

## Boaters' risk of illness on Chicago River similar to other waterways

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Chicago area residents have wondered for years about the health risks of using the Chicago River for recreation. According to a University of Illinois at Chicago study, canoeing, kayaking, rowing, boating and fishing on the Chicago River pose the same risk of gastrointestinal illness as performing these same activities on other local waters -- a risk that turns out to be higher than that intended for swimmers at Lake Michigan beaches.

The study is the first in the U.S. to evaluate health and environmental factors associated with these "limited-contact" water recreation activities. Federal regulations protect people who swim at beaches, but national water-quality standards do not exist for those who row, paddle, boat or fish on waterways not approved for swimming.

Since the Chicago River is mostly wastewater discharge, "it was a surprise that the occurrence of illness was similar" for limited-contact users of the river and other local waterways, says Dr. Samuel Dorevitch, associate professor of environmental and occupational health sciences at the UIC School of Public Health and principal investigator of the study.

The study was funded by the Metropolitan Water Reclamation District of Greater Chicago, a regional taxing body responsible for treating wastewater. The results are published online today in [Environmental Health Perspectives](#).

Results of the Chicago Health, Environmental Exposure, and Recreation

Study, or CHEERS, found that on average, about 14 people per thousand who use the Chicago River developed [gastrointestinal illness](#) attributable to using the river, similar to the rate among limited-contact users of other waters in the study, which included the Fox River, Des Plaines River, and several small inland lakes such as Tampier Lake, Busse Woods Lake, Skokie Lagoons, Crystal Lake, and Lake Michigan beaches.

The U.S. EPA criteria for water quality at swimming beaches allows a level of bacteria based on a targeted risk of approximately eight people per thousand getting sick after swimming. The CHEERS study found that people participating in limited-contact water recreation exceeded this level of risk -- not only on the Chicago River, but on other area waters -- but Dorevitch is not sure why.

The comparable risk levels may be "because people are more likely to capsize in cleaner waters and ingest more water than they do at the Chicago River, where people are generally aware of water quality problems on the river and are careful not to fall in the water or to swallow water," he said.

"The fact that 14 people per thousand, instead of eight per thousand, on average, are getting sick due to their use of the water is concerning," Dorevitch said. "It means that we may have a higher rate of illness at inland waters than would be acceptable at coastal waters. This raises the question, should the EPA be doing more to protect people in those inland waters?"

The CHEERS study did not track illness rates among swimmers at beaches.

The researchers enrolled more than 11,000 people in the study. One group used the Chicago River system for [recreational activities](#), another

group did the same recreational activities on waters approved for swimming, and a third group participated in non-water recreational activities such as jogging, cycling, or walking. The study was conducted in the summers of 2007, 2008 and 2009.

The water recreation participants were interviewed before and immediately after activities on the [water](#). They were followed over three weeks to see if they developed gastrointestinal, skin, eye, ear or respiratory conditions.

Users of the Chicago River system -- which receives wastewater from treatment plants that use an activated sludge process, but no disinfectant such as chlorination -- did not have gastrointestinal illnesses more severe than that experienced by users of waterways where swimming is permitted -- a finding Dorevitch called unexpected. However, users of the Chicago River were at higher risk for developing eye symptoms than people who used other rivers or inland lakes or beaches.

Provided by University of Illinois at Chicago

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