



Questions and Answers about Poultry and *Salmonella*

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Owning backyard chickens and other poultry can be a rewarding and worthwhile hobby, but it does come with risks. Children, the elderly, and other immune-compromised individuals have a greater risk of becoming ill from handling live poultry or items in the area where the poultry live and roam. Something as simple as handling baby birds, either displayed at stores or when they are received via mail order, can result in illness. This is often caused by a *Salmonella* infection (Fig. 1). Therefore, it is important to take preventative steps to remain healthy if you own or are around live poultry or if you consume eggs.



Figure 1: *Salmonella* pathogen

Q: How do people get *Salmonella* infections from live poultry?

A: *Salmonella* is a bacterium that lives in the digestive tract of poultry. Therefore, it is found

in their droppings but it is also found on their bodies (feathers, feet, and beaks). This is true even if the birds appear healthy and clean. These bacteria can also live on cages, coops, feed and water dishes, hay, plants, and soil in the area where the birds live and roam. Furthermore, these bacteria can then transfer to a person's hands, shoes, and clothes as a result of handling and caring for the birds.

People become infected with *Salmonella* bacteria when they put their hands or equipment that has been in contact with live poultry in or around their mouth. Due to the fact that children's immune systems are still developing and that the elderly may have weakened immune systems, these groups are more at risk of infection. Young children are more likely to put their fingers or pacifiers and other items into their mouths which makes the likelihood of transmission greater. Touching a bird is not required to become infected with *Salmonella*. Just having contact with items, like coops or water dishes, in the area where poultry live can result in infection. Bacteria on your hands can spread easily to other people or surfaces. It is important for anyone who has touched poultry or been in close proximity to poultry to wash their hands with soap and water.

Q: How can I reduce the chance of *Salmonella* infection?

A: Follow these simple rules:

1. Always wash your hands with soap and water right after touching live poultry or anything in the area where they live and roam.
 - a. Adults should supervise handwashing by young children to make sure that they wash their hands thoroughly.
 - b. Use hand sanitizer as an alternative if soap and water are not readily available.
2. Don't let live poultry inside the house or near areas where food and drink is prepared, served, or stored.
3. Practice good biosecurity. For example, set aside a specific pair of shoes to wear while taking care of poultry. Leave those shoes outside of the house.
4. Do not let children younger than 5 years, adults older than 65, or people with weakened immune systems—from conditions such as cancer treatment, HIV/AIDS, or organ transplants—handle or touch chicks, ducklings, or other live poultry (Fig. 2).
5. Never eat or drink in an area where the birds live or roam.
6. Do not kiss your birds, snuggle them, or allow them to touch your mouth.
7. Do not clean any equipment used in raising or caring for poultry inside your home.



Figure 2: Children have a higher risk of contracting *Salmonella* and should not handle chicks or other live poultry.

8. Purchase poultry from hatcheries that participate in the U.S. Department of Agriculture National Poultry Improvement Plan (USDA-NPIP). These hatcheries participate in the U.S. Voluntary *Salmonella* Monitoring Program. Roadside vendors, Craigslist, Farmers Markets, etc. do not participate in this program. The goal of this program is to reduce the incidence of *Salmonella* in poultry sold by these hatcheries. However, these birds can still carry *Salmonella*, and all previously stated rules should still be followed.



Figure 3: Both the inside and outside of eggs may be contaminated with *Salmonella*.

Q: Is it just the live bird and their housing that I need to be concerned about?

A: No. The eggs poultry produce can also be contaminated with *Salmonella* (Fig. 3). Poultry may carry bacteria such as *Salmonella* that can contaminate the inside of eggs before the shells are formed. Eggs can also become contaminated from the droppings of poultry. Therefore, the shell of the egg may become contaminated with *Salmonella* during the laying process or once the eggs are laid via contamination from the feed or bedding.

Q: How can I prevent *Salmonella* infection via the eggs my poultry produce?

- A:** by following these safe handling tips:
1. Always wash your hands with soap and water after handling eggs, chickens, or anything in their environment.
 2. Maintain a clean coop. Cleaning the coop, floor, nests, and perches on a regular basis will help to keep eggs clean.

3. Collect eggs often. Eggs that spend a significant amount of time in the nest can become dirty or break. Cracked eggs should be thrown away.
4. Don't wash eggs, because cold water can pull bacteria into the egg.
5. Refrigerate eggs after collection.
6. Cook eggs thoroughly. Raw and undercooked eggs contain *Salmonella* bacteria that can make you sick.

Q: What are the signs and symptoms of *Salmonella* infection?

A: Symptoms of *Salmonella* infection include: diarrhea, vomiting, fever, and abdominal cramps. Occasionally, a *Salmonella* infection can become life threatening, at which point a visit to a hospital is necessary. Children younger than 5 years, adults older than 65, and people with weakened immune systems—including pregnant women—are more likely to have a serious illness from *Salmonella*. CDC's *Salmonella* website (www.cdc.gov/salmonella) has more information about *Salmonella* infections. If you suspect you or your child has a *Salmonella* infection, please contact your healthcare provider immediately.

***Salmonella* Facts:**

1. Foodborne pathogens are difficult to control in poultry because:
 - Many foodborne pathogens are considered “commensal” organisms in poultry. They don't harm their host, so the chicken's immune system doesn't attempt to remove these microbes.
2. Medications are not available to eradicate bacteria in poultry.
3. *Salmonella* vaccination of poultry is promising, but not extensively used due to problems with selecting the correct strain, conflicts with testing methods, and proper administration of the product.
4. Foodborne pathogens are ubiquitous in our environment and are easily spread by: boots, tires, floor mats, pets, wildlife, mice, rats, insects, wild birds, and contaminated feed-stuffs among other items.
5. The reproductive tract and digestive tracts terminate at a common structure that is called the “cloaca”. The locations of these two systems can result in fecal contamination.
6. In addition to fecal contamination, the egg could be contaminated within the oviduct.
7. It is estimated that only 1 egg out of every 10,000 is contaminated with *Salmonella*
 - There are approximately 2,400 strains of *Salmonella* known with only a small percentage known to cause illness.