

Beachgoers beware: Stomach bugs lurk in sand

Kids who burrow in the sand prone to catching icky infections

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Beach fun for most kids includes burrowing in the sand and being buried by friends and siblings. Parents figure that as long as the kids are within sight, they're safe. But a new study shows that some pretty nasty bugs may lurk in those glistening, gleaming grains.

The study, published in the *American Journal of Epidemiology*, found that digging in the sand raised the risk of diarrhea by 44 percent in young children — those under the age of 11. And kids who were buried in the sand were 27 percent more likely to develop diarrhea than those who weren't.

Bonnie Shimp, who takes her infant grandson and a friend's 6-year-old on outings to the Jersey shore, was sorry to hear that beach sand isn't as benign as she thought. Shimp has many fond childhood memories of digging in the sand and being buried by her brothers.

"This makes you feel like you need to tell your child, 'Don't dig in the sand, just walk on it and go into the water,'" says the 53-year-old teacher from Pennsville, N.J. "Now, I would definitely think twice before letting them play in the sand."

For the new study, researchers interviewed more than 27,000 people who visited seven beaches around the country between 2003 and 2007.

People who took part in the study were asked about their contact and their children's contact with sand on the day they visited the beach and then, 10 to 12 days later, they were phoned up and asked about any health symptoms that had developed in family members since the visit.

A total of 307, or 6 percent, of the kids developed diarrhea. All of the kids got better on their own and none ended up in a doctor's office, Heaney says. But even relatively mild cases of diarrhea can spoil the fun for a kid and put a damper on the family's vacation.

The beaches included in the study were all within seven miles of a sewage treatment plant. But that doesn't necessarily mean that beaches far from such plants are safe, says the study's lead author Chris Heaney, a researcher at the University of North Carolina at Chapel Hill. The study was conducted in partnership with the Environmental Protection Agency.

What lies beneath

Other studies that have examined the bacteria content of sand at a variety of beaches that were nowhere near a treatment plant have found high levels of E. coli and Enterococcus bacteria in the top 8 inches. In fact, levels can be almost 40 times those found in the water at the same beaches, Heaney says.

The contamination may come from storm sewer runoff or from the feces left by domestic and wild animals. Once the germs are there, the sand provides a very friendly environment for the bugs to replicate, Heaney says.

When the researchers looked at their data by location, they found that some beaches were far worse than others. Huntington Beach, which is on the shores of Lake Erie in Bay Village, Ohio, had no increase in the risk of diarrhea, while Fairhope Beach, which is on the shore of Mobile Bay in Fairhope, Ala., had an increase of almost 200 percent among those who dug in the sand.

Karen Colucci is assuming that's why she's never had any problems with sand-related diarrhea. She goes to a big, spacious and very uncrowded New Jersey beach called Brigantine Beach. "I've been bringing my son Alex to play in the sand since he was 3 months old," says the 50-year-old account executive from Malaga, N.J. "And we've never had any problems. Of course, I always carry a bottle of hand sanitizer with me and I tell my son he needs to use it any time he eats or puts his hands in his mouth."

Colucci is doing exactly the right thing, experts say.

Purse those lips in the surf

The only way you can get a gastrointestinal illness is to ingest the germs, says Dr. Philip Kazlow, director of pediatric clinical gastroenterology at NewYork-Presbyterian Morgan Stanley Children's Hospital. And that can happen only if you swallow contaminated sand or water — or if you put your hands in your mouth after playing in the sand or water without washing them.

"A tremendous amount of gastrointestinal illness could be wiped out if people just cleaned their hands with sanitizer," Kazlow says. "And one other thing: many of us just go in the water to wash our hands. If the water is contaminated, then we may be giving ourselves a double load of germs."

When it comes to the youngest kids, this study shows that parents may need to watch a little more closely to make sure their children are not eating the sand, Kaslow says. "The younger ones are more susceptible to infection," he adds. "So with infants and toddlers it's really important to have close supervision and not let them run wild on the beach."

Ultimately, you need realize that there are germs everywhere, says Dr. Peter Katona, an associate clinical professor of infectious diseases clinical medicine at the David Geffen School of Medicine at the University of California, Los Angeles. And the pathogens aren't always where you expect them to be. Door knobs, for example, have been shown to have more germs than toilet seats, Katona says.

The bottom line is that there weren't a huge number of cases of gastrointestinal illness and most of these can be prevented if parents use good hygiene.

"But, I think it's good that there are studies like this out there to make people aware that they're not completely safe," Katona added. "You just have to decide whether you would rather stay away from the beach or just wash your hands before you eat."

Linda Carroll is a health and science writer living in New Jersey. Her work has appeared in The New York Times, Newsday, Health magazine and SmartMoney.

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