

Department of Animal Science

BACKYARD CHICKENS AND SALMONELLA

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Since the beginning of the COVID-19 pandemic, an increasing number of Americans in urban, suburban and rural areas have started raising backyard chickens. While there are many benefits to enjoy from backyard chickens and other poultry, it's important for those with backyard poultry to take precautions against possible *Salmonella* exposure. It is common for chickens, ducks and other poultry to have *Salmonella* in their droppings and on their bodies (feathers, feet and beaks). The Centers for Disease Control and Prevention (CDC) report that in the latest ongoing *Salmonella* outbreak, there have been almost 900 reported illnesses, over 150 hospitalizations and two deaths. Backyard poultry keepers must be aware that backyard poultry, such as chickens and ducks, can carry *Salmonella* germs even though they may appear healthy and clean. While these germs rarely make the poultry sick, they can cause serious illness when passed to people. These germs can easily spread to anything or anyone in the areas where the poultry live or access. Adults and children can become sick from touching backyard poultry or anything in their environment and then touching their mouth or food and then swallowing *Salmonella* germs.

Salmonella and Backyard Chickens

The recent increase in *Salmonella* cases serves as a reminder to backyard flock keepers that people should take biosecurity and sanitation precautions after visiting their chicken pen, cleaning the coop, or even handling the birds, eggs or meat. Some outbreaks are worse than others, but it is not unusual to have hundreds of infections every year. This often happens when there is a breakdown in hygienic and sanitation practices. Many individuals, particularly those new to backyard chicken keeping and unfamiliar with poultry, may not take the simple steps necessary to prevent *Salmonella* exposure.

Backyard chicken popularity

Backyard chicken popularity was increasing before the pandemic started but has exploded since the pandemic began. The number of *Salmonella* outbreaks in recent years indicates that there is a continuing **need for public education regarding avoiding exposure and practicing basic hygiene**. It's simple to look up the reported numbers in any *Salmonella* outbreak but the true actual number of sick individuals is much more difficult to determine. This number is likely

much higher than reported because many people recover without medical attention and these numbers are never reported.

Salmonella is extremely **common in poultry** and most chickens, ducks and turkeys carry some form of the more than 2,000 various types of *Salmonella*. So much so that, in general, if you have poultry, you should assume that *Salmonella* is also present. Some *Salmonella* strains that affect people and cause human illness don't make the chickens sick. As a result, seemingly healthy birds can carry *Salmonella* and shed it into the environment. Therefore, if you touch a contaminated bird or egg or come in contact with feces or anything else in the birds' environment and then touch your mouth or touch the food you eat, you can become sick. Proper hygiene is critical to staying healthy.

What can backyard flock owners do?

The CDC has developed guidelines to help keep families and flocks healthy:

Take proper sanitation precautions.

- Do not kiss or snuggle backyard poultry, eat or drink anything around birds, or touch your mouth after handling or being around birds.
- Always wash your hands with soap and water immediately after handling backyard poultry or anything in the area where they live or have access.
- Adults should supervise activities and handwashing of young children.
- Children younger than 5 years of age should not be allowed to touch chicks, ducklings or other backyard poultry. Young children are more likely to get sick from germs like *Salmonella*.
- If soap and water are not readily available, keep hand sanitizer near the chicken coop.
- Be aware that children younger than 5, people 65 years of age or older, and people with weakened immune systems are at greater risk for serious illness from diseases spread between poultry and people.
- Handle eggs carefully:
 - Collect eggs often. Eggs that sit in the nest for long periods can become dirty or cracked, increasing the disease threat.
 - Throw away cracked eggs. Germs on the shell can more easily enter the egg through a cracked shell.
 - Rub off dirt on eggs with a brush or a cloth. Don't wash eggs because cold water can pull germs into the egg through pores in the shell.
 - Refrigerate eggs to keep them fresh and slow the growth of germs.
 - Cook eggs until both the yolk and white are firm and cook egg dishes to an internal temperature of 160 F to kill all germs.

Maintain clean coops.

- Clean poultry equipment and supplies outside. This includes all cages, feed and water containers, tools, and anything used to care for the poultry.
- Consider booties or set aside a dedicated pair of shoes/boots to wear while taking care of poultry and keep those shoes/boots outside.

