

How Does Salmonella Get Inside Eggs?

LiveScience.com remy Melina, Life's Little Mysteries Staff Writer

livescience.com – Wed Aug 18, 3:45 pm ET

Although the average egg looks innocent enough, it can harbor dangerous foodborne bacteria called Salmonella. It's these bacteria that led to the ongoing nationwide recall of Wright Country Eggs. But how do the bacteria get in there?

The bacteria, *Salmonella enteritidis* (also referred to as *S. enteritidis*), can invade an egg in several ways. One way is by the contamination of egg shells with fecal matter. The bacteria are present in the intestines and feces of infected humans and animals, including chickens, and can be passed to the eggs when chickens sit on them.

Stringent cleaning and inspecting procedures of shells were implemented in the 1970s to decrease this form of contamination, according to the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS).

However, outbreaks of salmonellosis (an infection caused by *Salmonella* bacteria) still happen because *Salmonella* also silently infects the ovaries of healthy-looking hens, contaminating the eggs inside the chicken before the shells are even formed, according to FSIS. To curb this form of contamination, the egg industry regularly tests hens for the ovarian bacteria.

Only a small number of hens in the United States seem to be infected with *Salmonella* at any given time, according to the Centers for Disease Control and Prevention. The CDC also assures that an infected hen can lay many normal eggs while only occasionally laying an egg that's contaminated.

So how can consumers tell if an egg contains salmonella? There is no way for grocery shoppers to tell if an egg has been contaminated, according to Rob Gravani, a professor of food science at the Cornell University. In fact, *Salmonella* affect chicken of every quality, and there is no valid scientific evidence that shows that poultry products labeled "Kosher," "free-range," "organic," or "natural" have more or less of the bacteria, according to FSIS.

"The best thing for consumers to do is to pay attention to the brand of eggs that are being recalled, and to return any eggs that they've purchased of that brand to the store," Gravani told *Life's Little Mysteries*.

Health officials also recommend not serving undercooked eggs, since thorough cooking kills the bacteria, according to the CDC. Because both the outside and inside of contaminated eggs appear to be normal, even if an egg seems "safe" to

eat with a runny-style yoke, it is always best to err on the side of caution and eat only well-cooked eggs. The FSIS recommends that egg dishes be heated up to an internal temperature of at least 160 degrees Fahrenheit (71 degrees Celsius).

Typically, a person with salmonella poisoning develops a fever, abdominal cramps and diarrhea approximately 12 to 72 hours after consuming the contaminated food. The illness usually lasts from four to seven days, and most people do not need antibiotics in order to recover.

However, the elderly, infants, and those with impaired immune systems may be the most susceptible to becoming seriously ill as a result of salmonellosis. In these patients, the infection may spread from the intestines to the blood stream, and then to other parts of the body. This can lead to death unless the person is promptly treated with antibiotics, according to the CDC.