

Salmonella Infections

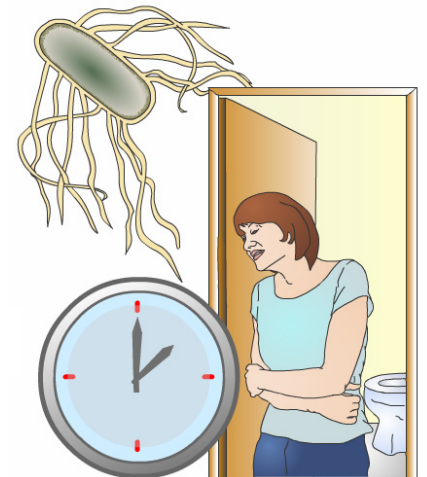
Introduction

Salmonella is the name of a group of bacteria. It is one the most common causes of foodborne illness. Salmonella happens in raw poultry, eggs, beef, and sometimes on unwashed fruits and vegetables. Symptoms include fever, diarrhea, abdominal cramps, and headache. Symptoms usually last 5 to 7 days. If salmonella gets into the bloodstream, it can be serious, or even life threatening.

This reference summary discusses the diagnosis and treatment of salmonella infections. Information about what causes these infections and what you can do to treat salmonella is also included.

Salmonella Infections

Salmonellosis is an infection with bacteria called salmonella. Most people infected with salmonella develop diarrhea, fever, and abdominal cramps 12 to 72 hours after infection. The illness usually lasts 5 to 7 days. Treatment may be as simple as fluid replacement. But in some people, the diarrhea may be so severe that the patient needs to be hospitalized. Diarrhea can cause dehydration, which is an extreme lack of fluid in the body.



In severe cases, the salmonella infection may spread from the intestines to the blood stream, and then to other body sites. This can cause death unless the person is treated promptly with antibiotics. The elderly, infants, and people with weak immune systems are more likely to have a severe illness. Immunocompromised people, or people with weak immune systems, include people with HIV/AIDS, type 1 diabetes, and celiac disease. Other diseases and health conditions can also cause a weakened immune system.

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Salmonella is one of the most common foodborne diseases. The disease is found worldwide, but most cases are reported in North America and Europe. Salmonella may happen in small, contained outbreaks in the general population or in large outbreaks in hospitals, restaurants, or places housing children or the elderly.

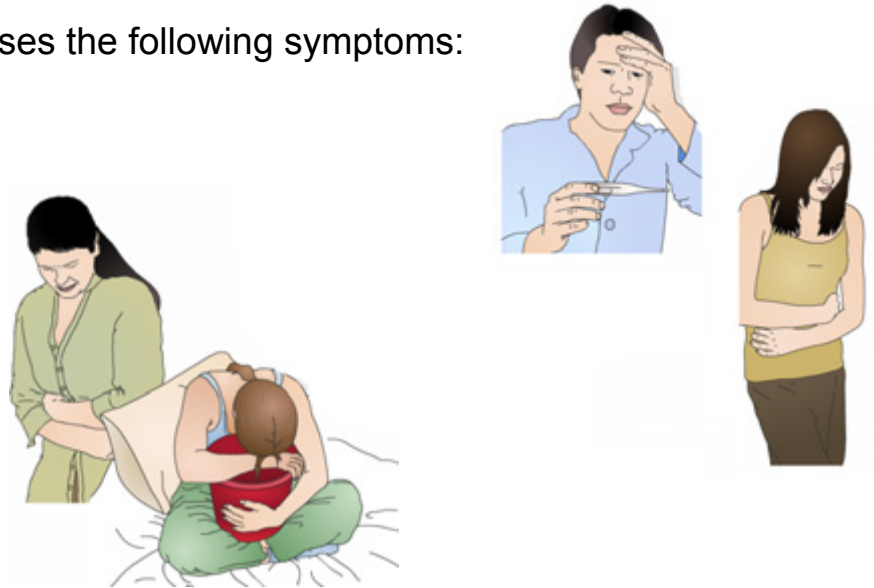
Symptoms

Salmonella infection most often causes the following symptoms:

- Abdominal cramps
- Diarrhea
- Fever
- Headache

Symptoms may also include:

- Blood in the stool
- Chills
- Loss of appetite
- Muscle pains
- Nausea
- Vomiting

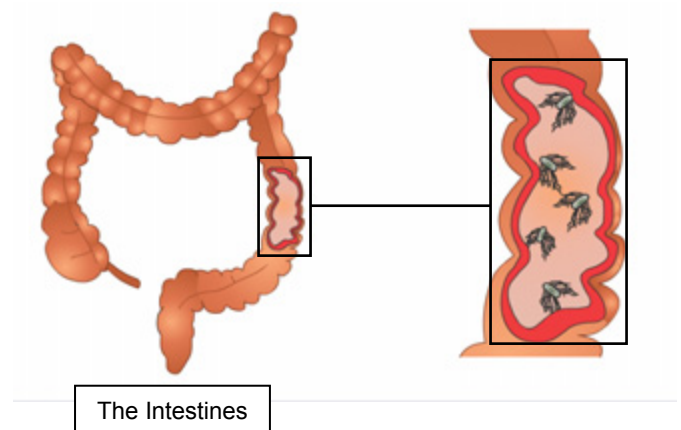


Symptoms usually begin from 12 hours to 3 days after you are infected. They may last for 5 to 7 days. However, your bowels may not return to normal for several months after symptoms first appear. Symptoms may be most severe in the elderly, infants, and people with chronic conditions such as diabetes or HIV infection.

Some types of salmonella bacteria can cause typhoid fever. This is a deadly disease that can cause continual fever as high as 104 degrees Fahrenheit. It is more common in developing countries.

