

Expert: North Carolina's beaches cleaner than most

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North Carolina's beaches are cleaner than most, but swimming should be avoided immediately after a major rainfall, says UNC water quality expert Rachel Noble, PhD.

North Carolina's beach-goers generally enjoy clean water, but the ocean can become polluted after a heavy rainfall. Rachel Noble, a University of North Carolina at Chapel Hill water-quality expert, gives the straight poop on staying healthy at the beach.

When it comes to clean beaches, North Carolina is waves ahead of some other states.

The water quality at North Carolina's beaches is better than that of most of the mid-Atlantic states. In fact, the state's eight million annual coastal

visitors enjoy some of the cleanest waters in the country, said Rachel Noble, PhD, an associate professor of marine sciences at the University of North Carolina at Chapel Hill. She is also an associate professor of environmental sciences and engineering in the UNC Gillings School of Global Public Health.

At least until it rains.

During major storms, rainwater can pollute the ocean after it rushes across roads and sidewalks, acquiring chemical contaminants and microbes. As the rain washes over parking lots at beach-access points, it can pick up feces from the seabirds that congregate there. And because eastern North Carolina is generally flat, standing water can mix with sewage treatment systems. That dirty water can make the ocean temporarily unhealthy for swimming, Noble said.

Noble said swimmers should avoid the ocean for 48 to 72 hours after a major rainfall, which she defined as one of half an inch or more.

"If there's standing water still in the street, that is a good indication that you could be swimming in stormwater," she said.

To improve safety for swimmers, Noble developed rapid water-quality tests for *E. coli* and *Enterococcus*, two types of bacteria that are used to test water safety. Her tests provides results in two hours or less, much faster than the 18 to 24 hours for methods currently approved by the [Environmental Protection Agency](#).

Eventually, Noble said she hopes those tests can be used to quickly alert swimmers of unhealthy water conditions.

"We're aiming to actually provide a water-quality result the same day people are swimming," she said. Noble said the EPA may approve such

tests by 2012.

In the meantime, swimming remains an excellent form of exercise for people of all ages, said Matt Stout, the aquatics director for the UNC Wellness Center at Meadowmont.

Swimming is the third-most-popular sport in the United States, according to the Centers for Disease Control and Prevention. The CDC estimates that there are nine million swimming pools in the United States. Twenty-three states border the ocean.

Unlike running, which jars the joints, swimming is gentle on the body, Stout said.

"It's low impact or no impact," he said. As a result, young children, 80-year-olds and many people with injuries or disabilities can exercise in the water.

"That's one of the beautiful things about water," he said. "It's for everyone."

HEALTH TIPS FOR SWIMMERS

- On the beach, make sure children do not play in stormwater, which is the rainfall runoff that often contains contaminants. Children can be attracted to that water because it is usually warmer than the ocean. To avoid stormwater, watch for streams of water coming across the beach from the land. "Children are often more susceptible to illness stemming from stormwater contamination than adults are," Noble said. "It's definitely not a safe place for children to play."
- To search North Carolina's data on recreational water pollution and beach closings, visit [www.deh.enr.state.nc.us/shelf ...](http://www.deh.enr.state.nc.us/shelf...)

[ring/RWQweb/home.htm](http://phys.org/ring/RWQweb/home.htm)

- To keep germs out of the water, shower before swimming. Avoid swallowing the water. Don't get in if you have diarrhea. Allow small children to take frequent bathroom breaks.
- You can prepare your children for a lifetime of water safety by taking them in the water at a young age. Stout advises parents to introduce their children to the pool as infants. "The younger that a kid gets in the [water](#), the more comfortable they'll be," he says. "They're not going to have that fear."
- Don't forget to avoid getting too much sun, which can lead to skin cancer. In the U.S., about 45,000 people are diagnosed each year with melanoma, a type of skin cancer, and 8,000 die from it, according to the Centers for Disease Control and Prevention (CDC). To reduce your risk, wear protective clothing and stay indoors during the brightest part of the day.

Provided by University of North Carolina at Chapel Hill School of Medicine

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