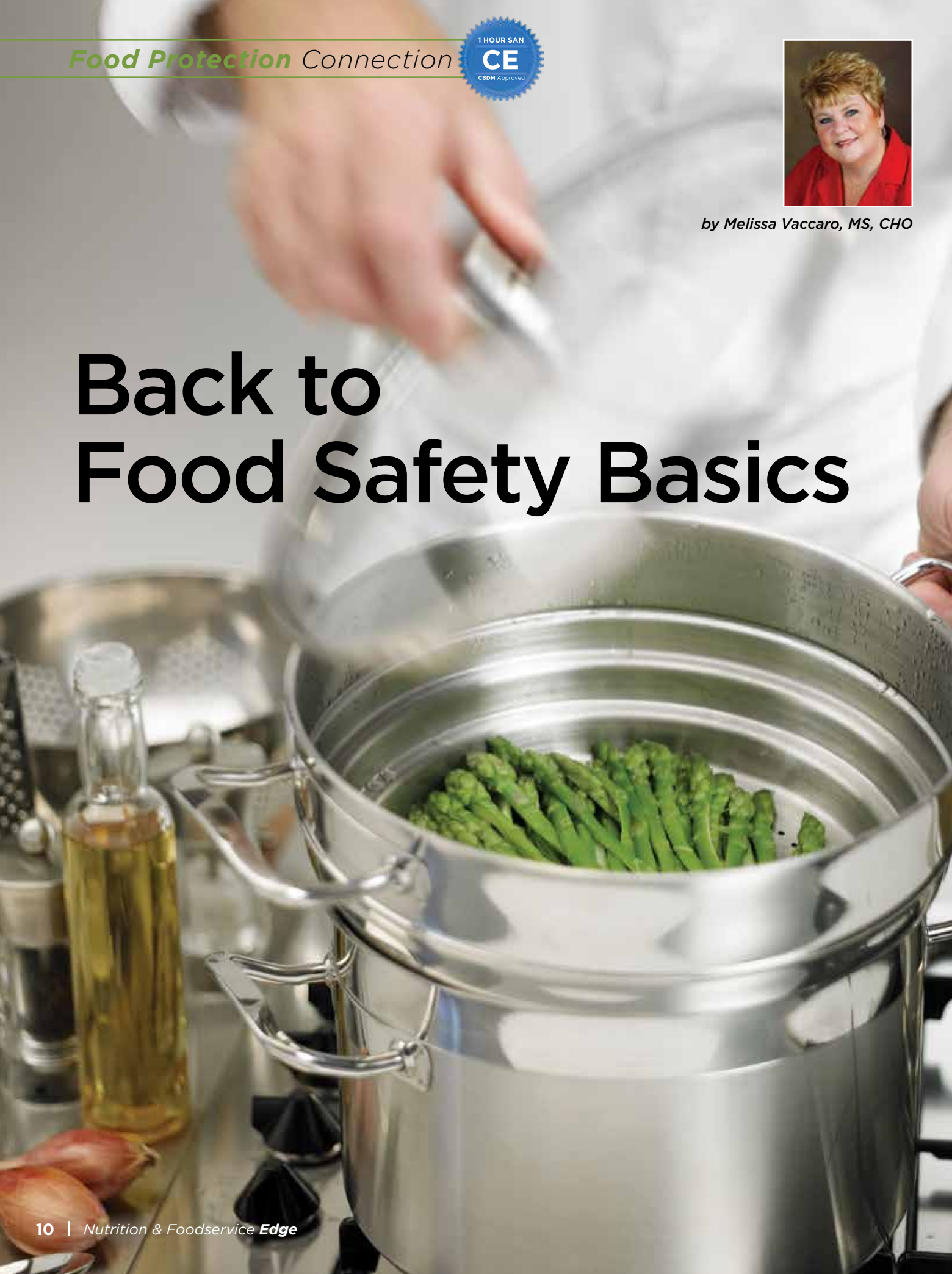




by Melissa Vaccaro, MS, CHO

# Back to Food Safety Basics



It's always good to take a moment to refresh your skills and memory. Are you up to date with the current codes? Are your documents, SOPs, and plans updated? Before the busy holiday season is upon us, take the time to pause and refresh your food safety knowledge and resources.

