



Treatment and Prevention Methods of *Salmonella* Infection

James Lachlan*

Department of Microbiology and Immunology, Tulane University School of Medicine, Louisiana, USA

DESCRIPTION

Salmonella infection is a common bacterial disease that affects the intestinal tract. *Salmonella* normally present in the intestines of animals and humans and are excreted in the faeces. Humans are most commonly infected through contaminated water or food.

Some people with *Salmonella* may not have the symptoms. Most people develop diarrhea, fever, and stomach (abdominal) cramps within 8 hours to 72 hours after exposure. Most healthy people recover within a few days to a week without special treatment.

In some cases, diarrhea can lead to severe dehydration, requiring immediate medical attention. Life-threatening complications can also occur if the infection spreads beyond the intestine. Traveling to countries without clean drinking water and proper sanitation increases the risk of *Salmonella* infection.

Salmonella infection is usually caused by eating raw or undercooked meat, poultry, eggs or egg products, or by consuming unpasteurized milk). People with *Salmonella* often think they have the stomach flu.

Possible signs and symptoms of *Salmonella* infection include:

- Diarrhea
- Stomach (abdominal) cramps
- Fever
- Nausea
- Vomiting
- Chills
- Headache
- Blood in the stool

Signs and symptoms of *Salmonella* infection usually last from a few days to a week. Diarrhea can last up to 10 days in him, but it may take months before the bowels return to normal bowel habits.

Salmonella is most commonly transmitted by undercooking or improperly cooking food. For example:

- Eating uncooked or undercooked meat, poultry, seafood or eggs.

- Eating contaminated fruits and vegetables.
- Drinking contaminated water or unpasteurized milk.
- Not washing your hands while preparing food and eating.

Salmonella can also be contracted from infected animals or people. Almost any animal can be infected with *Salmonella* or carry on their hair, feathers, scales and skin. This includes:

- Amphibians (frogs and toads).
- Reptiles (turtles, lizards and snakes).
- Birds (chicken, ducks, turkey and wild birds).
- Farm animals (cows, goats, sheep and pigs).
- Pets (dogs, cats, birds and small animals).

Salmonella spp are intracellular pathogens whose specific serotypes cause disease. Most infections are caused by consuming food contaminated with animal or human faeces, for example, by catering workers in commercial restaurants. *Salmonella* serotypes can be divided into two main groups: Typhoid and non-typhoid. Non-typhoid fever serovars are zoonotic and can be transmitted from animals to humans and from humans to humans. They usually just enter the gastrointestinal tract and cause salmonellosis, a condition that can be resolved without antibiotics. However, in sub-Saharan Africa, non-typhoid *Salmonella* can invade and cause paratyphoid fever, requiring prompt antibiotic treatment. Typhoid fever serotypes can only be transmitted from person to person and can cause food poisoning, typhoid fever and paratyphoid fever. Typhoid fever is caused by *Salmonella* entering the bloodstream (typhoid type) or spreading throughout the body, invading organs and secreting endotoxins (septic type). This can lead to life-threatening hypovolemic and septic shock, requiring intensive care, including antibiotics.

Salmonella was first visualized in 1880 by Karl Eberth in Peyer's patches and spleens of typhoid patients. Four years later, Georg Theodor Gavyk successfully cultivated the pathogen in pure culture. *Salmonella* can be rapidly identified using Matrix-mediated Laser Desorption Ionization Time-of-Flight Mass spectrometry (MALDI-TOF Ms) technology, which is based on

Correspondence to: James Lachlan, Department of Microbiology and Immunology, Tulane University School of Medicine, Louisiana, USA, E-mail: lachlanjames012@gmail.com

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the principle of ionization of specific protein profiles of microbial cells. *Salmonella* can be easily identified by comparing these profiles to reference spectra.