

# ■ Sanitation and Food Handling

## Sanitation Standards

Under terms of the School Lunch and Breakfast Agreement, districts agree to maintain proper sanitation and health standards in conformance with all applicable state and local laws.

The Colorado Department of Education Nutrition Unit recommends that each school refer to the *Rules and Regulations Governing the Sanitation of Food Service Establishments in the State of Colorado* from the Colorado Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, CO 80222-1530. [www.cdphe.state.co.us/regulations/consumer/101002RetailFood.pdf](http://www.cdphe.state.co.us/regulations/consumer/101002RetailFood.pdf)

## HACCP

Section 111 of the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108-265) amended section 9(h) of the Richard B. Russell National School Lunch Act by requiring school food authorities (SFAs) to implement a food safety program for the preparation and service of school meals served to children in the school year beginning July 1, 2005. The program must be based on Hazard Analysis and Critical Control Point (HACCP) principles and conform to guidance issued by the Department of Agriculture (USDA). All SFAs must have a fully implemented food safety program that complies with HACCP principles or with this optional guidance no later than the end of the 2005 – 2006 School Year.

HACCP is a systematic approach to construct a food safety program designed to reduce the risk of foodborne hazards by focusing on each step of the food preparation process-- from receiving to service. More information regarding the traditional approach to HACCP may be found at

<http://www.fda.gov/downloads/Food/FoodSafety/RetailFoodProtection/ManagingFoodSafetyHACCPPrinciples/Regulators/UCM078159.pdf>

USDA recommends that SFAs use the Process Approach to HACCP because it gives them flexibility to create a program suitable for a variety of situations. The Process Approach, originally developed by the Food and Drug Administration for retail food establishments, categorizes food preparation into three broad categories based on how many times each menu item moves through the temperature danger zone. This guidance presents a modified version of the Process Approach to make it practical for school foodservice operations.

<http://www.cde.state.co.us/nutrition/nutriHACCPplan.htm>

Serving safe food is a critical responsibility for school foodservice and a key aspect of a healthy school environment. Keeping foods safe is also a vital part of healthy eating and a recommendation of the *Dietary Guidelines for Americans*. When properly implemented, HACCP-based food safety programs will help ensure the safety of the school meals served to children across the Nation.

The SFA is responsible for developing a comprehensive food safety program for their jurisdiction, including a plan for every school food preparation and service site. A school food safety program must include the following elements:

1. Documented Standard Operating Procedures (SOPs)

SOPs are step-by-step written instructions for routine food service tasks that affect the safety of food ('nonspecific' hazards), such as proper dishwashing procedures, or for tasks that are a part of the HACCP-based plan (specific hazards), such as proper cooking procedures. Each SOP should include instructions on monitoring, documentation, corrective actions, and periodic review of the procedures they cover. Adherence to SOPs allows food service managers and employees to effectively control and prevent hazards.

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2. A written plan at each school food preparation and service site for applying HACCP principles that includes methods for:

- Documenting menu items in the appropriate HACCP process category
- Documenting Critical Control Points of food production
- Monitoring
- Establishing and documenting corrective actions
- Recordkeeping
- Reviewing and revising the overall food safety program periodically

### CDE HACCP Resources

The Nutrition Unit has developed a prototype HACCP plan for districts to customize and adapt to each kitchen. Go to: <http://www.cde.state.co.us/nutrition/nutriHACCPplan.htm>

### Reheating Potentially Hazardous Foods

From *Rules and Regulations Governing the Sanitation of Food Service Establishments in the State of Colorado, Section 2-406, Food Preparation, page 11: (6) Reheating*. Potentially hazardous foods that have been cooked and then refrigerated, shall be reheated rapidly to 165 °F (74° C) or higher throughout before being served or before being placed in a hot food storage facility. Steam tables, bainmaries, warmers and similar hot food holding facilities are prohibited for the rapid reheating of potentially hazardous foods.

### Handling Precooked Meat Patties

Precooked meat patties, such as charbroiled beef patties and pre-browned fresh pork sausage patties, have caused outbreaks of foodborne illness from contamination with *Salmonella* or with a strain of *E. coli* bacteria. It is important to remember that many precooked patties are not ready to eat. With proper handling and heating to finish the cooking process, they are safe.

The USDA advises foodservice institutions and commercial kitchens to keep all meat patties refrigerated or frozen before use. Refrigerated patties should be used promptly, within three to four days of refrigerated storage. These practices will prevent the growth of harmful bacteria. The precooked patties must be thoroughly heated to eliminate any harmful bacteria that might be present.

### E. coli

*Escherichia coli* are a group of bacteria normally found in the intestines of warm-blooded animals, such as food animals or humans, and in water contaminated by animal or human feces. *E. coli* are most often associated with intestinal illness or diarrhea in infants and in travelers who have consumed impure water or unpasteurized milk. It is not known at what level or dose the pathogen becomes hazardous.

