

Recreational Water Illnesses In North Carolina

What are recreational water illnesses?

Recreational water illnesses (RWIs) are illnesses that are spread by swallowing, breathing or having contact with contaminated water from swimming pools, spas, lakes, rivers or oceans.

Where can RWIs be found?

RWIs can be spread through use of swimming pools, hot tubs, oceans, lakes, rivers and decorative water fountains.

How are RWIs spread?

When people are ill with diarrhea, their stools can contain millions of germs. Therefore, swimming when ill with diarrhea can easily contaminate large pools or waterparks. In addition, lakes, rivers and the ocean can be contaminated by sewage spills, animal waste and water runoff following rainfall. Some common germs also can live for long periods of time in salt water. If someone swallows water that has been contaminated with feces, he or she may become sick. Many of these diarrhea-causing germs do not have to be swallowed in large amounts to cause illness. Many other RWIs (skin, ear, eye, respiratory, neurologic, wound and other infections) are caused by germs that live naturally in the environment.



What are the most common RWIs in North Carolina?

Two reportable RWIs of concern in North Carolina are caused by *Cryptosporidium* and *Vibrio vulnificus* and other marine vibrios.

Vibrio vulnificus and other marine vibrios are naturally-occurring bacteria found in the ocean and warm coastal waters such as bays, estuaries and rivers near the ocean. Persons who have liver disease, diabetes or are immuno-compromised are particularly at risk for infection and may die from this disease. Although the risk of infection is low, once it occurs, persons must be diagnosed early and treated appropriately. People may become infected by *Vibrio vulnificus* and other marine vibrios through injuries such as a puncture from fin fish or shellfish, exposure of open wounds to coastal waters, or by eating raw or improperly cooked shellfish, especially oysters. Symptoms of infected wounds include pain, swelling and redness that may quickly spread or blister. Nausea, vomiting, diarrhea and stomach pain may occur 12 and 72 hours after eating vibrio-contaminated shellfish.

Cryptosporidium is a chlorine-resistant parasite, primarily associated with treated recreational water venues such as pools, hot tubs and water parks. *Cryptosporidium* is found in soil, food, water or surfaces that have been contaminated with infected human or animal feces. Other places it also can be found include lakes, rivers, springs, ponds or streams. The most common symptom of cryptosporidiosis is watery diarrhea. Other symptoms include stomach cramps or pain, dehydration, nausea, vomiting, fever and weight loss. Some people with cryptosporidiosis will have no symptoms at all. Symptoms generally begin between two and 10 days, or seven days on average, after becoming infected. In persons with healthy immune systems, symptoms usually last about one to two weeks. The symptoms may go in cycles in which a person may seem to get better for a few days, then feel worse again before the illness ends.

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People also have an increased risk of becoming sick from swimming in natural waters in both coastal and inland areas. The risk is greater in areas downstream from sewage treatment facilities and in all areas after storm events. Storm events are associated with increased run-off from cities as well as forests, farms and pasture lands, which can be sources of *Cryptosporidium*, fecal bacteria and viruses known to cause human illness.

Who is most likely to get sick from RWIs?

Children, pregnant women and people with compromised immune systems can suffer from more severe illness if infected. People with compromised immune systems should be aware that recreational water might be contaminated with human or animal waste that contains *Cryptosporidium*, bacteria and viruses, which can be life-threatening to persons with weakened immune systems. People with compromised immune systems should consult their health care providers before participating in behaviors that place them at risk for illness.

What about stormwater outfalls? Can I get sick from swimming near them?

Some pipes discharge onto the beach sand, creating a pond or stream. Some parents permit their children to play in these puddles or ponds because they think the children are safer away from the waves and current, but this is not a good idea. These ponds are different from natural tidal pools in that they contain all the pollutants of stormwater without the dilutional effect of the ocean. Allowing children to play in them, particularly small children who may swallow water, exposes them to an increased risk of getting sick. The most common illnesses associated with swimming in contaminated water are gastrointestinal diseases with symptoms such as diarrhea and vomiting. Ear, nose, throat, skin and respiratory infections are also commonly associated with swimming in contaminated water.

What can I do to prevent RWIs?

1. Do not swim or allow children to swim if you or they have diarrhea.
2. Do not swallow pool water or get pool water in your mouth.
3. Shower before swimming (children too!).
4. Wash your hands after using the toilet or changing diapers.
5. Children should wear tight-fitting swim diapers, and diapers should be checked before entering the water.
6. Take children on bathroom breaks frequently.
7. Change children's diapers often in a bathroom, not at poolside.

Where can I get more information?

The Centers for Disease Control and Prevention has a great resource on healthy swimming, recreational water illnesses and prevention tips. This can be found online at: www.cdc.gov/healthyswimming/index.htm. The N.C. Division of Environmental Health also has some interesting facts online at www.deh.enr.state.nc.us/ehs/pti_healthyswimming.htm. If you have questions about recreational water illnesses or other disease-related issues, please contact the General Communicable Disease Branch in the N.C. Division of Public Health at (919) 733-3419 or your local health department.

