any leftovers, and (5) avoiding exposure of broken skin or open wounds to salt water or raw shellfish.

Information about food safety is available from the U.S. Food and Drug Administration's (FDA) Safe Food Information Line (1-888-723-3366). Staff members are generally available between 10:00 a.m. and 4:00 p.m., Monday through Friday.

More information about *Vibrio vulnificus* is available on the CDC website at <http://www.cdc.gov/nczved/divisions/dfbmd/diseases/vibriov/> or in FDA's [Bad Bug Book: Foodborne Pathogenic Microorganism and Natural Toxins Handbook](#), second edition, pgs. 45-48.

## INCIDENCE IN CONNECTICUT

According to the state Department of Public Health (DPH), there have been seven reported cases of *Vibrio vulnificus* since 2000. All were laboratory-confirmed. Three cases were associated with shellfish consumption and the other four were likely acquired through seawater-exposed wounds. The cases occurred during the months of June (one case), August (three cases), September (two cases), and October (one case). Table 1 shows the number of cases reported by year.

**Table 1: *Vibrio vulnificus* Cases in Connecticut Reported by Year**

<i>V. Vulnificus</i> Cases in CT	
2000	1
2001	0
2002	0
2003	0
2004	0
2005	0
2006	1
2007	1
2008	1
2009	2
2010	1
2011	0
2012 to date	0
<b>TOTAL</b>	<b>7</b>

### ***Shellfish Consumption Cases***

According to DPH, of the three cases associated with shellfish consumption, two people reported consuming raw oysters and one reported consuming raw clams, but shellfish were not routinely tested as part of the investigations.

Two people reported consuming shellfish at Connecticut restaurants. Investigations suggest these shellfish were harvested from waters in either Connecticut or New Jersey (for one case) and Texas (for the other case). The Connecticut or New Jersey shellfish were harvested in June and the Texas shellfish were harvested in August. The remaining case involved consuming shellfish in Maine but no additional source information was available.

### ***Seawater Exposure Cases***

DPH reported that of the four cases that likely acquired the infection through wounds exposed to seawater, two people reported water exposures in Connecticut and one reported such exposure in Rhode Island. The exposure area for the other case is unknown or could not be determined.

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