### Characteristics of *E. coli* 0157:H7

In 1982 a rare and more virulent strain, *E. coli* 0157:H7, was identified as the cause of two outbreaks of human gastrointestinal illness. *E. coli* 0157:H7 is a pathogen that can survive refrigeration and freezer storage. If present, the bacterium can multiply very slowly at 44°F. Low numbers of *E. coli* 0157:H7 could produce infections in infants and the elderly or immune-compromised. However, the infectious dose for humans has not been determined.

Approximately 62,000 cases of *E. coli* infections from food occur each year in the United States, according to the USDA's Food Safety and Inspection Service (FSIS) draft report released 11/2001. Of these cases, 1800 require hospitalization and 2 result in death. The report, based on research conducted over the past three years, evaluates the risk of illness from *E. coli* 0157:H7 in ground beef.

*E. coli* 0157:H7 are found in intestines of animals and humans and can be transmitted through contact with fecal matter during the slaughtering process and unsafe food handling. Person-to-person transmission has been documented. The majority of foodborne outbreaks recorded since 1982 have either implicated or associated undercooked ground beef as the primary source of infection. While *E. coli* 0157:H7 can be a severe contaminant, the FDA Food Code's recommendation of cooking ground beef to an internal temperature of 155°F or above for 15 seconds can control it.

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In September of 1999, New York state was hit by the largest *E.coli* outbreak when more than 150 people (mostly children) became infected at a fair. Apparently, surface runoff from a nearby cow holding area seeped into the soil around a well and infected the water with *E.coli* 0157:H7.

Another outbreak associated with water occurred in the state of Washington. Eighty-three percent of those infected have been linked to swimming in a lake contaminated with animal feces. Most of the afflicted in this outbreak were children as well.

### **Colorado Retail Food Establishment Rules and Regulations**

[www.cdphe.state.co.us/regulations/consumer/101002RetailFood.pdf](http://www.cdphe.state.co.us/regulations/consumer/101002RetailFood.pdf)

### **Selected Web Sites for Food Safety Information**

- FoodSafety.gov – [www.foodsafety.gov/](http://www.foodsafety.gov/)
- USDA Nutrition and Food Safety Information – [www.fns.usda.gov/fns/food\\_safety.htm](http://www.fns.usda.gov/fns/food_safety.htm)
- Colorado State University Cooperative Extension – [www.ext.colostate.edu/safefood/index.html](http://www.ext.colostate.edu/safefood/index.html)
- USDA Food Safety and Inspection Service – [www.usda.gov/agency/fsis/homepage.htm](http://www.usda.gov/agency/fsis/homepage.htm)
- Centers for Disease Control and Prevention – [www.cdc.gov/foodsafety/](http://www.cdc.gov/foodsafety/)
- International Food Information Council – [www.foodinsight.org/Resources/Food-Safety.aspx](http://www.foodinsight.org/Resources/Food-Safety.aspx)
- American Meat Institute – [www.meatami.org/](http://www.meatami.org/)
- FDA Food Information Line: 1 (888) SAFE FOOD [www.fda.gov/Food/FoodSafety/default.htm](http://www.fda.gov/Food/FoodSafety/default.htm)
- Iowa State University Extension & Outreach HACCP in Schools-  
<http://www.extension.iastate.edu/HRIM/HACCP/haccpinschools.htm>

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#### Cooling Potentially Hazardous Foods

Cooked potentially hazardous food shall be cooled from 135°F to 70°F, or below, within two hours; and from 70°F to 41°F, or below, within four hours.

