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Salmonella and Reptiles

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Reptiles are well known reservoirs for a variety of unusual *Salmonella* serotypes. The rarity of some of these serotypes makes it easy to trace human infections back to reptiles. In 1975 the Food and Drug Administration banned the sale of turtles less than four inches in length to stem an epidemic of turtle associated salmonellosis in children. Children were unable to cram turtles over four inches in length in their mouths so larger turtles were deemed less of a risk. What many don't realize is that *Salmonella* is just as common, if not more common, in snakes, lizards and crocodylians. *Salmonella* can survive for up to 30 months in reptilian feces and is easily spread through bath tubs, clothing, hands or carpet. Salmonellosis in infants has frequently been traced back to reptiles and is particularly dangerous. In many instances the infant had no direct contact with the reptile. *Salmonella* exposure in most people causes little to no symptoms yet in some people it can be more serious with symptoms ranging from abdominal cramps, profuse bloody diarrhea, fever, headache, and lack of appetite, to vomiting, muscle pain, sepsis and even death.

All reptiles should be considered potential asymptomatic carriers of *Salmonella*. This means that reptiles may carry *Salmonella* in their gastrointestinal tract (and shed it in their poop) without any symptoms of disease. Asymptomatic carriage rates for iguanas in California have been found to be 60 to 80%. Negative fecal culture, even if performed on several consecutive fecal samples, does not mean the reptile is free from *Salmonella*. *Salmonella* may be shed intermittently or under periods of stress. Repeated studies have shown that treatment of healthy lizards and turtles for *Salmonella*, with appropriate antibiotics, did not eliminate *Salmonella* and may actually prolong shedding. For instance, iguanas treated for *Salmonella* reverted to a culture positive state within 3 to 5 months after treatment. Furthermore, treatment may increase antibiotic resistance. Given these facts routine screening of reptiles for *Salmonella* is not recommended. Rather, assume that *Salmonella* is present in reptiles and observe the following recommendations for prevention of *Salmonella* transmission from reptiles to humans offered by the Centers for Disease Control and Prevention (with some additional comments).

1) Persons at increased risk for infection or serious complications of salmonellosis (e.g., pregnant women, children less than five years old and immunocompromised persons such as persons with AIDS) should avoid contact with reptiles and their cages.

2) Reptiles should not be kept in child-care centers and may not be appropriate pets in households in which persons at increased risk for infection reside.

3) Veterinary hospitals and pet stores should provide information to owners and potential purchasers of reptiles about the increased risk of acquiring *Salmonella* from reptiles.

4) Veterinary and pet stores workers should advise reptile owners to always to wash their hands with warm soapy water (preferably iodine based soap such as Betadyne or Prepodyne) after handling reptiles or reptile cages and not eat or put anything in their mouth while working with reptiles. Free roam of the house and kissing reptiles should be discouraged.

5) To prevent contamination of food preparation areas (e.g. kitchens) and other selected sites, reptiles should be kept out of these areas. In particular, kitchens or infant bathing areas should not be used to bathe reptiles or to wash reptile dishes or cages. Discard soiled material into a toilet or trash can. Clean water bowls in a sink not used for bathing or drinking.

Keep in mind one is much more likely to be exposed to *Salmonella* from raw or inadequately cooked poultry or eggs. Most people that are exposed to *Salmonella* do not develop illness. With a little common sense and good hygiene you should avoid salmonellosis altogether.