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Perspective

Food Hazards and its Safety Measures

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DESCRIPTION

Access to safe, nutritious food in sufficient quantities is a key to sustaining life and promoting good health. Unsafe foods which contain harmful bacteria, viruses, parasites or chemicals cause more than 200 diseases. There is also a vicious cycle of illness and malnutrition, which especially affects infants, young children, the elderly and the sick. Food poisoning is usually infectious or toxic and is caused by bacteria, viruses, parasites, or chemicals that enter the body from contaminated food. Contamination with chemicals can lead to acute food poisoning and long-term illnesses such as cancer. Many food poisoning diseases can cause long-term disability or death.

Examples of food hazards

Bacteria: Foods implicated in Salmonellosis outbreaks include eggs, poultry and other animal products. *Campylobacter* food poisoning is primarily caused by raw milk, raw or undercooked chicken, and drinking water. *E. coli* is associated with unpasteurized milk, undercooked meat, and contaminated fresh fruit and vegetables. *Listeria* infections can cause miscarriage in pregnant women and death of newborns.

Virus: *Norovirus* and hepatitis A virus are also food-borne viruses, which can cause long-term liver disease, and are usually spread through raw or undercooked seafood or contaminated raw produce.

Parasite: Some parasites such as fish-borne flukes are transmitted only through food. For example, others such as tapeworms as *Echinococcus spp* and *Taenia spp* can infect humans through direct contact with animals or with food. Other parasites such as Ascariasis, *Cryptosporidium*, *Entamoeba histolytica*, and Giardia can enter the food chain through water and soil and contaminate fresh food.

Prion: Prions, protein-based infectious agents, are unique in that they have been inegrated in certain forms of neurodegenerative disease. Bovine Spongiform Encephalopathy (BSE or so-called mad cow disease) is a prion disease of cattle. Consumption of meat products containing certain hazardous substances, such as brain tissue, is the most likely route through which prion pathogens are transmitted to humans.

Chemicals: Naturally occurring toxins include mycotoxins, marine biotoxins, cyanogenic glycosides, and toxins found in poisonous fungi. Staple foods such as corn and cereals can contain high levels of mycotoxins like aflatoxins and ochratoxins which are produced by molds on grains. Long-term exposure damages the immune system, normal development, or cause cancer. Heavy metals such as lead, cadmium, and mercury damage nerves and kidneys. Food contamination with heavy metals mainly occurs through polluted water and soil.

Food safety techniques

Microorganisms that cause food poisoning can survive in many different places and spread throughout the kitchen. Washing hands with warm soap water for at least 20 seconds before, during and after cooking is one of the most important rules. Hands can carry many types of bacteria that can be transferred to food. Always wash hands after handling raw meat, chicken and other poultry, seafood, flour, and eggs. Utensils, cutting boards, and countertops should be washed with hot, soapy water after the preparation of each food item. Wash fresh fruits and vegetables under running tap water thoroughly. Raw meat, poultry, seafood, and eggs can transfer microorganisms to ready-to-eat foods unless stored separately. Store raw or marinated meats, poultry, seafood, and eggs separately from all the other foods in the refrigerator, and store them in airtight containers or packages to prevent juices from spilling onto other foods. Don't wash these foods as the juices can splatter onto your sink and counters, which can actually spread germs.

Food is safely cooked when the internal temperature becomes high enough to kill microorganisms which make us ill. We can't tell if a food is cooked safely by seeing its color or texture (except seafood). Use a food thermometer to make sure that the food is cooked to a safe internal temperature. Learn how to properly place the thermometer in different foods to get an accurate reading. Whole cuts of beef, veal, lamb and pork, including fresh ham: 145°F. Finned fish: Cook at 145°F or until the flesh is opaque and separates easily with a fork. Minced meat such as

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beef and pork: 160°F. Whole poultry, including ground chicken and turkey, leftovers and casseroles: 165°F.

CONCLUSION

Bacteria can multiply quickly when left at room temperature or in the "danger zone" of 40°F to 140°F. Keep the refrigerator below 40°F, and the freezer below 0°F, and know when to throw away food before it spoils. If the refrigerator does not have an in-built thermometer, place a device thermometer inside the refrigerator to check the temperature. Hot food gets cool quickly, so it's okay to put it in the fridge in small portions. Perishable foods (meat, seafood, dairy, sliced fruits, some vegetables, and cooked leftovers) should be refrigerated before two hours. If food is exposed to temperatures above 90°F, refrigerate it within an hour. Thaw frozen foods safely in the refrigerator, cold water, or microwave. Do not defrost food on the counter, as bacteria grow rapidly on the parts of the food that reaches the room temperature.