#### Cooling Methods

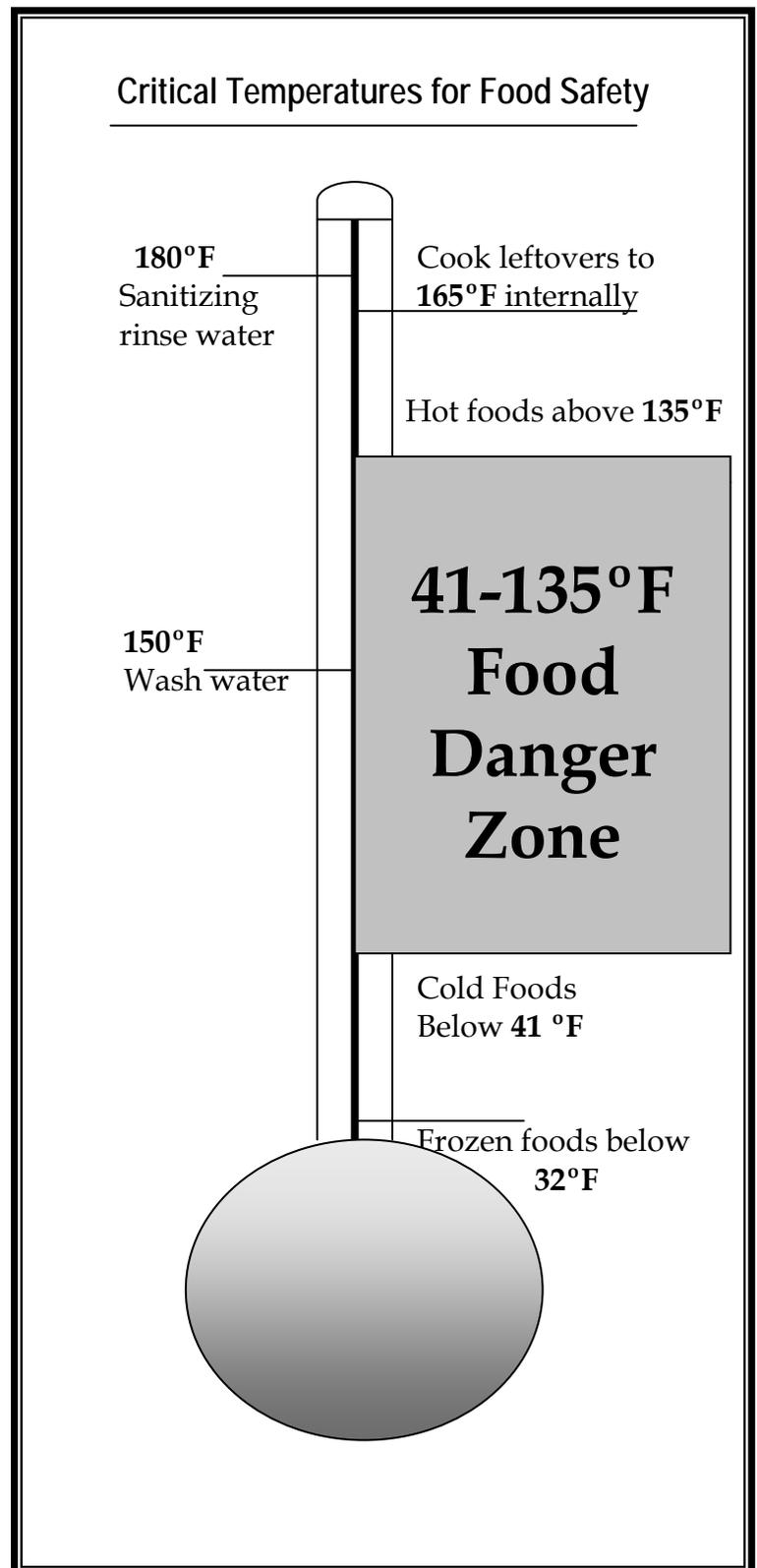
Cooling shall be accomplished by using one or more of the following methods based on the type of food being cooled:

1. Place the food in shallow pans;
2. Separate the food into smaller or thinner portions;
3. Use rapid cooling equipment;
4. Stir the food in a container placed in an ice water bath;
5. Use containers that facilitate heat transfer;
6. Add ice as an ingredient; or
7. Other effective methods that meet the requirements of *section 3-502 of the Colorado Retail Food Establishment Rules and Regulations*.

When using food containers to cool food, food shall be:

1. Arranged in the container to provide maximum heat transfer through the container walls; and
2. Loosely covered, or uncovered if protected from overhead contamination during the cooling period to facilitate heat transfer from the surface of the food.

Recommended Internal Temperatures	
<i>Milk and shell eggs</i> may be received at temperatures according to their distribution-but, must be chilled to 40°F within 4 hours.	
<b>Poultry, Stuffed Food</b>	<b>165°F</b>
<b>Eggs, Fish, Beef Roasts</b>	<b>145°F</b>
<b>Raw Pork, Ham, Sausage</b>	<b>145°F</b>
<b>Ground Beef, Game</b>	<b>155°F</b>
<b>Commercially pre-cooked ready-to-eat meat</b>	<b>140°F</b>
<b>Processed Meat Items</b>	<b>135 °F</b>
<b>Vegetables</b>	<b>135°F</b>
<b>Leftovers</b> must be <u>rapidly</u> reheated to <b>165°F</b>	
<b>Microwave cooking:</b>	
<ul style="list-style-type: none"> <li>• Cook <i>animal foods</i> to 165°F; stir &amp; turn.</li> <li>• Reheat all leftovers to 165°F and let sit for 2 minutes.</li> </ul>	
<i>Colorado State Health Rules &amp; Regulations, 2006</i>	



