9-24-2015

It Must Have Been Something I Ate

Wilella Daniels Burgess
Purdue University

April C. Mason
Purdue University

http://docs.lib.purdue.edu/agext/1071

For current publications, please contact the Education Store: https://mdc.itap.purdue.edu/
This document is provided for historical reference purposes only and should not be considered to be a practical reference or to contain information reflective of current understanding. For additional information, please contact the Department of Agricultural Communication at Purdue University, College of Agriculture: http://www.ag.purdue.edu/agcomm
This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.
It Must Have Been Something I Ate

Wilella Daniels Burgess and April C. Mason,
Extension Specialists, Foods and Nutrition,
School of Consumer and Family Sciences, Purdue University

What is food poisoning?

Have you ever suffered from a touch of a stomach virus or the 24-hour flu? Chances are the nausea, vomiting, and diarrhea you experienced were actually caused by eating food contaminated with microorganisms food poisoning. Between 25 and 80 million cases of food poisoning are reported each year in the United States. Since only 1 in every 25 to 100 cases requires medical attention, there may, in fact, be as many as 275 million cases of food poisoning per year (IFT 1988). This makes food poisoning by far the greatest food safety problem in the United States.

Some microorganisms cause food to spoil making it look, smell, or taste bad. But these spoilage organisms don't make you sick. Food poisoning organisms, on the other hand, are very difficult to detect in food. Food contaminated with these organisms can seem perfectly normal.

The most common type of food poisoning is the result of a food infection. To get a food infection, live bacteria (like Salmonella, Clostridium perfringens, or Listeria monocytogenes) must be present in the food you eat. When these organisms reach the intestines, they multiply and produce intestinal irritation that causes pain and diarrhea. It may take 12-18 hours or more after eating the contaminated food for the bacteria to grow in the intestines and cause illness. Fortunately, heat kills these bacteria. Heat also breaks down the toxin that causes botulism. So, cooking food thoroughly before eating it would make it safe.

Not all food can be made safe by cooking. Some harmful microorganisms, like Staphylococcus aureus and Bacillus cereus, can multiply in food and produce a poisonous substance that is not destroyed by heat. Because the poisons are already formed, nausea, vomiting, and diarrhea appear rapidly, usually 2-4 hours after eating the contaminated food.

Where do food poisoning organisms come from?
Microorganisms are present everywhere in the soil, in the water, in the air, on our bodies. Some are useful, like the organisms used to make yogurt, cheese, and sauerkraut. Some will cause food to spoil, making it look, taste, or smell bad. Most are harmless. But a few can make you sick.

Harmful bacteria can contaminate food at any point between the farm and the dinner plate. Many of the organisms that cause food poisoning in people can also grow in the intestines of farm animals. So, harmful bacteria can easily contaminate animal products during processing.

Although food poisoning organisms do not normally grow on fruits and vegetables, these products can become contaminated if they come in contact with animals or animal products. The environment is another potential source of contamination. For example, shellfish can pick up bacteria and other contaminants from the water they live in. Other possible sources of contamination include unclean and unsanitary equipment, insects or rodents, and humans.

What does the food industry do to keep harmful bacteria out of food?

Farmers, processors, and retailers work hard to insure the safety of the food they produce, process, and/or sell. They do so, not only because it's required by law, but also to protect their investment. A member of the food industry who develops a reputation for unsafe food would quickly go out of business.

Farmers work to reduce the incidence of contamination in the animals and crops they produce by: controlling insects, rodents, and birds that could spread bacteria; reducing the amount of human handling; insisting on good sanitary practices among farm workers; and processing and storing feeds in an appropriate manner.

Food processors insure the safety of the food they manufacture by: making employees use proper hygiene; keeping all equipment clean and sanitized; controlling unavoidable pests; and closely monitoring all processing steps.

Retailers, like grocery stores and restaurants, keep food safe by: storing foods properly; observing expiration dates; keeping the facilities clean; controlling pests; making employees use proper hygiene; and cooking foods properly.

Federal, state, and local agencies closely monitor all aspects of food production, processing, and retailing to make sure that food safety laws are followed.

Food Safety Regulatory Agencies

* U.S. Department of Agriculture (USDA) inspects poultry, eggs, domestic and imported meat, livestock, and production plants.

