
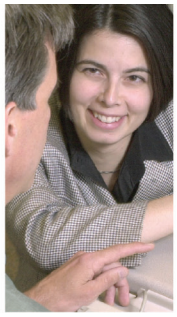


THE OHIO STATE UNIVERSITY EXTENSION

FACT SHEET

Family and Consumer Sciences

HYG-5564-11

Staphylococcus aureus

A Problem When Food Is Left Out Too Long

Introduction

Staphylococcus aureus is a common cause of foodborne illness. Commonly called "Staph aureus," this bacterium produces a poison/toxin that cause the illness. Staph aureus exists in air, dust, sewage, water, milk, and food or on food equipment, environmental surfaces, humans, and animals. Humans and animals are the primary way the bacteria are transported through the environment. Staph aureus are present in the nasal passages, the throat, and on the hair and skin of 50% or more of healthy individuals. This incidence is even higher for those who are around sick individuals, such as health professionals who are employed in hospitals. Although food handlers are usually the main source of food contamination in food poisoning outbreaks, equipment and environmental surfaces can also be sources of contamination with Staph aureus.

People can contract the illness by eating food that is contaminated with Staph aureus, usually because the food has not been kept hot enough or cold enough. Staph bacteria grow and reproduce at temperatures from 50 degrees F to 120 degrees F, with the most rapid growth occurring near body temperature (about 98 degrees F). The toxin produced by staph bacteria is very heat-stable—it is not easily destroyed by heat at normal cooking temperatures. The bacteria themselves may be killed, but the toxin remains. Re-heating foods, even at high temperatures, that have been contaminated with toxins will NOT make them safe to eat! That is why it important to avoid contaminating food during food preparation and to store food at refrigerated temperatures. This is especially important of foods left over after one meal and planned to be used again at a later meal. Quick cooling and refrigeration, or holding at or above 140 degrees F to keep the bacteria from growing, can help ensure that toxin has no chance to form.

Symptoms of illness

Symptoms of staphylococcal food poisoning usually occur within a few hours of eating the contaminated food. The disease that it causes can be serious, depending on individual response to the toxin, the amount of contaminated food eaten, the amount of toxin in the food ingested, and the general health of the victim. The most common symptoms are nausea, vomiting, abdominal cramping, and prostration. Some individuals may not always demonstrate all the symptoms associated with the illness. In more severe cases, headache, muscle cramping, and changes in blood pressure and pulse rate may occur. Recovery generally takes two days. It is not unusual for complete recovery to take three days and sometimes longer. The objective of treatment is to replace fluids, salt, and minerals that are lost by vomiting or diarrhea.

Public health consequences

The exact number of Staph aureus 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 Staph aureus 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 240,000 cases of Staph aureus each year in this country, and that 100% of the cases are caused by eating food contaminated with the toxin produced by the bacteria. About 1,000 cases will be severe enough to require hospitalization; 6 deaths are possible each year. Anyone can become ill by eating food that has been improperly stored. Some will have more severe symptoms depending on the dose of toxin that they consume.

What foods could make me sick?

Staph aureus is found on the human body and anyone who handles food during preparation can transfer some of the bacteria to the food. If that food is "perishable"—meaning a food that should be refrigerated to prevent bacteria from multiplying at room temperature—then a foodborne illness is possible if the food is "temperature abused." When contaminated food is left out more than two hours at room temperature, Staph aureus begins to grow and will produce a toxin. The more toxin in the food, the sicker the person who eats the temperature abused food will be.

Foods that are frequently a problem with staphylococcal food poisoning include meat and meat products; poultry and egg products; salads such as egg, tuna, chicken, potato, and macaroni; bakery products such as cream-filled pastries, cream pies, and chocolate éclairs; sandwich fillings; and milk and dairy products. Staph aureus may also be present in raw milk and raw milk products. Staph can cause mastitis in dairy cows, and other infections in meat animals.

How can I control this pathogen in my home?

1. Keep cold food cold and hot food hot.
   a. Keep food out of the refrigerator no more than 2 hours to keep Staph aureus from growing.
   b. Check the temperature in the refrigerator with a thermometer to be sure that it is between 35 and 40 degrees F and cold enough to keep food safe.
   c. Refrigerate food in shallow containers within 2 hours of preparation.
   d. Thaw foods in the refrigerator, in the microwave, or under cold running water.
   e. Put thawing meat or chicken in a dish to keep juices from leaking onto the food below.
   f. Keep hot food above 135 degrees F.
   g. Take only foods that can be kept at a safe temperature on picnics, not highly perishable foods, such as cream pastries.
2. Wash 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.
   f. Always wash your hands after using the toilet, after changing a baby's diaper, after touching pets or other animals, and after sneezing or coughing.
   g. Properly dress or glove cuts and burns on hands before handling food.

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For more information about food safety, visit **Foodsafety.osu.edu**.

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