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CHARACTERISTICS OF COMMON FOODBORNE ILLNESSES				
Bacteria	Found	Onset	Symptoms	Transmission
<i>Salmonella</i>	Intestinal tract of feces of animals; <i>Salmonella</i> enteritidis in raw shell eggs.	8-72 hours	Stomach pain, diarrhea, nausea, chills, fever and headache; may last 1 to 2 days.	Raw or undercooked eggs, poultry and meat; raw milk and dairy products; seafood and food handlers.
<i>Staphylococcus aureus</i>	On humans (skin, infected cuts, pimples, noses, and throats).	1-6 hours	Severe nausea, abdominal cramps, vomiting and diarrhea; recovery within 2 to 3 days – longer if severe dehydration occurs.	Food handlers who carry the bacteria on skin in pimples or cuts; who cough or sneeze on food.
<i>Clostridium perfringens</i>	Soil, dust, sewage, and intestinal tracts of animals and humans. Grows only in little or no oxygen.	8-24 hours	Diarrhea and gas pains; usually last about 1 day, but less severe symptoms may persist for 1 to 2 weeks.	Called “the cafeteria germ” because many outbreaks result from food left for long periods in steam tables or at room temperature. Bacteria destroyed by cooking, but some toxin-producing spores may survive.
<i>Campylobacter jejuni</i>	Intestinal tracts of animals and birds, raw milk, untreated water, and sewage sludge.	2-5 days	Fever, headache and muscle pain followed by diarrhea (sometimes bloody), abdominal pain and nausea; may last 7 to 10 days.	Contaminated drinking water; raw milk; and raw or undercooked meat, poultry or shellfish.
<i>Shigella</i> (more than 30 types)	Human intestinal tract; rarely found in other animals.	12-50 hours	Diarrhea containing blood and mucus, fever, abdominal cramps, chills and vomiting; can last a few days to 2 weeks.	Person-to-person by fecal-oral route; fecal contamination of food and water. Most outbreaks result from food, especially salads, prepared and handled by workers using poor personal hygiene.
<i>E. coli</i> 0157:H7	Intestinal tracts of some mammals, raw milk, unchlorinated water; one of several strains of <i>E. coli</i> that can cause human illness.	2-5 days	Diarrhea or bloody diarrhea, abdominal cramps, nausea and malaise lasting about 8 days. Some, especially the very young, have developed Hemolytic Uremic Syndrome (HUS) that causes acute kidney failure. A similar illness, Thrombotic thrombocytopenic purpura (TPP), may occur in older adults.	Contaminated water, raw milk, raw or rare ground beef, unpasteurized apple juice or cider, uncooked fruits and vegetables; person-to-person.

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CHARACTERISTICS OF COMMON FOODBORNE ILLNESSES (CONT.)				
Bacteria	Found	Onset	Symptoms	Transmission
<i>Clostridium botulinum</i>	Widely distributed in nature; soil, water, on plants and intestinal tracts of animals and fish. Grows only in little or no oxygen.	18 - 36 hours (can sometimes appear as few as 4 hours or as many as 8 days).	Toxin affects the nervous system: double vision, droopy eyelids, trouble speaking and swallowing and difficulty breathing. Fatal in 3 to 10 days if not treated.	Bacteria produce a toxin that causes illness. Improperly canned foods, garlic in oil, vacuum-packaged and tightly wrapped food.
<i>Listeria monocytogenes</i>	Intestinal tracts of humans and animals, milk, soil, leaf vegetables; can grow slowly at refrigerator temperatures.	2-3 days to 3 weeks	Fever, chills, headache, backache, sometimes upset stomach, abdominal pain and diarrhea; may take up to 3 weeks to become ill; may later develop more serious illness in at-risk patients (e.g., pregnant women and newborns, older adults, and people with weakened immune systems).	Ready-to-eat foods such as hot dogs, luncheon meats, cold cuts, fermented or dry sausage, and other deli-style meat and poultry, soft cheeses and unpasteurized milk. Illness is caused by bacteria that do not produce toxin.

-Source: USDA Food Safety and Inspection Service/FDA Center for Food Safety and Applied Nutrition

For detailed information on foodborne pathogens, access FDA's "Bad Bug Book" at:

<http://www.fda.gov/Food/FoodborneIllnessContaminants/CausesOfIllnessBadBugBook/>

WHAT TO DO IF YOU SUSPECT FOODBORNE ILLNESS
<ol style="list-style-type: none"> <li>1. Call the local or state health department.</li> <li>2. Notify food services director.</li> <li>3. Keep all leftovers of the suspected foods and mark "DO NOT USE".</li> <li>4. Do not discard sample food trays.</li> <li>5. Obtain name, address and phone number of the customer; when they ate (time and date), what they ate, if anything tasted bad, when it was eaten; and what time the person got sick and all the symptoms.</li> </ol>