

PROMETHEUS COUNCIL

Epidemic

Cholera

Cholera is the illness caused by a bacterium called *Vibria cholerae*. It infects people's intestines, causing diarrhea, vomiting and leg cramps. The most common cause of cholera is by someone eating food or drinking water that has been contaminated with the bacteria. After a disaster clean water and food supplies are often unavailable. The disease can be spread even further by infected people using already dirty water sources to clean themselves or dispose of waste.

Cholera can be mild or even without symptoms, but a severe case can lead to death without immediate treatment. The diarrhea and vomiting brought on by the infection quickly leaves the body without enough fluid. The following dehydration and shock can kill a person within hours.

To treat Cholera, give infected person fluids immediately after the first symptoms show up, the disease can be completely cured. Simple water won't do, however. A mixture of sugar and certain salts that the body needs must be mixed with clean water and drunk in large amounts. If this method is used as soon as possible, less than 1% of cholera patients die.

When in a country that has cholera outbreak, do the following,

Drink only water that you have boiled or treated with chlorine or iodine. Other safe drinks include tea or coffee made with boiled water and carbonated bottled beverages with no ice.

Eat only food that's been thoroughly cooked and is still hot, or fruit that you've peeled yourself.

Avoid undercooked or raw fish and shellfish.

Avoid raw salads and vegetables.

Avoid food and drinks from street vendors.

The bottom line to avoid cholera infection.

"Boil it, cook it, peel it, or forget it."

Dengue Fever

Dengue [DEN-gee] is a flu-like viral disease spread by the bite of infected mosquitoes. Dengue hemorrhagic fever is a severe, often fatal, complication of dengue. Dengue and dengue hemorrhagic fever are caused by any of the dengue family of viruses. Infection with one virus does not protect a person against infection with another. Dengue occurs in most tropical areas of the world. Most U.S. cases occur in travelers returning from abroad, but the dengue risk is increasing for persons living along the Texas-Mexico border and in other parts of the southern United States. There is no specific treatment for dengue.

Prevention centers on avoiding mosquito bites in areas where dengue occurs or might occur and eliminating breeding sites.

Dengue is spread by the bite of an *Aedes* mosquito. *Aedes* mosquitoes are found in Texas, Florida, and other southern states, and locally acquired dengue has been reported three times since 1980 in southern Texas. The mosquito transmits the disease by biting an infected person and then biting someone else.

Dengue viruses occur in most tropical areas of the world. Dengue is common in Africa, Asia, the Pacific, Australia, and the Americas. It is widespread in the Caribbean basin. Dengue is most common in cities but can be found in rural areas. It is rarely found in mountainous areas above 4,000 feet. The mosquitoes that transmit dengue live among humans and breed in discarded tires, flower pots, old oil drums, and water storage containers close to human dwellings. Unlike the mosquitoes that cause malaria, dengue mosquitoes bite during the day.

Dengue fever usually starts suddenly with a high fever, rash, severe headache, pain behind the eyes, and muscle and joint pain. The severity of the joint pain has given dengue the name "breakbone fever." Nausea, vomiting, and loss of appetite are common. A rash usually appears 3 to 4 days after the start of the fever. The illness can last up to 10 days, but complete recovery can take as long as a month. Older children and adults are usually sicker than young children.

Most dengue infections result in relatively mild illness, but some can progress to dengue hemorrhagic fever. With dengue hemorrhagic fever, the blood vessels start to leak and cause bleeding from the nose, mouth, and gums. Bruising can be a sign of bleeding inside the body. Without prompt treatment, the blood vessels can collapse, causing shock (dengue shock syndrome). Dengue hemorrhagic fever is fatal in about 5 percent of cases, mostly among children and young adults.

The time between the bite of a mosquito carrying dengue virus and the start of symptoms averages 4 to 6 days, with a range of 3 to 14 days. An infected person cannot spread the infection to other persons but can be a source of dengue virus for mosquitoes for about 6 days. Dengue is diagnosed by a blood test.

Anyone who is bitten by an infected mosquito can get dengue fever. Risk factors for dengue hemorrhagic fever include a person's age and immune status, as well as the type of infecting virus. Persons who were previously infected with one or more types of dengue virus are thought to be at greater risk for developing dengue hemorrhagic fever if infected again.

There is no specific treatment for dengue. Persons with dengue fever should rest and drink plenty of fluids. They should be kept away from mosquitoes for the protection of others. Dengue hemorrhagic fever is treated by replacing lost fluids. Some patients need transfusions to control bleeding.