Causes

Salmonella bacteria live in the intestines of people and animals. Most people are infected with the bacteria by eating foods that have been contaminated by feces, also known as stool. Raw meat, poultry, and seafood may be contaminated with salmonella. For meat and poultry, this may happen when the food is butchered.



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Seafood may become contaminated if it is taken from contaminated water.

Raw eggs are another food that may be contaminated with the bacteria. If a chicken is infected with salmonella, it may produce eggs that contain salmonella. If the eggs are not properly cooked, eating them could cause salmonella infections. Some foods, such as mayonnaise and hollandaise sauce, call for raw eggs.

Fruits and vegetables can also carry salmonella bacteria. Fresh produce may be washed with contaminated water. It is also possible for juices from raw meat and poultry to come into contact with uncooked foods, like salads.



Foods may become contaminated if they are prepared by people who do not properly wash their hands after using the bathroom or changing a diaper. People can also pick the bacteria up on their hands by touching something that is contaminated. This includes surfaces, such as diaper changing tables or toilet seats, as well as pets. Birds and reptiles commonly carry the salmonella bacteria.

Chefs and other food handlers who had a salmonella infection may continue to spread the disease if they return to work before the infection completely clears.

Some people who get the infection become chronic carriers. This means they continue to excrete the salmonella in their feces for a year or more after symptoms disappear. Some carriers of the bacteria can pass salmonella infection without having symptoms of the disease.

In rare cases, salmonella can also be carried in a person's urine.

Diagnosis

A healthcare provider may be able to diagnose a salmonella infection using your medical history, a physical examination, and lab tests. Your medical history includes foods you have eaten in the past few days. It may also include recent activities, such as handling pets or swimming in public places.



Your healthcare provider can also use lab tests that will identify salmonella in your stool if you are infected. Many different kinds of illnesses can cause diarrhea, fever, or abdominal cramps. Determining that salmonella is the cause of the illness depends on laboratory tests that identify salmonella in the stool of an infected person.

Once salmonella has been identified, further testing can determine its specific type. If your healthcare provider thinks the infection may be in your bloodstream, he or she may suggest using a blood test to check your blood for the bacteria.

Treatment

Salmonella infections often go away in 5 to 7 days without treatment other than oral fluids. Diarrhea caused by the infection may cause dehydration. It is important to drink lots of fluids to avoid dehydration. People with severe diarrhea may require rehydration with intravenous, or IV, fluids. Young children and pregnant women may be more at risk of dehydration.



Antibiotics are not usually necessary unless the infection spreads from the intestines. Some salmonella bacteria have become resistant to antibiotics. This is largely due to the widespread use of antibiotics to promote the growth of animals for food.

Complications

Salmonella infections may cause the following complications:

- Bacteremia
- Dehydration
- Reactive arthritis
- Typhoid fever

When salmonella enters the blood stream, it is known as bacteremia. It can cause infection throughout the body, including:

- Endocarditis, or infection of the lining of the heart or valves
- Meningitis, or infection of the tissues surrounding the brain and spinal cord
- Osteomyelitis, or infection of the bones or bone marrow

If you do not drink enough liquids to replace the fluids lost from diarrhea, you may become dehydrated. Symptoms of dehydration include:

- Dryness of the mouth and tongue
- Few or no tears produced by crying
- Low urine output
- Sunken eyes

Salmonella may also lead to reactive arthritis, also known as Reiter's syndrome. Reactive arthritis is an inflammation of a joint, usually the knee, ankle or toe, in reaction to an infection elsewhere in the body. The joint itself does not become infected. Symptoms of Reiter's syndrome also include:

- Eye irritation
- Painful urination



Some types of salmonella bacteria can cause typhoid fever. This deadly disease can cause an extremely high, life threatening fever. Typhoid fever is more common in developing countries where water sources may be contaminated.

Prevention

You can take steps to prevent salmonella infections. This section reviews tips for good hygiene that may help prevent infection with the salmonella bacteria.

- Cook poultry, ground beef, and eggs thoroughly. Do not eat or drink foods containing raw eggs or raw milk. Raw milk is also known as unpasteurized milk. If you are served undercooked meat, poultry, or eggs in a restaurant, send it back to the kitchen for further cooking.
- Wash hands, kitchen work surfaces, and utensils with soap and water immediately after they have been in contact with raw meat or poultry.
- Be particularly careful with foods prepared for infants, the elderly, and people with immune system disorders. Immune system disorders include HIV/AIDS infection and type 1 diabetes.
- Wash hands with soap after handling reptiles, birds, or baby chicks. Also wash hands after contact with pet feces.



- Avoid direct or even indirect contact between reptiles and infants or people with immune system disorders. Reptiles include turtles, iguanas, other lizards, and snakes.
- Don't work with raw poultry or meat and an infant at the same time. Work with an infant may include feeding or changing diapers.
- Mother's milk is the safest food for young infants. Breastfeeding prevents salmonella infection and many other health problems.

Summary

Salmonella is the name of a group of bacteria. It is one of the most common causes of foodborne illness. Salmonella happens in raw poultry, eggs, beef, and sometimes on unwashed fruits and vegetables.

Symptoms include fever, diarrhea, abdominal cramps, and headache. Symptoms usually last 5 to 7 days. If salmonella gets into the bloodstream, it can be serious, or even life threatening.

Salmonella infections often go away without treatment other than oral fluids. It is important to consume lots of fluids to avoid dehydration. Rarely, people may need to be hospitalized.

You can prevent salmonella infections by practicing good hygiene. This includes hand washing and safely handling animals, preparing foods, and working with infants or immunocompromised people.

