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Swimming with Bacteria

How safe is the water?

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“Swim with the dolphins” at Florida vacation hotspots. Or fly to the Bahamas and “swim with the pigs.” Expect to shell out about \$300 to play with captive dolphins. Doggie-paddling with the pigs entails a boat ride to a deserted island some 90 miles from Nassau. Or visit a Louisiana barrier island and “swim with the enterococci.”

Wetlands, not pristine sandy beaches, define the interface of land and the Gulf of Mexico for most of Louisiana, but we do have some 30 miles of beaches, washed by gulf waves, including Grand Isle, an isolated hunk of Jefferson Parish. Grand Isle, like human-infested beaches all over the world, plays host to summertime enterococci invasions.

Selfies of “swims with enterococci” are unlikely to make it to Facebook. If it were not for regular monitoring of beach waters, the booty call would be akin to anonymous sex. Enterococci are bacteria and your colon is packed with them. Most of the time these free-loaders are good neighbors that keep normal colonic flora in balance. When medical conditions or antibiotics upset this microbiologic apple cart, good bacteria can turn bad, causing various body organ infections ranging from minor to deadly.

A wide array of microbes lurking in natural waters can potentially cause gastroenteritis. Viruses including the notorious norovirus cause most bouts of infectious gastroenteritis. Bacteria and parasites come in second and third. In rivers, lakes and seas, the concentration of the bad bugs is normally too low to be detected by routine tests. This is especially true for *Vibrio vulnificus*, a dangerous microbe unrelated to sewerage that stalks persons with diabetes, liver disease and others immune impairments.

Like other coastal states, Louisiana receives federal funding to monitor water quality off recreational beaches. Every April to October, the Louisiana Department of Health collects waist-deep water samples from some 24 coastal beach sites popular with swimmers from Grand Isle to near the Texas border. During the 2016 swim season, the state issued some 80 advisories based on high bacterial counts.

Decades ago fecal coliform counts defined the standard for water quality testing. Coliforms are mostly harmless bacteria that normally inhabit colons of warm-blooded beasts, including humans. While high fecal coliform counts typically indicate sewage contaminations, these high counts do not reliably correlate with risks of becoming ill with gastroenteritis. Counting just *E. coli* in

fresh water or enterococci from salt water supposedly gives better data.

According to the state website the bacteria found in sewage polluted recreational waters can cause “disease, infections or rashes.” The state updates beach water quality weekly during the swim season at <http://new.dhh.louisiana.gov/index.cfm/page/288>. Warning signs are also posted at sampling sites.

“There is a warning sign around the Grand Isle State Park. I think they keep it up most of the year. Never heard of anyone paying attention to it,” said Brian Casey, a popular Galatoire’s waiter who spends most off days fishing on our state’s only inhabited barrier island.

And folks may not pay attention to it for good reasons. High enterococci counts are most likely to predict human illness in waters along shoreline developments with defined discharges of untreated sewage. Discharge from storm drains associated with heavy rainfalls fill the water with enterococci, but the relationship between the bacterial counts and reported cases of gastroenteritis is less definitive.

Regardless of whether bacteria counts are related to human disease, continued collection of water quality data makes good sense. It calls attention to community sewerage systems with infrastructure needs. Any effort to reduce human contaminants from our recreational waters is a vote for conservation and our future on this slice of the planet we call Louisiana.

Bacteria in Lake Pontchartrain

Testing recreational waters for bacteria associated with sewerage contamination preceded the federally funded beach testing presently in force. The state health department tested water from Lake Pontchartrain beaches going back decades. The threshold at which the state recommended closure of recreational waters for swimming was redefined at a lower bacterial count many years ago. This change in numbers officially closed Lake Pontchartrain around Orleans Parish for swimming all summer long.

“Why is the city telling folks not to swim in the Lake,” asked Dr. James Treadway in the late 1980s. Dr. Treadway was an esteemed pediatrician with decades of clinical experience under his belt. “My patients grew up swimming in Lake Pontchartrain. Most still do. I don’t remember a single child with any gastrointestinal illness from swimming in that lake.”

Thirty years later not much has changed. “I have never had any children with GI infections I thought were caused by swimming in river or lake water,” said Dr. Jimmy Treadway, grandson of the first Treadway and the third in a family line of beloved pediatricians.

“Every now and then I see a child with a rash attributed to swimming. Usually some sort of skin friction is involved. And ear infections are more common with summer swimmers regardless of where they swim. I almost never see otitis externa during the winter, it’s a summer thing.”

The Lake Pontchartrain Basin Foundation led efforts to cease shell-dredging and reduce urban runoff. It has done a yeoman’s job to improve the health of Lake Pontchartrain. Updated lake water testing results are on their website SaveOurLake.org.

The real danger in Lake Pontchartrain is death by drowning, not infections by microbes. Those miles of seawalls with open waters are irresistible for an emerging crop of swimmers every summer. Our city needs to reopen our lake’s beaches. We need designated swimming areas with life guards on duty. The increased well-being from interacting with our natural recreational waters far exceed any adverse health risks due to bacteria.