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E. A. ZOTTOLA

# Food-Borne Disease

Food-borne disease can be divided into two types:

**Food-borne infection.** Specific bacteria are present in the food. After you eat the food, the bacteria grow in your intestines and bring about illness. Only a few bacteria are necessary to establish the infection.

**Food intoxication.** Specific bacteria grow in the food and produce a toxin or poison. When you eat the food, this poison causes illness.

The four most common types of food-borne disease are described below.

## I. Type of Bacteria: Salmonella species

**Sources:** Poultry, eggs, pork, processed meats, feces, and dirt.

**General Problem:** This is a food-borne infection. After growing in the intestinal tract, the Salmonella cells break apart and a poison is released. The poison causes the illness.

**Symptoms:** Severe abdominal pain, diarrhea, prostration, chills, fever, and vomiting occur within 7 to 72 hours.

**Prevention:** Good sanitation practices are essential. Keep bacteria out of food.

**Foods Commonly Involved:** Any egg-based food, eggs (particularly duck and turkey eggs), poultry, pork, processed meats, creme desserts and fillings, salads (potato, chicken, etc.), sandwich fillings, and milk products.

## II. Type of Bacteria: Staphylococcus aureus

**Sources:** Ubiquitous (present everywhere) but mainly skin, nose, throat, pimples, boils, carbuncles, and acne.

**General Problem:** This type of bacteria causes food intoxication. While growing in the food, these bacteria produce a toxin or poison. When the poison is eaten with the food, illness results.

**Symptoms:** Vomiting, diarrhea, prostration, and abdominal cramps occur within 2 to 4 hours.

**Prevention:** Good sanitation practices and proper temperature control are important. To prevent bacterial growth, keep hot foods hot, above 140° F., and cold foods cold, below 45° F.

**Foods Commonly Involved:** Ham, poultry, processed meats, salads (potato, chicken, tuna, etc.), sandwich fillings, beans, creme fillings and desserts, custards, and milk products.

## III. Type of Bacteria: Clostridium perfringens

**Sources:** Meat, poultry and poultry products, soil, dirt, and unclean conditions.

**General Problem:** Clostridium perfringens food poisoning is a problem usually associated with the food service industry.

These bacteria grow in food kept warm for some time before eating. When the food is eaten, the bacteria continue to grow in the intestinal tract and the illness occurs.

**Symptoms:** Relatively mild. Abdominal cramps, diarrhea, occasionally nausea, and rarely fever or vomiting occur. Symptoms usually appear 4 to 22 hours after eating the contaminated food.

**Prevention:** Good sanitation practices and proper temperature control are important. Keep bacteria out of food and handle food in such a manner that growth cannot occur. Food to be eaten warm should be kept above 140° F. until used.

**Foods Commonly Involved:** Meat (mainly roast beef and its gravies); poultry (usually turkey, dressing, or gravy; chicken less frequently); gravies made from red meat, poultry, and mushrooms; prepared dishes containing vegetables or macaroni products usually with meat, poultry, or fish.

## IV. Type of Bacteria: Clostridium botulinum

**Sources:** Soil, dirt, and unclean conditions.

**General Problem:** C. botulinum poisoning (botulism) is generally a problem with canned foods and processed meats and fish. When C. botulinum grows under anaerobic conditions (without oxygen or air as in canned foods), it produces a poison. This poison usually causes death when eaten with the food.

**Symptoms:** Vomiting, diarrhea, visual disturbances, inability to swallow, speech difficulty, and labored breathing begin 18 to 96 hours after intake of infected food. Fatality rate is high.

**Prevention:** Use proper canning procedures to assure complete destruction of C. botulinum. Boil all suspected canned foods to destroy poison. Heat all suspected processed fish or meat products to 180° F. for 30 minutes.

**Foods Commonly Involved:** Processed or smoked meats and fish and canned, low acid foods such as string beans, corn, beets, peas, meats, and olives.

To help prevent ALL types of food poisoning:

1. Work with clean hands. Wash hands thoroughly after going to the toilet, smoking, or blowing your nose.
2. Thoroughly clean all pots, cutting boards, etc. used for handling raw foods before using them for cooked foods. This procedure prevents cross-contamination between raw and cooked foods.
3. Never work around food if you have any infection such as a boil, acne, cut, cold, or flu.
4. Keep hands away from mouth, nose, and hair. Always cover coughs and sneezes with tissues.

5. Do not use cooking utensils to taste food while cooking or serving. Do not lick your fingers or eat while working with food.

6. Refrigerate all foods promptly after a meal or after cooking. Chill perishable foods rapidly and hold at 40° F. or below. To assure rapid cooling, spread out large quantities of food in shallow pans.

7. When freezing foods, chill or freeze them so that the center temperature is reduced rapidly to 40° F. or below.

8. Thaw frozen foods in the refrigerator or under cold running water.

9. Do not allow turkey or other poultry dressings to stay at temperatures between 40° and 120° F. Never stuff birds the night before cooking and never partially cook a stuffed bird.

10. Do not let sandwich fillings of meat, fish, egg, or potato salad stand at temperatures between 40° and 120° F.

11. Do not allow ham to remain at temperatures between 40° and 120° F.

12. Use pasteurized milk and milk products.

13. Process in a pressure cooker all canned, low acid foods for home use. Never serve home-canned vegetables or meats at a public function.

14. Do not use dirty, cracked, or soiled eggs in raw or slightly cooked egg products such as eggnog. Cook dried egg products thoroughly.

15. When preparing home-smoked fish, be sure fish stays at a temperature of 180° F. for at least 30 minutes. Do not refrigerate smoked fish products in an airtight plastic pouch.

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