



HYG-5576-11

# *Bacillus cereus*

## A Foodborne Illness Confused with the 24-hour Flu

### What type of pathogen

If you ever thought you had the 24-hour flu, you may have actually had a foodborne illness caused by the bacteria *Bacillus cereus*. Foods that have not been properly stored at safe cold or hot temperatures are the main sources of the pathogen. Cold foods should be kept cold (below 40 degrees F), even during food service, and hot foods should be hot, which means above 140 degrees F. Proper temperature control can be a problem when large quantities of food are prepared and refrigeration space is in short supply. Keeping foods hot, on the other hand, is a problem because food continues to cook and can become overcooked. Institutions like schools and nursing homes, or catered special events like weddings or outdoor dinners, are places where outbreaks of this type of foodborne illness have been reported most often. However, the problem can also occur in private homes.

### Symptoms of illness

There are two forms of foodborne illness caused by *Bacillus cereus*. The first type causes watery diarrhea, abdominal cramps, and pain. The symptoms can begin 6 to 15 hours after eating contaminated food. The second type of illness is called the emetic form. This type is characterized by nausea and vomiting that begins ½ hour to 6 hours after eating the

contaminated food. Both types of the foodborne illness last about 24 hours, and most people recover without medical treatment.

### Public health consequences

The exact number of *Bacillus cereus* 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 *Bacillus cereus* based on corrections for underreporting, misdiagnosis, and the number of cases that are not caused by contaminated food. The CDC estimates that there are over 63,000 cases of *Bacillus cereus* illness each year in this country, and that 100% of the cases are caused by eating contaminated food. About 20 cases will be severe enough to require hospitalization; fortunately no deaths are predicted to result from this mild foodborne illness.

### Susceptible groups

Anyone can get a foodborne illness from eating a food contaminated with *Bacillus cereus*. The most important factor in determining if a person will get sick is the amount of the pathogen the person

eats—the more consumed; the more likely the food-borne illness develops. Fortunately, once the pathogen is cleared from the gastrointestinal tract by vomiting or diarrhea, the symptoms are usually relieved.

### **Foods implicated**

Many foods have been implicated in outbreaks of foodborne illness caused by *Bacillus cereus*. Meats, milk, vegetables, and fish have been the contaminated foods associated with the diarrheal type of illness. The vomiting type has been associated with starchy

foods like rice, potato, pastas, sauces, puddings, soups, casseroles, and pastries.

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

- a. Limit time food is at room temperature to 2 hours.
- b. Do not prepare food too far in advance of serving without plans for keeping it cool or warm.
- c. Refrigerate food in shallow containers within 2 hours of preparation.
- d. Keep cold food below 40 degrees F.
- e. Keep hot food above 140 degrees F.

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### **References**

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

Written by Lydia Medeiros and Jeffery LeJeune.

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Keith L. Smith, Ph.D., Associate Vice President for Agricultural Administration and Director, Ohio State University Extension  
TDD No. 800-589-8292 (Ohio only) or 614-292-1868