Because of science and technology, food safety is always ever-so-slightly changing and advancing. The Food and Drug Administration updates the Food Code every two years. The 2013 FDA Food Code will soon be available. It's important to keep up with these changes.

This article will update you on the most current FDA Food Code requirements for food safety, time and temperature, along with various food safety fundamentals. It's wise to review these FDA requirements with your regulatory agency in case they have different standards.

## COOKING TEMPERATURES

Cooking provides a lethal kill step to assure that pathogens, if present, are reduced to an acceptable level. Any raw animal foods not cooked to these temperatures must provide a consumer advisory. Facilities serving highly susceptible populations—such as hospitals, nursing homes, and daycares—may not offer undercooked or raw animal foods. A children's menu at a retail food establishment may not offer undercooked comminuted meat such as hamburgers. Temperatures are measured internally, except as noted.

### 145° F for 15 seconds

- Eggs (for immediate service)
- Fish, including all mollusks and aquatic life
- Meat (cattle, swine [pork], sheep, goat, other edible meats, game animals commercially raised or under voluntary inspection)

### 155° F for 15 seconds

*(Alternative exist: 145°F for 3 minutes, 150°F for 1 minute, or 158°F for 1 second)*

- Eggs (for hot holding)

- Ratites
- Mechanically tenderized and injected meats
- Comminuted fish, meat, and game animals commercially raised or under voluntary inspection

### 165° F for 15 seconds

- Poultry
- Baluts
- Wild game
- Stuffed fish, meat, pasta, poultry, ratites
- Stuffing containing fish, meat, pasta, poultry, ratites
- Microwaved raw animal food (2 minutes stand time prior to service)

### Varying Temperatures

Beef and pork roast cooking temperatures are size and oven temperature dependent (3-401.11(B)(1)(2)). Example: A roast weighing 8 lbs. can be placed in a 350°F still dry oven and cooked to an internal temperature of 130°F and held for 112 minutes prior to serving.

### 135° F for 15 seconds

- Fruits and vegetables for hot holding

### 145° F, surface temperature

Raw or undercooked 'whole muscle intact beef steaks' must be cooked top and bottom to a surface temperature of 145°F and not offered to a highly susceptible population.

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## “ ” Thawing incorrectly

provides a great opportunity for bacteria to thrive and even produce toxins.

### COOLING

Cooling is often not done correctly. To add insult to injury, the process of cooling takes 6 hours and most facilities simply do not track the process to see if it is indeed happening correctly. It is often assumed that cooling is happening right simply because the food was put in the refrigerator. From a regulatory perspective, this is the hardest risk factor to monitor and verify on inspection. Most inspectors are not in facilities long enough to see the entire process of cooling, and therefore need to rely on interviews and log sheets to verify the process. When cooling, foods do not need to be covered. Use shallow pans, thinner portions, containers that facilitate heat transfer, and any method such as cooling sticks, ice baths, or cooling equipment to facilitate rapid cooling, especially during the first phase of cooling to 70°F. Your time clock for cooling does not need to start the minute the food is removed from temperature control; it starts when the food reaches 135°F.

1. Within 2 hours cool from 135°F to 70°F **and** within a total of 6 hours move from 135°F to 41°F. If you can cool your food to 70°F in 1 hour, then you have an additional 5 hours to move the food to 41°F.
2. TCS (Time/Temperature Controlled for Safety; aka: Potentially Hazardous Food) foods must be cooled within 4 hours to 41°F if they are prepared from ingredients that are at ambient temperatures (-70°F). Example: Canned tuna

### REHEATING

Reheating times/temperatures are required when TCS foods will be reheated for *hot holding*. If hot holding is *not* going to occur, then the food can be reheated to any temperature for immediate consumption.

- TCS foods must be reheated for hot holding to 165°F or above within 2 hours.

### THAWING

A big misconception is that freezing kills everything. This is not the case. Though freezing does prevent microbial growth, it does not usually destroy all microorganisms. Thawing incorrectly then provides a great opportunity for bacteria to thrive and even produce toxins. If bacteria or toxins are formed and you decide to re-freeze the food, you will in essence preserve those bacteria and toxins for the next thaw. There are generally four approved thawing methods for TCS foods. Slacking is *not* the same as thawing.

