



## FACT SHEET

### ***Vibrio vulnificus***

#### **What is *Vibrio vulnificus*?**

*Vibrio vulnificus* is a bacterium that is a rare cause of illness in the United States. The illness is very different from cholera, which is caused by different bacteria, called *Vibrio cholerae*. *V. vulnificus* infections do not spread directly from one person to another and are a serious health threat predominantly to persons with underlying illness, such as liver disease, or a compromised immune system. The organism is a natural inhabitant of warm coastal waters. Infection can occur after a wound is exposed to warm coastal waters where the *V. vulnificus* organism is growing. Infection may also be acquired by eating raw or undercooked seafood from those waters.

CDC receives reports of over 400 *Vibrio* illnesses each year. Of those, about 90 per year are due to *V. vulnificus*. Most *V. vulnificus* illness occurs during warm-weather months.

#### **Symptoms of infection with *V. vulnificus***

- Acute illness, with a rapid decline in health following exposure
- If exposed by contamination of an open wound, increasing swelling, redness, and pain at the site of the wound
- Illness typically begins within 1-3 days of exposure, but begins as late as 7 days after exposure for a small percentage of cases
- Fever
- Swelling and redness of skin on arms or legs, with blood-tinged blisters
- Low blood pressure and shock

By contrast, the symptoms of cholera are profuse watery diarrhea, vomiting, cramps, and low-grade fever.

#### **Illness caused by *V. vulnificus***

Wound infections may start as redness and swelling at the site of the wound that then can progress to affect the whole body. *V. vulnificus* typically causes a severe and life-threatening illness characterized by fever and chills, decreased blood pressure (septic shock), and blood-tinged blistering skin lesions (hemorrhagic bullae). Overall, *V. vulnificus* infections are fatal about 40% of the time. Wound infections with *V. vulnificus* are fatal about 20% of the time, and aggressive surgical treatment can prevent death.

#### **How people become infected**

*V. vulnificus* is found in oysters and other shellfish in warm coastal waters during the summer months. Since it is naturally found in warm marine waters, people with open wounds can be exposed to *V. vulnificus* through direct contact with seawater, shellfish, and marine wildlife. There is no evidence of person-to-person transmission of *V. vulnificus*.

## ***Vibrio vulnificus***

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Persons who have immunocompromising conditions and especially persons with chronic liver disease are particularly at risk for *V. vulnificus* infection when they eat raw or undercooked seafood, particularly shellfish harvested from the Gulf of Mexico, or if they bathe a cut or scrape in marine waters. About three-quarters of patients with *V. vulnificus* infections have known underlying hepatic disease or other immunocompromising illness. Otherwise healthy persons are at much lower risk of *V. vulnificus* infection.

### **Concerns in hurricane-affected areas**

Persons with immunocompromising conditions and especially those with chronic liver disease should avoid exposure of open wounds or broken skin to warm salt or brackish water, and avoid consuming undercooked shellfish harvested from such waters. More information on caring for wounds may be found in the fact sheet "Emergency Wound Care After a Natural Disaster" available on the CDC Hurricanes website at <http://www.bt.cdc.gov/disasters/woundcare.asp>.

After a coastal flood disaster, large numbers of persons with illnesses that affect their resistance to infection may be exposed to seawater. Injury prevention is especially important for high-risk persons. Wounds exposed to seawater should be washed with soap and water as soon as possible, infected wounds should be seen by a doctor, and clinicians should aggressively monitor these wounds.

### **Diagnosis**

*V. vulnificus* infection is diagnosed by microbiologic culture of wound, by blood cultures, or by stool culture in the case of patients who consumed raw or undercooked seafood.

### **Treatment**

*V. vulnificus* infection is treated with antibiotics. When this infection is suspected, treatment with a combination of a third-generation cephalosporin (e.g., ceftazidime) and doxycycline is recommended. *V. vulnificus* wound infections should be treated with aggressive attention to the wound site; amputation of the affected limb is sometimes necessary.

### **Recovery**

*V. vulnificus* infection is an acute illness, and those who recover should not expect long-term consequences.

Information about *Vibrio* surveillance may be found at [http://www.cdc.gov/foodborneoutbreaks/vibrio\\_sum.htm](http://www.cdc.gov/foodborneoutbreaks/vibrio_sum.htm).

### **Other Vibrios**

The bacterial species *Vibrio cholerae* has many different types, or serogroups. Only two of those types have ever caused epidemic cholerae. Those are serogroups O1 and O139 (O139 is found only in Asia). Even among those serogroups, strains that lack cholera toxin are not going to cause cholera. About 50 cases of these infections are reported to CDC each year.

The other serogroups are known collectively as "non O1, non O139 *V. cholerae*." They can cause diarrheal illness, which can be mild or severe, and in persons with underlying immunocompromised illnesses or chronic liver disease, they can cause sepsis, and death. They also rarely can cause wound infections. It is

***Vibrio vulnificus***

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not contagious. Diarrheal illness is treated with rehydration. Sepsis (or wound infections) requires antibiotic treatment.

Like other *Vibrios*,

- \* they have a natural reservoir in the brackish waters along the coast, particularly warm, subtropical waters.
- \* the most common route of infections is from eating raw or undercooked shellfish harvested from those waters, especially raw oysters.
- \* infections are seasonal, with a peak in the late summer, early fall coinciding with the warmest water temperatures

For more information, visit [www.bt.cdc.gov/disasters](http://www.bt.cdc.gov/disasters),  
or call CDC at 800-CDC-INFO (English and Spanish) or 888-232-6348 (TTY).

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Page 3 of 3