

SALMONELLOSIS: Notes about the Disease

Salmonellosis is one of the most common bacterial foodborne diseases of humans in North Carolina and elsewhere and usually comes from an animal source, most commonly pork, poultry, eggs, or beef. One estimate is that combined direct and indirect health care costs attributable to salmonellosis in the United States exceed a billion dollars each year.¹

The nomenclature for the *Salmonella* genus has been evolving for several decades and still remains unsettled; the medical literature is thus sometimes confusing. Currently, the taxonomy system used by the Centers for Disease Control and Prevention (and generally agreed upon in the US) denotes two species: *Salmonella enterica* (with 2,433 serotypes) and *S. bongori* (with 20 serotypes).² Unlike species names, serotype (or serovar) names are capitalized and not italicized. Many serotypes have distinct animal host patterns, although much overlap occurs. For example, reptiles are commonly chronically colonized with certain serotypes, and NC even has a rule (10A NCAC 41A .0302) prohibiting the sale of pet turtles for this reason.

The use of antibiotics to treat non-typhoid salmonellosis can be a tricky business. First, uncomplicated salmonella gastroenteritis almost always resolves without antibiotics in a few days with fluid and electrolyte replacement. Most studies show that antibiotic treatment not only fails to improve the clinical picture but might actually increase the risk of clinical relapse and also prolong the carrier state. Notwithstanding, some groups (e.g., newborns, the elderly, HIV-infected individuals) are of sufficiently higher risk of severe salmonellosis that they should receive appropriate antibiotic therapy if infected. Also, antibiotics are indicated in the management of anyone with salmonellosis and a sustained high fever or extraintestinal salmonellosis. Another aspect of this topic is that antibiotic resistance of *Salmonella* isolates is an increasing problem and relates both to treatment of human salmonellosis and the widescale use of antibiotics in livestock production.

The prevention of salmonellosis requires an educated public attuned to hand washing and the proper cooking of eggs and meats. Agricultural interests are beginning to take an interest in controlling this and other foodborne pathogens through such measures as reducing cross-contamination on the farm and in the slaughterhouse and radiation pasteurization. Much remains to be done.

1. "Salmonellosis, NIAID Fact Sheet," National Institute of Allergy and Infectious Diseases, 2006, www.niaid.nih.gov/factsheets/Salmonellosis.htm.
2. FW Brenner, et al., "Salmonella Nomenclature," *J Clin Microbiol* 38 (2000): 2465-7, <http://jcm.asm.org/cgi/reprint/38/7/2465>.