#### Method 1

Under refrigeration (41°F or below). This may take a few days.

#### Method 2

Submerged in 70°F or below running water that is sufficient in flow to push off loose particles. This thaw process should not allow any part of the food to rise above 41°F. If raw animal food does go above 41°F, the total time above 41°F should never exceed 4 hours, including thawing and preparation or cooling back to 41°F. You must be cautious that this thaw method does not cross-contaminate other foods that may be prepared nearby, such as salad mixes or other ready-to-eat foods. Sinks used must be washed, rinsed, and sanitized prior to thawing and after thawing is complete.

#### Method 3

Thawing as part of the cooking process. This is the freezer to oven concept. Proper cooking temperatures must be met.

#### Method 4

Any procedure may be used if a frozen ready-to-eat food is thawed and prepared for immediate service for a consumer's individual request.

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## Answers to FPC Review Questions

CDMs who answer the FPC Review Questions on page 14 of this issue can check their responses against the answer key found on page 39. This "self check" allows you to confirm your understanding of the test questions.

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### HOT AND COLD HOLDING

Unless you are using time as a public health control, all TCS foods must be maintained out of the danger zone.

- Hot foods must be maintained at 135°F or above.
- Cold foods must be maintained at 41°F or below, unless otherwise allowed by law. Example: eggs and milk can be maintained at 45°F in most jurisdictions.

### HANDWASHING

Handwashing thoroughly and often is extremely critical in foodservice facilities. Contaminated hands are often the source of foodborne illness. Good hand hygiene in any establishment must be emphasized often. It must be controlled, evaluated, enforced, and reinforced all of the time. We are all human. We get busy and focused on our work. But we must be cognizant of our hands at all times.

- **Handwashing**—To wash hands properly, use running water at a temperature of 100°F or above with soap. Handwashing should occur for 15-20 seconds, which will seem like a lifetime! Rinse and use a dry paper towel.

### WAREWASHING

Washing dishes and equipment should not be overlooked. Keeping food contact surfaces clean and sanitized will reduce the chance of cross-contamination within the facility.

1. Scrape off excess food
2. Wash with soap or an approved cleaner (~110°F)
3. Rinse with clear water
4. Sanitize with an approved sanitizer at the correct strength (check with test papers)
5. Air dry

To sanitize, there are two basic options: chemical sanitizing or heat sanitizing. The FDA Food Code has extensive requirements for manual vs. mechanical sanitizing/dishwashing, but generally:

#### Chemical Sanitizing

*(Concentrations and minimum temperatures)*

- **Chlorine:** ~50ppm-100ppm @ 55°F-100°F (dependent on the pH of the water)
- **Quaternary ammonium ('Quat'):** ~200ppm-400ppm @ 75°F

- **Iodine:** ~12.5-25 mg/L @ 68°F

*Note:* Always follow the manufacturer's labeling instructions. Sanitizer test strips must be used to verify the concentration.

#### Heat Sanitizing

- **Mechanical:** 180°F—Final rinse (not above 194°F)
- **Manual:** 171°F—Final immersion rinse

In this changing and innovative world, chemicals are often being reformulated or being made new and better. When using any chemical, follow the EPA-approved label instruction for approved use, concentration, and temperature parameters.

### SOURCES OF FOOD

Always know the source of your food. Is that source under inspection and approved to sell this food item to you? It may seem wonderful to want to buy local products and incorporate them into your facility, but you must verify that the production of that food is approved. If you don't know where it came from, don't use it!

The Centers for Disease Control and Prevention (CDC) estimates that 1 in 6 Americans gets a foodborne illness annually. Tens of millions of people are sickened annually from foodborne illnesses and thousands are killed. Food safety is a shared responsibility between government, industry, and consumers. All play a vital role. Foodborne illness costs billions of dollars in healthcare-related costs and industry costs annually. The good news is that due to knowledge, education, and implementation of sound food safety practices, the CDC reports that most foodborne illnesses are declining (down 27-57 percent) in the US, with only Salmonella (up 3 percent) and Vibrio (up 115 percent) not declining.

We will continue to make good headway if we all work together to remember basic food safety concepts, risk factors, and control measures that keep our food safe. Never lose sight of the basics, and continually educate or refresh yourself and employees regularly. ☺

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