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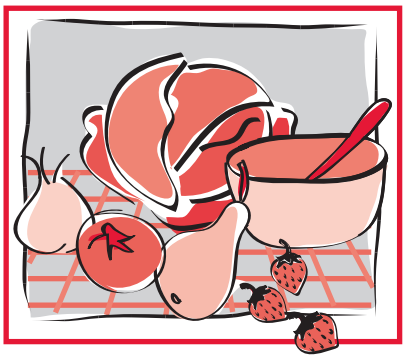

Serving Children Safe Foods

Fact Sheet No. **9.367** Food and Nutrition Series | **Health**

by P. Kendall*

Causes of Foodborne Illnesses

Food may cause illness if it's been contaminated with microorganisms such as parasites, viruses or bacteria, and all food can be carriers of these microorganisms. At the right temperature, in just a few hours, even small amounts of bacteria you can't see, smell, or taste can multiply to dangerous levels on susceptible foods and cause foodborne illness, sometimes called food poisoning. Symptoms tend to resemble the flu. If diarrhea continues, this can become a nutritional concern, as diarrhea interferes with the absorption of nutrients from food.

Young children, infants, pregnant women, elderly people and people who are sick are especially susceptible to foodborne illness. Therefore, it is important to take special care when serving food to these groups.

Although any microorganism can find its way into a child care or home setting, five pathogens seem to have particular importance in outbreaks of foodborne illness affecting children in child care. These microorganisms include: *Shigella*, *Cryptosporidium*, *Giardia lamblia*, *Hepatitis A*, and *E. coli* O157:H7.

Shigella is a bacteria that causes diarrhea, fever, abdominal pain and pussy to bloody stools. It is transmitted by infected people to others through fecal contamination directly or through food or water.

Cryptosporidium is a microscopic parasitic protozoan that causes mild to severe diarrhea. When ingested, cysts carrying the protozoan migrate to the small intestine where they cause illness. Infants and people with Acquired Immune Deficiency Syndrome (AIDS) are particularly vulnerable.

Giardiasis is an infection caused by a water-borne parasite called ***Giardia lamblia***. It is characterized by foul smelling diarrhea, large soft stools, excessive gas, a swollen abdomen, dehydration, and loss of appetite. Young children can contract giardiasis by drinking contaminated water, including stream water, eating dirt or worm eggs or playing with infected dogs. Also, giardiasis easily can be spread between adults and children in child care or babysitting situations if hands are not properly washed after diaper changes.

Infectious hepatitis is a disease of the liver caused by a virus called ***Hepatitis A***. Hepatitis A is commonly spread through contaminated water supplies and through contact with infected people who do not take proper sanitary care. In child care settings, it can be avoided through proper hand washing and by sanitizing diaper change and other areas where stool may be present. Symptoms take 15 to 50 days to appear after contraction of the disease and infants and children under 6 may remain asymptomatic, or show only mild jaundice and darkened urine as symptoms, yet serve as carriers of the disease. Symptoms include: fever, fatigue, nausea, vomiting, abdominal discomfort, muscle aches, darkened urine and enlargement of the liver. If hepatitis A occurs in a child care home or center, the center should seek medical advice in order to treat those who may be exposed and to prevent further spread of the disease.

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Quick Facts

- Nutrition, food safety and health are interrelated because no food is nutritious if it's not safe to eat.
- Safe food handling is as important in the home as it is in a food processing plant, grocery store or restaurant.
- It is often the cook who has the final control in ensuring that food served is safe to eat.

