What to Know About Vibrio vulnificus

Vibrio vulnificus is a bacterium that causes food-related illness and wound infections.

Approximately 100 V vulnificus infections are reported each year in the US. However, people with mild infection typically are not tested for V vulnificus, so the actual number of infections is unknown.

In the US, the mortality rate associated with *V vulnificus* infection is approximately 33%, and *V vulnificus* causes more than 95% of seafood-related deaths.

Where Is V vulnificus Found and How Does Infection Occur?

V vulnificus is found in brackish water (a mix of saltwater and fresh water) in warm coastal regions around the world. *V vulnificus* is rarely detected in water colder than 13 °C (55.4 °F), so most infections in the US occur between the months of May and October. Hurricanes, storm surges, and coastal flooding are associated with an increase in *V vulnificus* infections.

People become infected with V vulnificus either by eating raw or undercooked seafood (primarily oysters, less commonly shellfish or other fish) or by having an open wound that is exposed to seawater or seafood products containing V vulnificus.

Signs and Symptoms of V vulnificus Infection

People with food-related *V vulnificus* usually have diarrhea for several days and may have nausea, vomiting, stomach cramping, fever, and chills. Some patients with severe illness develop *V vulnificus* bloodstream infection, which is a life-threatening condition.

V vulnificus wound infections may cause skin redness, warmth, swelling, and pain in an affected area (cellulitis). More severe wound infections from *V vulnificus* can result in infection of muscle and widespread tissue destruction.

Who Is at Risk of Severe V vulnificus Infection?

Individuals at increased risk of developing severe *V vulnificus* infection include those with liver disease (such as cirrhosis), cancer, HIV infection, diabetes, or a certain blood disorder (thalassemia), and those who take immunosuppressants or medications to decrease stomach acid levels.

Diagnosis and Treatment

Diagnosis is made by detecting *V vulnificus* in blood, stool, or wound culture. Individuals with mild symptoms are advised to drink liquids to replace fluid that is lost from diarrhea. Patients with signs or symptoms of more severe infection should be promptly treated with antibiotics and receive close monitoring and supportive care

Author: Kristin Walter, MD, MS

Published Online: February 10, 2023. doi:10.1001/jama.2023.0174

Author Affiliation: Senior Editor, JAMA.

Conflict of Interest Disclosures: None reported.

Sources: Baker-Austin C, Oliver JD. Vibrio vulnificus: new insights into a deadly opportunistic pathogen. *Environ Microbiol*. 2018;20(2):423-430. doi:10.1111/1462-2920.13955

Coerdt KM, Khachemoune A. Vibrio vulnificus: review of mild to life-threatening skin infections. Cutis. 2021;107(2):E12-E17. doi:10.12788/cutis.0183



ROUTES OF INFECTION Eating raw seafood (such as oysters) Exposure of an open wound to brackish water or raw seafood product SIGNS AND SYMPTOMS Diarrhea lasting several days • Cellulitis (redness, swelling, warmth, and pain in or near wound) Nausea and vomiting Formation of blisters Stomach cramps Muscle infection Fever and chills Tissue destruction Blood infection Close-up Vibrio vulnificus infection can progress quickly and become life-threatening.

Vibrio vulnificus is a bacterium found in brackish water (a mix of saltwater

and fresh water) that causes food-related illness and wound infections.

in a hospital. Patients with wound infections may need surgery to remove infected tissue.

Infection Prevention

Food-related *V vulnificus* infection can be prevented by not eating raw or undercooked seafood and by use of gloves or careful handwashing after handling raw shellfish. Patients with open wounds (including recent surgery, skin piercings, or tattoos) should avoid contact with brackish water (no swimming or fishing) and should not handle raw seafood. Wounds or cuts that have been exposed to brackish water or uncooked seafood products should be washed thoroughly with soap and water to decrease the risk of infection.

FOR MORE INFORMATION Centers for Disease Control and Prevention

The JAMA Patient Page is a public service of JAMA. The information and recommendations appearing on this page are appropriate in most instances, but they are not a substitute for medical diagnosis. For specific information concerning your personal medical condition, JAMA suggests that you consult your physician. This page may be downloaded or photocopied noncommercially by physicians and other health care professionals to share with patients. To purchase bulk reprints, email reprints@ iamanetwork.com.