**Shigella:** Bacteria that Causes the Foodborne Illness Shigellosis

**Introduction**

*Shigella* species are bacteria that cause a foodborne illness called shigellosis. The illness can be treated and most people get better quickly. One of the symptoms of Shigellosis is diarrhea. Severe diarrhea can cause dehydration for the very young or the chronically ill.

**What are the symptoms?**

The most common symptoms are diarrhea, fever, nausea, vomiting, stomach cramps, and straining to have a bowel movement. The stool may contain blood, mucus, or pus. In rare cases, young children with the disease can have seizures. Symptoms can take as long as a week to show up, but most often begin two to four days after infection. The symptoms usually last for several days, but can last for weeks.

The bacteria must be swallowed to cause disease. They are often spread when people do not wash their hands with soap and warm water after using the toilet or changing a diaper. People who get the germs on their hands can infect themselves by eating, smoking, or touching their mouths. They can also spread the germs to anyone or anything they touch, making others sick.

In rare cases, *Shigella* bacteria can also be spread through ponds and swimming pools without enough chlorine. When people who have diarrhea swim in the pool or pond, the bacteria can survive in the water and infect other swimmers who then swallow the water or even get their lips wet.

If you think you might have this disease, you should see your doctor or go to your health center. People with diarrhea or vomiting need extra fluids to treat dehydration. Antibiotics are used to treat severe cases of shigellosis.

**What foods are associated with Shigella?**

Salads (potato, tuna, shrimp, macaroni, and chicken), raw vegetables, milk and dairy products, and poultry can carry *Shigella* bacteria. Water contaminated with human waste and unsanitary handling by food handlers are the most common causes of contamination in these food products. Common pets, farm animals, and wild animals do not spread these germs; only monkeys and people can.

**Public health consequences**

The exact number of shigellosis cases that occur each year is hard to determine because many people attribute their illness to a virus or flu. The local Health Department and Centers for Disease Control and Prevention (CDC) cannot record the number of cases accurately unless the ill person seeks medical care, which is unusual in mild cases. The CDC has calculated an estimate of the number of cases of shigellosis based on corrections for under reporting, misdiagnosis, and the number of cases that are not caused by contaminated food.

The CDC estimates that there are over 130,000 cases of shigellosis each year in this country, and that 31% of the cases are caused by eating contaminated food. Almost 1,500 cases will be severe enough to require hospitalization; 10 deaths are possible each year.

Most cases occur in young children less than 9 years old (11.7–16.4 cases/100,000 population) with outbreaks often being associated with daycare facilities. Young children are susceptible due to their immature immune systems. Some people only have mild symptoms and others do not get sick at all. Infants and children are capable of getting the most severe symptoms of the disease, but all persons are susceptible to some degree. Shigellosis is a very common illness suffered by individuals with acquired immune
deficiency syndrome (AIDS) and AIDS-related complex, as well as by non-AIDS homosexual men.

**How to control this pathogen in your home**

1. Wash your hands with warm soapy water before and after handling raw foods.
   a. First, wet your hands.
   b. Add soap to your hands.
   c. Rub both sides for at least 20 seconds.
   d. Rinse thoroughly.
   e. Air dry, or dry your hands with a clean towel or paper towel.

2. Always wash your hands after using the toilet and after changing a baby’s diaper.

3. Prepare food for yourself but not others if you are ill with diarrhea.

4. Wash fruits and vegetables before eating them.
   a. Do not eat raw alfalfa and other raw sprouts.
   b. Use water from a safe water supply for drinking and washing fresh produce, including herbs.
   c. Remove outer wilted and damaged areas before washing.
   d. Only wash and prepare the amount of fruits and vegetables you will use in one meal.
   e. Refrigerate remaining vegetables without washing, or dry with a paper towel or in a salad spinner.

5. Knives, cutting boards, and food preparation surfaces should be washed with hot water and soap after contact with raw foods.
   a. Clean sinks and counters with paper towels or clean cloths and hot soapy water before and after cooking food.
   b. Keep foods that are ready to eat away from raw foods.
   c. Wash knives, cutting boards, and counters with hot water and soap after you work with raw foods.
   d. Scrub your cutting board with dish soap. If your cutting board is not made of wood, you can wash it in the dishwasher.
   e. Wash your hands with soap and warm water after working with raw foods.
   f. Put thawing meat, poultry, and seafood in a dish in the refrigerator to keep juices from leaking onto the food below.

**References**


For more information about food safety, visit [Foodsafety.osu.edu](http://Foodsafety.osu.edu).

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