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***Escherichia coli* O157:H7** is probably the most dreaded bacteria today among parents of young children. *E. coli* O157:H7 became a household word in 1993 when it was identified as the cause of four deaths and more than 600 cases of bloody diarrhea among children under 8 in the Northwest. The Northwest outbreak was traced to undercooked hamburgers served in a fast food restaurant. Other sources of outbreaks have included raw milk, unpasteurized apple juice, raw sprouts, raw spinach, and contaminated water. Most strains of *E. coli* bacteria are harmless; however, this particular strain attaches itself to the intestinal wall and then releases a toxin that causes severe abdominal cramps, bloody diarrhea and vomiting that lasts a week or longer. In small children and the elderly, the disease can progress to kidney failure. The good news is that *E. coli* O157:H7 is easily destroyed by cooking. Use a thermometer to make sure ground beef is cooked to 160 degrees F throughout.

Basic Rules to Handle Food Safely

Safe food handling is your first line of defense in preventing foodborne illness. Food needs to be cared for safely from the time it's purchased until it's safely eaten.

Shopping. Food safety in the home or child care center actually starts at the grocery store. Buy only as much as you can safely store. Think of the layout of the store and what foods you're going to pick up first and what items you're going to pick up last. **Pick up perishable items last**.

Bag foods, such as raw meats, separately so drippings can't contaminate other foods. Keep meats separate from fruits and vegetables in the cart.

Buy packaged precooked foods only if packaging is sound. Buy products labeled "keep refrigerated" only if they are stored in a refrigerated case. Remember to check the "use by" dates before purchasing any food item.

Avoid damaged containers even if they seem like a good bargain. They may cost you health-wise if contaminated.

Refrigerate perishable foods within two hours of purchase or within one hour in hot weather to keep food poisoning bacteria from multiplying too quickly.

Storing Food. Proper storage of food prolongs its shelf-life and helps maintain the safety and quality of the food. Your frozen foods will maintain top flavor and nutritional value if your freezer keeps them frozen solid.

Make sure your refrigerator is kept clean and maintains a temperature of 35 to 40 degrees Fahrenheit. Foods should be cold to the touch, but not frozen. Store canned goods and other shelf-stable items in a cool, dry place; rotate foods so you use older supplies first. Store dry foods such as flours, cereals, cornmeal, sugar, and dry beans in tightly-covered containers to protect from insects and mice.

Preparing Food. Cleanliness is your first line of defense against foodborne illness. Child care homes and centers need to be especially careful about cleanliness and sanitation. When hands and surface areas are not properly washed and sanitized after diapering, fecal bacteria can be transferred to food during preparation and service.

Wash hands with soap and warm water for 20 seconds before handling food and after using the bathroom, changing diapers, handling raw meat or poultry, touching animals, smoking, coughing or sneezing into your hand, or blowing your nose.

Children also need to learn about the importance of washing their hands. Teach children to take time to wash their hands after going to the toilet, before and after eating, and after playing with dirty objects or pets.

Remember to wash and sanitize cutting boards and work areas after handling raw products. Use a spray solution of ¾ teaspoon chlorine bleach per quart of water to sanitize cutting boards and work areas. Air dry.

Avoid cross-contamination. Cross-contamination can occur if raw food drippings fall on cooked or other raw foods or if utensils, hands and cutting areas are not cleaned after each individual food use.

Use separate cutting boards for meats, vegetables, and breads. That's the simplest way to make sure that you won't contaminate foods to be served without further cooking from bacteria in raw animal products.

Thoroughly wash all fruits and vegetables in plain running water. Use a scrub brush on hard-to-clean fruits and vegetables. Pat dry with paper towel. Peel if necessary.

Thaw frozen foods in the refrigerator, not on the counter. You may also safely thaw foods in the microwave oven, provided the food is cooked immediately.

Make sure all raw meat, poultry, fish and eggs are thoroughly cooked. That means cooking meats until no pink remains and the juices run clear. Cook eggs until the yolks and whites are firm. See Figure 1 for safe end-point cooking and refrigeration temperatures.

