

Health Matters

Water Quality and Swimming or Fishing In Anne Arundel County Rivers and Creeks

Under State of Maryland regulations, the Anne Arundel County Department of Health conducts water quality sampling at community bathing beaches along area rivers and creeks from Memorial Day to Labor Day. The water bodies are tested for levels of enterococci bacteria. Below are some of the most commonly asked questions about the Department of Health's water quality sampling and risks associated with natural water bodies.

What are enterococci?

Enterococci are bacteria found in the intestine of all warm-blooded animals including humans. Because the bacteria are always present in animal and human waste and are easy to detect, they are used as indicators of water quality conditions. Enterococci are in food, water and soils but cannot become airborne. The U.S. Environmental Protection Agency (EPA) recommends using enterococci levels to measure fecal contamination in recreational water.

What does monitoring for enterococci in water samples show?

Enterococci results are most useful for watching long-term trends in water quality. Results are collected over several weeks and then evaluated. Since many factors can affect readings, single sample results may be misleading. Rainwater runoff, waterfowl and tidal action can cause high results that nature will fix in a day or two. If over time, sample results remain high, the Department will look for possible sources of pollution such as human sewage.

What causes the Department of Health to issue an advisory recommending against swimming and water sports in a certain area?

Swimming in natural water bodies always poses some risk. If spills, leaks or other problems are known to have allowed human waste to enter the water, the Department advises people not to swim there. Because enterococci have many sources, the sample results are evaluated with other information about the waterway. The Department of Health makes every effort to identify the source or sources of bacteria. When the source is human waste, the Department requires corrective action.

When will the Department of Health lift an advisory for a closed area?

An area may be reopened after results are back to an acceptable level for at least two consecutive days. The acceptable level is determined by the State, U.S. Environmental Protection Agency and the Anne Arundel County Department of Health. For bodies of water that the Department samples weekly and biweekly during the peak swimming season, the acceptable level is 104 MPN (most probable number of colonies of organisms) or fewer organisms per 100 milliliters of water. For areas that are sampled monthly, the acceptable level is 158 MPN per 100 milliliters. During the summer months, once an area has been sampled five times or more, the acceptable level is 35 MPN per 100 milliliters.

What kinds of health risks are associated with swimming and other direct water contact?

Natural bodies of water can contain bacteria, viruses or other harmful microorganisms. Common problems associated with swimming in contaminated water are ear, eye and skin infections. Diarrhea and other water-related illnesses can occur from accidentally swallowing contaminated water. Disease-causing microorganisms, such as *Mycobacterium marinum*, can also enter the body through cuts and scrapes.

If you have symptoms of a gastrointestinal, skin, ear or other infection, consult your doctor for immediate treatment. Let your doctor know that you have had contact or suspected contact with contaminated water.

What are *Mycobacterium marinum* and *Vibrio vulnificus*?

Mycobacterium marinum is a bacterium most commonly found in fresh or saltwater that may cause infections in fish and people. It is a natural part of the ecosystem of the Chesapeake Bay and its tributaries and also in other water bodies worldwide. In humans it can cause skin and joint infections. Water-related infections can also be caused by *Vibrio vulnificus*, a bacterium found in salt water.

What precautions should I take before swimming in area creeks and rivers?

After rainfall, all County beaches are under a no swimming/no direct water contact advisory for 48 hours due to predicted elevated bacterial levels. Avoid swimming until at least 48 hours or until the water clears. Look for storm drains along the beach. Don't swim near them. Look for trash and other signs of pollution such as oil slicks or scum on the water. These kinds of pollutants may indicate the presence of disease causing microorganisms that may also have been washed into the water. If the Department of Health has issued an advisory, it is a warning to swimmers and others using the water that enterococci results have exceeded the acceptable level. Don't swim if you have an ear infection, perforated eardrum, open cuts, skin lesions or immunity problems.

What should I do after coming in contact with natural bodies of water?

Wash well with soap and warm water.

How can I prevent illnesses when crabbing and fishing?

Assure proper bandaging and care of wounds or abrasions. Wear sturdy gloves if you will have contact with water and sharp objects (fish fins and scales, boating equipment, etc.). Keep hands as clean as you can. Waterless hand cleansers kill many germs and are easier on the skin than constant hand washing.

Is it OK to eat crabs and fish from an area that is closed to swimming?

Because cooking kills bacteria, it's generally okay to eat crabs and fish taken from these areas as long as they are handled properly. Fish should be kept in a cool place or on ice and then cooked thoroughly. Live crabs should be thoroughly cooked. Cooked fish and crabs should not come back into contact with any surfaces or containers where they were kept uncooked.

How can I find information about my favorite river or creek?

From Memorial Day to Labor Day, the Anne Arundel County Department of Health provides water sampling results at www.aahealth.org and on a 24-hour information line (410-222-7999). Both the Web site and phone line provide reports on emergency closings of local waterways year-round. The Department of Health offers e-mail alerts of recreational waterway advisories and closings. To sign up for these alerts, visit www.aahealth.org.

For more information, contact:

Recreational Water Quality Program

Anne Arundel County Department of Health

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(410) 222-7241, Monday-Friday, 8 a.m. – 2 p.m.