Avoid mosquito bites when traveling in tropical areas:

Use mosquito repellents on skin and clothing.

When you are outside during times that mosquitoes are biting, try to wear long-sleeved shirts and long pants tucked into socks.

Avoid heavily populated residential areas.

When indoors, stay in air-conditioned or screened areas. Use bed nets if sleeping areas are not screened or air-conditioned.

Eliminate mosquito breeding sites around homes. Discard items that can collect rain or run-off water, especially old tires.

Regularly change the water in outdoor bird baths and pet and animal water containers.

Typhoid Fever

Typhoid fever is a life-threatening illness caused by the bacteria *Salmonella typhi*. The illness causes sustained fever, headache, malaise, anorexia, relative bradycardia (slow heart rate), constipation or diarrhea, and nonproductive cough. Anyone can get typhoid fever if they drink water or eat food contaminated with the *S. typhi* bacterium. You can get typhoid fever if you eat food or drink beverages that have been handled by a person who is shedding *S. typhi* or if sewage contaminated with *S. typhi* bacteria gets into the water you use for drinking or washing food. Symptoms can occur within three days up to three months after consumption of contaminated food or water, usually in 1-3 weeks. Typhoid fever is diagnosed by isolating *S. typhi* from blood or stool.

Antibiotics are used to treat typhoid fever. Persons given antibiotics usually begin to feel better in 2 to 3 days, and deaths rarely occur. However, persons who do not get treatment may continue to have fever for weeks or months, and as many as 20% may die from complications of the infection.

What is important to remember about typhoid fever is that, even if your symptoms go away, you may still be carrying *S. typhi*. If so, your illness could return, and

you could pass the disease along to other people. If you are being treated for typhoid fever, it is important to do the following:
Take the prescribed antibiotics for as long as the doctor has asked you to take them.
Wash your hands carefully with soap and water after using the bathroom, and do not prepare or serve food for other people.
Perform stool cultures to ensure that no *S. typhi* bacteria remain in your body.

Two actions can protect you from typhoid fever (if in an area where the disease is common):

- a) avoid risky foods and drinks; and,
- b) get vaccinated against typhoid fever.

If traveling to an area where typhoid fever is common, the following precautions are recommended:

After collecting water, bring it to a rolling boil for one minute before you drink it.

Don't use ice unless it has been boiled water. Avoid popsicles and flavored ices that may have been made with contaminated water.

Eat foods that have been thoroughly cooked and are still hot and steaming.

Avoid raw vegetables and fruits that cannot be peeled.

When you eat raw fruit or vegetables that can be peeled, peel them yourself. (Wash your hands with soap first.) Do not eat the peelings.

A simple rule of thumb is: "Boil it, cook it, peel it, or forget it!"

Both injectable and oral vaccines are available. The vaccines are not 100% effective, and avoiding risky foods and drinks will also help protect you against other illnesses, including cholera, dysentery and hepatitis A.

Dysentery

Dysentery is a diarrhea illness associated with blood in the feces and involving the inflammation of the lining of the large intestines. The inflammation causes stomach pains and diarrhea. Some cases involve vomiting and fever. The bacterium enters the body through the mouth in food or water, and also by human feces and contact with infected people. The diarrhea causes people suffering from dysentery to lose important salts and fluids from the body. This can be fatal if the body dehydrates. This disease also strikes where there is no proper sanitation. Latrines must pits must be four to five feet deep. When they are filled to within one foot of the top they must be filled in, and new ones dug.

Dysentery is also caused by contaminated water. Water must be purified by bring it to a rolling boil for one minute or using filters or chloride of lime or other purification methods. There are two major types, shigellosis, which is caused by one of several types of *Shigella* bacteria and Amoebic dysentery, which is caused by the amoeba *Entamoeba histolytica*.

A patient with shigellosis will often recover without antibiotic treatment. However, treatment by antibiotics usually recommended because the disease is relatively severe, and it is highly contagious. It can be transmitted by fomites, for example clothes, doorknobs, toilet seats, etc. The antibiotics norfloxacin, ampicillin and cotrimoxazole may be used. Amoebic dysentery is transmitted by contaminated water and is well known as a "traveler's dysentery." Liver infection and subsequent amoebic abscesses can occur. It can be treated with metronidazole or relatedazole drugs.

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