

Was it the chicken salad or the swim?

January 26 2009

A new study finds swimming, having a private well or septic system, and other factors not involving food consumption were major risk factors for bacterial intestinal infections not occurring in outbreaks.

Outbreaks linked to food, such as the current *Salmonella* outbreak involving peanut butter that has sickened more than 500 people in 43 states, account for only about 10 percent of intestinal infections, which are medically termed as enteric infections. The new study, in the February 15 issue of *The Journal of Infectious Diseases*, now available online, suggests that methods for controlling bacterial enteric outbreaks may not be completely relevant to controlling the other 90 percent or so that occur sporadically.

In a USDA-sponsored, two-year study of children and adolescents in three Washington state counties, the investigators, led by Donna M. Denno, MD, MPH, of the University of Washington, and Phillip I. Tarr, MD, of Washington University, St. Louis, interviewed 296 patients, aged 19 years or less, who were infected at some point between 2003 and 2005 and who were matched with 580 uninfected controls. Laboratory tests identified the bacteria responsible for infection as *Campylobacter* in 151 cases, *Salmonella* in 86 cases, *Escherichia coli* O157 in 39 cases, and *Shigella* in 20 cases.

Analysis of the data suggested that non-food exposures pose risks of sporadic bacterial enteric infection that are comparable in magnitude to those of food exposures. In particular, one surprise was a strong association with swimming and other forms of recreational water

exposure for all four types of infection. Another surprising finding was an association with private well water (*Salmonella*) and septic system (*Salmonella* and *E. coli* O157) exposures. Hand washing practices and daycare attendance, however, were not associated with an increased risk of infection, also a surprise. Finally, farm owners exposed to farm animals were at risk for *Campylobacter* infections.

Among food-related exposures, suboptimal cleaning practices in the kitchen following preparation of raw meat was an important risk factor for *Campylobacter* infections, and *Campylobacter* and *E. coli* infections were strongly associated with eating foods from fast food and table service restaurants, respectively. Conversely, consumption of vegetables in general and organic vegetables in particular lowered the risk of *Salmonella* infections, although eating lettuce or spinach from sealed retail plastic bags increased the risk.

The investigators found no increased risk of *Salmonella* infection associated with chicken or egg consumption, perhaps because of the limited prevalence of certain *Salmonella* serotypes in the study area. They also found no association between *E. coli* O157 infections and ground beef consumption; they speculated that this might relate to industry and consumer precautions taken in the wake of highly publicized outbreaks, including one in Washington State in the early 1990s.

In an accompanying editorial, state epidemiologist Timothy F. Jones, MD, of the Tennessee Department of Health in Nashville pointed out that much of what is known about bacterial enteric infections derives from studies of outbreaks rather than of sporadically occurring infections. The findings by Dr. Tarr and colleagues, he noted, identify a number of new risk factors for the latter, such as eating out, a known risk factor for outbreaks and now also shown to be a risk factor for sporadic disease. "The epidemiology of bacterial enteric infections in

children," he said, "is a moving target, and continued vigilance is necessary to ensure that preventive interventions keep pace with evolving risk factors for this high-risk population."

Fast Facts

- Most bacterial enteric infections occur in children, and up to 90 percent of cases occur sporadically rather than in outbreaks.
- This study found that non-food-borne risk factors are at least as important in sporadic bacterial enteric infections as are food-borne risk factors.
- Water exposures and food preparation practices appear to be important modes of transmission for bacterial enteric infections.

Source: Infectious Diseases Society of America

Citation: Was it the chicken salad or the swim? (2009, January 26) retrieved 24 April 2024 from <https://medicalxpress.com/news/2009-01-chicken-salad.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.