

## ***Reptiles and Salmonella***

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*Abstract* – Reptiles are known to have Salmonella bacteria in their digestive tract, which can cause salmonellosis in humans. However, birds and mammals, including humans also frequently have these bacteria present. Salmonella is most frequently contracted when people eat improperly prepared foods. Only 3-5% of all cases of Salmonella poisoning are linked to reptiles. Of these, over 95% are linked to green iguanas and red-eared slider turtles that are kept as pets. Contact with other species of reptiles rarely leads to salmonellosis. The risk of contracting salmonellosis from a reptile is minimal and virtually eliminated when a few simple hygiene practices are put in place: people working with reptiles should wash their hands with soap and water after contact with the animals and maintain a clean environment for the reptiles.

### **Introduction**

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The fact that reptiles can carry Salmonella is well known and well documented. This fact cannot be disputed; however, the fact that chicken, fish, eggs and meat regularly found in our refrigerators and freezers can carry Salmonella is also well documented and cannot be disputed. In fact, Salmonella bacteria are commonly found in the intestinal tract of many different species of animals including humans. The issue at hand is the risk of contracting Salmonella from any of these sources. This document will address the issue in light of concerns raised regarding having reptiles in the classroom.

### **History**

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Many cases of Salmonella contracted from reptiles have been reported and will continue to be reported. If each case is examined, poor hygiene is the primary reason Salmonella was contracted. As a matter of fact, this is true with virtually all cases of Salmonella regardless of the source. The most common species implicated in cases of infection from reptiles is the green iguana followed by the red-eared slider turtle. These two species of reptiles account for over 95% of all reported cases of reptile related salmonellosis. However, statistics also show

that reptile related salmonellosis only accounts for between 3-5% of the incidents of Salmonella poisoning. Therefore, 95-97% of all incidents of Salmonella are traced to sources other than reptiles.

### **How is Salmonella contracted?**

Salmonella is found in meat, poultry, eggs, milk, and even vegetables. Humans contract salmonellosis by coming into contact with the Salmonella bacteria and ingesting it. It can also be contracted through open cuts. Symptoms of infection include diarrhea, abdominal cramps, and fever.

### **Reptiles and Salmonella**

Salmonella is found in the digestive tract of most animals including reptiles. The route of infection may be from direct contact with the animal's feces or indirectly from an animal's skin that has feces on it. Traces of fecal matter in an animal's enclosure can also be a source of infection. However, reptiles do not exude Salmonella bacteria from their skin nor do they have a tendency to wallow in their feces.

### **What is the real risk?**

First, those that are at highest risk are those under the age of 5, the elderly, and people with suppressed immune systems, as in the case of people with HIV/AIDS. Second, to contract Salmonella, a person must come in contact with the bacteria and ingest enough of it to cause illness or have it taken up in their bloodstream through a fresh open wound. Third, only 3-5% of all cases of salmonellosis are contracted from reptiles. In other words, 95-97% of the reported incidents of Salmonella are traced to sources other than reptiles. These statistics alone demonstrate that the risk of contracting Salmonella from reptiles is small. Looking more closely reveals that over 95% of all reptile related cases of salmonellosis are traced to green iguanas and red-eared slider turtles. That is, 95% from only 3-5% of all cases of Salmonella. Thus, the risks of contracting Salmonella from a reptile other than a green iguana or a red-eared slider turtle are minute to say the least.

## **Simple Steps to Reduce Risk of Infection**

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Following a few simple guidelines will virtually eliminate the risk of contracting Salmonella from reptiles:

- 1 Wash hands with soap and water after working with reptiles.
- 2 Do not come in direct contact with the feces of a reptile. Use a scoop or gloves to remove feces from the reptile's enclosure.
- 3 Keep the reptile's environment clean. Feces should be removed upon discovery.
- 4 Do not allow children less than 5 years of age to handle reptiles or clean reptile enclosures unsupervised.
- 5 Do not allow reptiles near areas where food preparation or consumption occurs.

## **Summary**

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The risk of contracting Salmonella from reptiles is real; however, the risk is minute. Iguanas and red-eared slider turtles are the most common source of Salmonella and poor hygiene is the cause of virtually all cases of Salmonella regardless of the source. Simple hygiene practices such as avoiding direct contact with feces, keeping the reptile enclosure clean, and washing hands after working with reptiles will virtually eliminate the risk of contracting Salmonella from reptiles. Education is the key to reducing risks rather than elimination of the source. If elimination of all risks is the goal, then we should start with the poultry, eggs, and meat sold in virtually all supermarkets. After all, these foods account for over 95% of reported cases of Salmonella infection.

## Sources

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### Literature:

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MADER, DOUGLAS R., M.S., D.V.M. 1996. Reptile Medicine and Surgery. W.B. Saunders Company, Philadelphia, PA.

### Web:

CENTER FOR DISEASE CONTROL WEBSITE:

[www.cdc.gov/ncidod/disease/submenu/sub\\_Salmonella.htm](http://www.cdc.gov/ncidod/disease/submenu/sub_Salmonella.htm)

REPTILE-ASSOCIATED SALMONELLOSIS INFORMATION PAGE:

[www.xmission.com/~gastown/herpmed/salm.htm](http://www.xmission.com/~gastown/herpmed/salm.htm)

MELISSA KAPLAN REPTILE WEBSITE. [www.sonic.net/~melissk/aaSalmonella.htm](http://www.sonic.net/~melissk/aaSalmonella.htm)