Keep poultry outside.

- Do not bring backyard poultry inside the house, particularly the kitchen.

- Do not allow backyard poultry access to areas where food or drink is prepared, served or stored.
- Do not bring baby chicks, ducklings, poultts and other backyard poultry to schools, childcare centers or nursing homes.

Seek medical attention if you have any of these symptoms:

- Diarrhea and a fever higher than 102 F
- Diarrhea for more than three days that is not improving
- Bloody diarrhea
- So much vomiting that you can't keep liquids down
- Dehydration

Symptoms that can include fever, stomach cramps and diarrhea typically emerge six hours to six days after exposure. Illness typically lasts up to a week, and most people recover without treatment. However, *Salmonella* infections can spread to the intestine and bloodstream in severe cases that can require hospitalization. State testing of backyard flocks is not common or prevalent. Therefore, the focus at home must be on hygiene and exposure prevention to keep everyone safe.

Chick Chain Programs

Many state Extension services offer chick chain programs to students enrolled in 4-H. Tennessee is one of the states that offers a chick chain program to local 4-H youth through county Extension offices. Chicks can be ordered from specific mail order hatcheries around the country and are delivered to 4-H'ers through the local post office. These hatcheries also ship chicks to feed stores and co-ops around the country. Clientele should verify that hatcheries used to source chicks participate in the National Poultry Improvement Program (NPIP). The NPIP program, among other things, encourages *Salmonella* screening of breeder birds that supply eggs to these hatcheries. The challenge lies in the detection of *Salmonella*. There are **numerous types of *Salmonella***, and all types can be vertically and horizontally transmitted in birds. In addition, adult birds shed *Salmonella* intermittently. As part of NPIP certification, a percentage of adult birds in each breeder flock that supplies NPIP certified hatcheries are tested annually. In addition, NPIP certified hatcheries have a protocol for environmental sampling of swabs, fluff and hatch papers to look for *Salmonella*. Most chicks will not develop clinical symptoms but may start to shed bacteria after a stressful event, such as being shipped through the mail and introduced into a new environment.

Therefore, because *Salmonella* is a common occurrence in poultry and because backyard flock keeping and chick chain programs are quite popular across Tennessee, University of Tennessee Extension and the Tennessee Department of Agriculture want to remind everyone of the **importance of good biosecurity, sanitation and hygiene** when working around or handling any type of backyard poultry. Despite the common presence of *Salmonella* in the environment, clientele with backyard chicken flocks or birds associated with a 4-H chick chain or other poultry project can greatly reduce the risk of infection by taking simple precautions. Be aware that common ordinary activities such as petting or holding chickens, gathering farm fresh eggs, and simply working in areas frequented by the chickens, such as their pen or coop, can expose people to *Salmonella*. Toddlers and small children should not be allowed to pet or handle baby chicks or larger birds because they may then put their fingers in their mouth and potentially become

infected. Older children and adults should immediately wash their hands after handling their birds, gathering eggs, or working in or around areas where the birds are present.

Simple precautions like removing clothes and shoes worn in the coop/pen or while handling birds before entering the home can lessen the chance of exposure. Sound biosecurity and good hygiene at the coop can also help protect backyard flocks. Producers should not share tools or other equipment with other producers. If sharing is necessary, make sure the tools and equipment are cleaned first, and then sanitized, before leaving your property and are again cleaned, and then sanitized, before returning home. Also understand that visiting friends and neighbors with backyard poultry comes with the risk that you may track disease back to your flock unless adequate precautions are taken. Do not purchase birds from a flea market, want ads, or any unknown source because you do not know where these birds have been or what they may have been exposed to. There is no history on the health status of these birds. You have no way of knowing if these birds have been vaccinated and, if so, what they were vaccinated for and when. Always **purchase birds from a known reputable source, preferably one that participates in the NPIP program**. NPIP certification ensures birds are from healthy breeder flocks that are tested for severe diseases.

Keep in mind, however, that **NPIP certification does not guarantee birds are completely free of *Salmonella***. Therefore, rely on common sense, good biosecurity and proper hygiene to minimize the disease threat. Backyard poultry can offer many benefits. Those benefits are more enjoyable when you're healthy so take the necessary precautions to keep you, your family and your chickens safe.



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