* Food and Drug Administration (FDA) insures that all foods sold between states (except for meat, poultry, and eggs) are safe and wholesome; inspects food plants, imported foods, and feed mills that make feeds containing medications or nutritional supplements for food animals.

* National Marine Fisheries Service (NMFS) maintains a voluntary inspection program for fish products.

* Centers for Disease Control (CDC) responds to emergencies involving food poisoning; directs and enforces quarantines; and administers national programs for preventing and controlling food poisoning.

* State and local governments inspect restaurants, retail food establishments, dairies, grain mills, and other food establishments. Some states have a fish inspection program.

What can I do to make sure I don't get food poisoning?

Most cases of food poisoning result from improper storage or preparation of food, either in a restaurant or at home. To avoid food poisoning, you must purchase, store, and prepare foods properly.
Your responsibility for food safety begins in the grocery store. The foods offered for sale have been produced, processed, and packaged under stringent conditions and are usually safe. However, handling and storage can sometimes damage food. So you should carefully examine food for signs of misuse before purchasing it. The following tips will help you select safe, high-quality foods.

**In the grocery store:**

* Avoid damaged and torn packages.
* Check expiration dates.
* Avoid seriously dented cans.
* Never buy cans that are bulging or leaking.
* Do not buy a product if the tamper proof seal is missing or broken.
* Do not buy frozen foods that are above the freeze line of the storage chest.
* Reject poultry and fish with a strong or off odor.
* Select frozen foods, meat, and deli foods last.

* Make sure foods in the deli section are kept cold and that the employees have a clean, professional appearance.

* Take refrigerated and frozen foods straight home and put them away immediately.

Despite all the controls in place to keep food safe, a small number of bacteria may be present on the foods you buy, particularly on raw animal and seafood products. The presence of these contaminants is generally not a problem if the food is cooked thoroughly before eating, and if care is taken to avoid contaminating foods that will be eaten raw.

Foods can also be contaminated after they are cooked. To eliminate this possibility, it is important to keep all food preparation areas clean and to promptly refrigerate food. The following safety tips will help to insure that the foods you prepare at home are safe and wholesome.

**At home:**

* Wash produce before eating.
* Do not eat raw or runny eggs.
* Cook meat thoroughly before eating (165-185°F).
* Do not eat raw meat or seafood.
* Wash hands, utensils, counters, and cutting boards before and after use.
* Keep raw and cooked foods separate.
* Wash the plate that raw meat was on before using it for cooked meat.
* Do not use the same cutting board for raw meat and then produce that will be eaten raw.
* Make sure the refrigerator temperature is below 40°F and the freezer temperature is at 0°F.
* Never let foods remain at room temperature for more than 2 hours.

* Promptly refrigerate leftover foods.

You have the least amount of control over the foods you eat at a restaurant. However, a little common sense can go a long way toward insuring that a meal you eat out doesn't make you sick. The following tips can help you avoid food poisoning when you eat away from home.

In a restaurant:

* Select restaurants with good reputations.

* Avoid restaurants that look dirty or poorly maintained.

* Make sure the food is served at the proper temperature.

* Make sure employees have a clean, professional appearance.

* Do not order raw or rare meat or seafood.

* Make sure salad bar items are cold or on ice.

* Make sure hot buffet items are hot.

What's the bottom line?

Food poisoning is, at best, uncomfortable and, at worst, fatal. Farmers, food processors, and retailers all work hard to insure that the food you purchase is safe. Furthermore, federal, state, and local agencies closely monitor all aspects of food production and processing. But, the ultimate responsibility for food safety is yours.

You can greatly decrease your chances of getting food poisoning by choosing restaurants carefully, and selecting, storing, and preparing foods properly at home.

References


Cooperative Extension Service, Purdue University. 1991. HE-611 Producer Through Consumer: Partners to a Safe Food Supply (brochure). Purdue University, West Lafayette, IN 47907.


Cooperative Extension Service, Purdue University. 1991. HE-622 Producer Through Consumer: Partners to a Safe
Cooperative Extension Work in Agriculture and Home Economics, State of Indiana, Purdue University and U.S. Department of Agriculture Cooperating. H.A. Wadsworth, Director, West Lafayette, IN. Issued in furtherance of the Acts of May 8 and June 30, 1914. It is the policy of the Cooperative Extension Service of Purdue University that all persons shall have equal opportunity and access to our programs and facilities.