

Salmonella and Reptiles: Veterinary Guidelines (revised April 2008)

Teresa Bradley Bay 1, DVM
Frederick J. Angulo 2, DVM, PhD

¹Association of Reptilian and Amphibian Veterinarians
Belton Animal Clinic and Exotic Care Center
Animal Urgent Care of Cass County
1308 N. Scott Ave.
Belton Mo 64012

²Centers for Disease Control and Prevention -- Mailstop A-38
Foodborne and Diarrheal Diseases Branch
National Center for Infectious Diseases
1600 Clifton Road
Atlanta GA 30333

Veterinarians who treat reptiles should be aware of the following information and recommendations concerning reptiles and *Salmonella* spp.

Salmonella spp. carriage appears to be highly prevalent in reptiles. Reptiles should be considered to be non-clinical carriers of *Salmonella* spp. The organism is intermittently or continuously shed in their feces and, if ingested by humans, may result in a potentially serious illness.

Veterinarians treating reptiles play an important role in informing reptile owning clients about salmonellosis and advising them on precautions for reducing the risk of acquiring *Salmonella* infection from reptiles.

Because *Salmonella* spp. may be shed intermittently in the feces of reptiles, it is not possible to determine whether any individual living reptile is free of *Salmonella* spp. Bacterial culture of fecal specimens from reptiles will not detect all carriers.

Attempt to treat reptiles with antibiotics to eliminate *Salmonella* spp. from their intestinal tract have not proven to be effective. Doing so increases the risk of emergence of antimicrobial-resistant *Salmonella* strains, which, if transmitted to humans, would complicate treatment of the infected person. Attempt to raise "Salmonella-free" reptiles have been equally unsuccessful.

With this information in mind, the following guidelines have been developed by the Association of Reptilian and Amphibian Veterinarians (ARAV), in cooperation with the Centers for Disease Control and Prevention (CDC), to help disseminate information to veterinarians and to the general public on how to minimize risks of exposure to *Salmonella* spp. and to help prevent development of reptile-associated salmonellosis in humans.

1. Veterinarians who treat reptiles should educate their clients who own reptiles about *Salmonella* spp. and provide information on the recommended precautions for reducing the risk of transmission of *Salmonella* spp. from reptiles to humans. This is especially important in households with infants and children under 5 years of age or with immunocompromised persons. The Centers for Disease Control and Prevention (CDC) recommends that households with children less than 5 years of age not own reptiles. An ARAV-sponsored [handout](#) follows on the next page and can be copied as necessary.
2. All veterinarians, staff and clients who handle reptiles should follow recommended precautions for reducing the risk of transmitting *Salmonella* spp. from reptiles to humans. These precautions are also included in the ARAV client education handout and are based on good personal hygiene and not allowing reptiles to soil the owners' domicile.
3. All reptiles should be presumed to be carrying *Salmonella* spp. in their intestinal tract and to be continuously or intermittently shedding it in their feces. Bacterial culture of fecal specimens from reptiles to determine *Salmonella* infection status is discouraged. If veterinarians are called upon to assist health officials in determining the cause of salmonellosis in a person, bacterial culture of combined fecal and cloacal specimens from reptiles with which that person has had direct or indirect contact are recommended. Serotyping of *Salmonella* isolates is usually needed to help discern the source of the *Salmonella* in human infections.
4. It is not recommended to treat healthy reptiles with antimicrobial agents with the intention of eliminating *Salmonella* spp. from the intestinal tract. Clients who request treatment of healthy reptiles for *Salmonella* spp. should be discouraged from such treatment and cautioned about the possibility of causing the emergence of antimicrobial-resistant *Salmonella* strains that might pose a greater health risk to humans.

CDC. Turtle- Associated Salmonellosis in Humans- United States, 2006-2007. MMWR 2007; 56:649-52 (also at <http://www.cdc.gov/MMWR/preview/mmwrhtml/mm5626a1.htm>)

CDC. Reptile-Associated Salmonellosis --- Selected States, 1998—2002. MMWR 2003; 52: 1206-09.

Friedman CR, Torigian C, Shillam PJ, et al. An outbreak of salmonellosis among children attending a reptile exhibit at a zoo. J Pediatr 1998; 132:802--7.

This handout was developed by the Association of Reptilian and Amphibian Veterinarians in collaboration with the Centers for Disease Control and Prevention and is intended for informational purposes only; please seek advice from your physician and your reptile's veterinarian if questions or problems occur. (Revised 11 April 08 Beth Bicknese DVM, MPVM)