BEACH CLOSINGS - FREQUENTLY ASKED QUESTIONS

Source: Bureau of Environmental Health

Q: **Why is beach water sampled?**
A: The state and federal beaches acts (both enacted in 2000) required that public and semi-public beaches be monitored for bacterial contamination in the water during the bathing season. Massachusetts promulgated regulatory revisions to address these requirements in 2001. Private beaches are not subject to these regulations.

Q: **What is a public beach?**
A: A public bathing beach means any bathing beach open to the general public, whether or not any entry fee is charged, that permits access to bathing waters.

Q: **What is a semi-public beach?**
A: A semi-public beach means any bathing beach that has common access and/or common use by a group or organization, which can be a bathing beach associated with a hotel, condominium or neighborhood association, summer camps, or a beach club.

Q: **Who monitors the beach water quality?**
A: Local boards of health, the Barnstable County Department of Health and the Environment, and the Massachusetts Department of Conservation and Recreation conduct the vast majority of beach water sampling in Massachusetts. Most marine beach samples collected at public beaches are analyzed at Massachusetts Department of Public Health (MDPH) contracted laboratories, and the cost of analysis is covered by MDPH. Under the beaches acts, MDPH is responsible for ensuring the regulations are adhered to by beach operators and local boards of health and providing technical assistance where needed.

Q: **How often is the water tested?**
A: Depending on the beach, the water can be tested anywhere from every day to once per month. The testing frequency depends on how likely the beach is to have water quality issues. Infrequently used beaches or beaches that historically have had very few, if any, water quality issues are tested less often, while high-use or historically problematic beaches are tested more often.

Q: **What kind of bacteria is the beach water tested for?**
A: The water at marine beaches is tested for the presence of Enterococci. Enterococci are a group of bacterial species within the Streptococcus genus, some of which (e.g. Streptococcus faecalis) are typically found in human and animal intestines and are therefore present in sewage. These tests are also referred to as indicator organisms.

Q: **What are indicator organisms?**
A: Indicator organisms are used to predict the presence of pathogenic, or disease-causing, organisms associated with fecal contamination. While in most cases the indicator organisms themselves are not pathogenic, they have similar life cycles and

die-off rates to pathogens and are also found along with pathogens in human and animal waste.

Q: **What are the standards for beach water quality in marine water?**
A: In marine waters, the accepted level of Enterococci for a single sample is 104 colony forming units per 100 milliliters (cfu/100 ml) of bathing water or below.

Q: **What happens if levels exceed 104 cfu/100 ml?**
A: Any sample that comes back with a count greater than 104 cfu/100 ml is called an exceedance; the beach must then be posted.

Q: **What are the standards for beach water quality in fresh water?**
A: In fresh water, the accepted level of Enterococci for a single sample is 61 cfu/100 ml or below. The freshwater limit is stricter because elevated concentrations of bacteria within a smaller volume of water (such as a lake versus the open ocean) can pose higher risks of illness. Freshwater beaches can also be tested for E. coli instead of Enterococci. The accepted level of E. coli for a single sample is 235 cfu/100 ml or below.

Q: **Are beach postings triggered in any other way?**
A: MDPH also developed a standard that derives a geometric mean from the last 5 testing results at a beach, not taken during a storm event. The geometric mean may indicate that sample levels are consistently high enough over time to post the beach in order to protect the public from possible swimming-related illness. In marine water, the geometric mean standard for Enterococci is 35 cfu/100 ml. In fresh water, the geometric mean standard for E. coli is 126 cfu/100 ml and the geometric mean standard for Enterococci is 33 cfu/100 ml.

Q: **What does it mean for a beach to be posted?**
A: If a beach is posted, it means recreational use of the water is prohibited. You can still go to the beach to take a walk or enjoy any recreational activities that do not involve contact with the water. The beach will remain posted until the bacterial levels have been shown by laboratory analysis to have dropped back down into the desired range

Q: **What type of illness can you get from contact with water contaminated with bacteria?**
A: Swimming in polluted water can cause gastrointestinal symptoms such as nausea, vomiting, diarrhea, and abdominal pain, respiratory symptoms like sore throat, cough, runny nose, and sneezing, eye and ear symptoms including irritation, earache, and itchiness, dermatological symptoms like skin rash and itching, and flu-like symptoms such as fever and chills. Most of these symptoms are minor most of the time but can occasionally be more serious, especially in sensitive populations (e.g. immuno-compromised children and elderly).

Q: **How can I reduce my risk of illness from swimming?**
A: There are a few things you can do to reduce your risk of illness from swimming. You should find out from your local health department if the beach you want to go to is

monitored regularly and posted for closures. You are less likely to be exposed to polluted water at beaches that are monitored regularly and posted for health hazards. Because bacterial levels tend to rise due to runoff after heavy rains, avoiding swimming after heavy rain events would also be prudent. Do not swim near trash and other obvious sources of pollution, such as drainage pipes.

Q: **What are the sources of bacteria in the water?**
A: Bacteria may be present in the water due to a variety of sources including but not limited to sewage treatment plant outfalls, illegal sewage hookups, leaking septic tanks, boats dumping sewage directly into the water, and combined sewer overflows. Rain is often a contributing factor to beach water pollution. As rainwater washes over land, it can carry bacteria to the beach.

Q: **What about animal wastes on the beach?**
A: Animal waste, such as from dogs or birds, can get into the water and negatively affect water quality at beaches. The bacteria in dog and bird waste can elevate bacterial levels which can lead to beach postings. Properly cleaning up after your pet can lessen the likelihood of your pet's waste contaminating the beach water. Similarly, refraining from feeding birds at beaches should help reduce potential bacterial contamination.

Q: **What can I do to enhance water quality at beaches I use?**
A: Everyone can take steps to help reduce contamination and pollution, both at home and at the beach. At home, regularly maintain your septic system. Use natural substances like compost to fertilize gardens and lawns. If you must use fertilizers or pesticides, read the label and use as little as possible. Throw trash away in proper containers. Don't pour anything in storm drains; they are meant only for rainwater and may empty out at your favorite swimming spot. At the beach, throw away your trash and pet waste using public trash receptacles or take it home with you. Pick up trash left by others. Use public restrooms. Dispose of boat sewage in onshore sanitary facilities instead of dumping it into the water. Use walkways instead of walking across dunes; this will help reduce erosion and preserve vegetation that aids in filtering out pollutants from runoff before they reach the beach.

Q: **How can I find out if the beach is open or has been posted?**
A: For public marine beaches, go to ://www.mass.gov/dph/topics/beaches.htm, click on "Marine and Freshwater Beach Testing in Massachusetts", choose "Beach Water Quality Locator", and select the region, community, and beach you are interested in to find out its current status. For freshwater beaches, you can call your local Board of Health.

Q: **Where can I get more information?**
A: Contact your local Board of Health or access the MDPH beaches website at ://www.mass.gov/dph/topics/beaches.htm. The EPA's website has additional information at ://www.epa.gov/beaches/index.html.