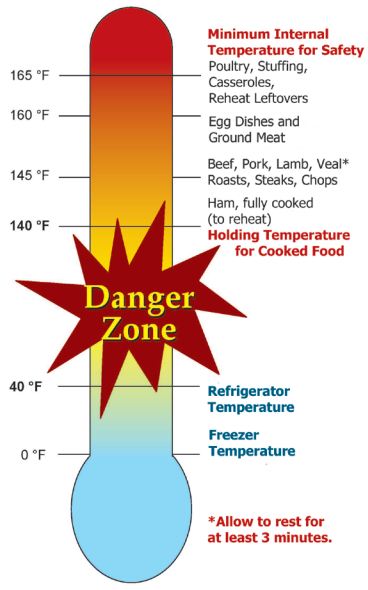

Figure 1: Safe end-point cooking and refrigeration temperatures. Courtesy of: USDA Food Safety Inspection Service.

Don't let people with infected cuts or sores, colds, or other infectious diseases prepare or serve food.

Serving Food. Food safety errors also can be made during the serving and handling of cooked food. Don't forget cleanliness. Remember to wash hands thoroughly before serving foods.

Serve cooked foods on clean plates and with clean utensils, not the same ones that held the raw food. If serving time is long, be sure to keep hot foods hot and cold foods cold. Don't let perishable foods sit at room temperature for more than two hours, or one hour in hot weather.

Handle Leftovers with Care. Wash hands before handling leftovers and use clean utensils and surfaces. Divide leftovers into meal-sized portions. Place in shallow containers, cover and refrigerate as soon as possible after serving. Use within a couple of days, or freeze for use within three months.

Figure 2: Family on a picnic.

Special Picnic Precautions

Picnics are something that all children enjoy. Proper handling and serving of food must be remembered on picnics, too.

Plan ahead. Take only as much food as you'll need. Plan a menu that can remain safe until time to eat. Be cautious about serving foods that are difficult to keep safe on picnics, such as custard, cream-filled or meringue pies, potato salad, or chicken, ham, tuna and egg-salad sandwiches. Some examples of foods that keep well on picnics include most fruits and vegetables, canned goods, crackers, fruit juices, peanut butter, and canned or dried meats.

Store perishable foods such as milk, meat, chicken, salads and sandwich fillings in portable ice chests. Include one or more cold sources in the cooler such as commercial ice packs, containers of ice or ice cubes. Serve cold foods promptly from the cooler. On very hot days, don't let food sit out for more than an hour. Otherwise, wrap and store leftovers within two hours.

At the picnic site, thoroughly cook barbecued and grilled foods, such as chicken, pork, beef and fish. After the picnic, promptly put leftovers back in the cooler. If the cooler no longer contains ice, then don't try to save perishable leftovers. **Remember...when in doubt, throw it out!**

Preventing Choking

When picnicking or whenever you're feeding children, parents and caregivers must always be alert to the danger of choking. A choking child is a silent child. Each year as many children die from choking on food as from eating food that has been contaminated with bacteria or toxins.

Risky foods tend to be small, round, firm and slippery. The child under 4 usually finds such foods difficult to hold in place and chew. Round foods cause trouble because they fit so well into a child's airway, which is small and susceptible to blockage.

Hot dogs, a popular picnic item, head the list of foods that children choke on most often. Slicing a hot dog lengthwise and then cutting pieces at an angle ensures odd-shaped pieces that are less likely to cause a child to choke. Other foods likely to cause choking include candy, gum, peanuts and other nuts, grapes, cookies, chunks of meat, carrot coins, apple chunks and peanut butter – all popular foods with young children.

Environment also plays a part in choking. Eating and/or drinking while lying down, crying, laughing, talking, running or playing greatly increases the risk of choking. Because of this, it's important that meal and snack times be supervised, that small children be fed in an upright position, and that eating and play time be separated.

Summary

Sanitation and safe food practices are some of the most important aspects of good food service. One error or one instance of carelessness can cause the spread of disease with drastic consequences.

Just as it's important to feed children nutritious, body-building foods, it is equally important that your meals and snacks be free from substances that may cause illness. Nutrition and sanitation must go hand-in-hand in the home or in any foodservice operation.

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