NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION

PROFESSIONAL FOOD MANAGER POWERPOINT PRESENTATION

Chapter 8 | Safe Food Handling

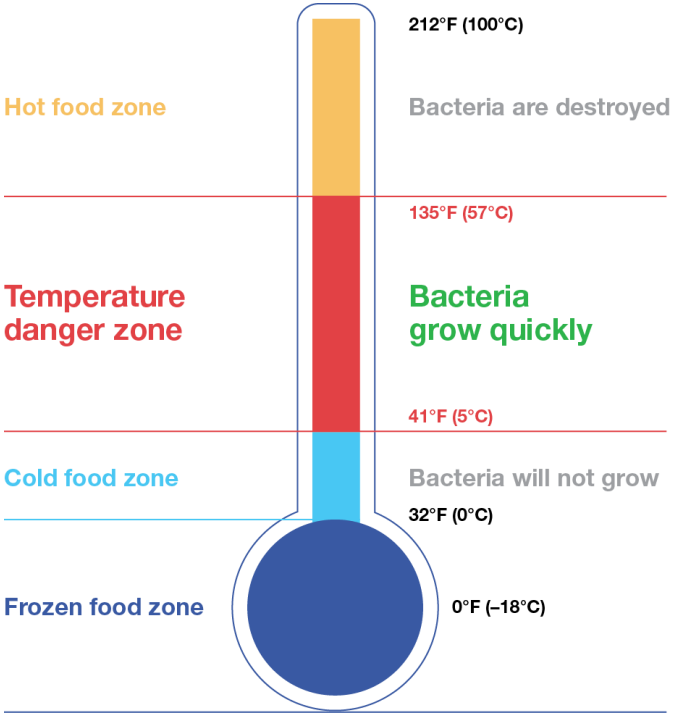
NEHA
EDUCATION & TRAINING

Overview

After completing this lesson, you should be able to:

- Describe the importance of time and temperature controls in food safety.
- List the ways to avoid potential hazards during food preparation.
- Explain how to avoid potential food safety hazards involved in cooking food.
- Describe how to avoid potential hazards involved in cooling and reheating food.
- Explain the potential hazards associated with holding and serving safe food.

Lesson 1: Time and Temperature

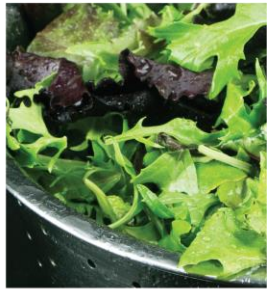


- In order to protect food, it is important to minimize the amount of time food spends in the **temperature danger zone** (also known as the TDZ).

Lesson 1: Time and Temperature

- Time/temperature control for safety (TCS) food is particularly important to monitor.



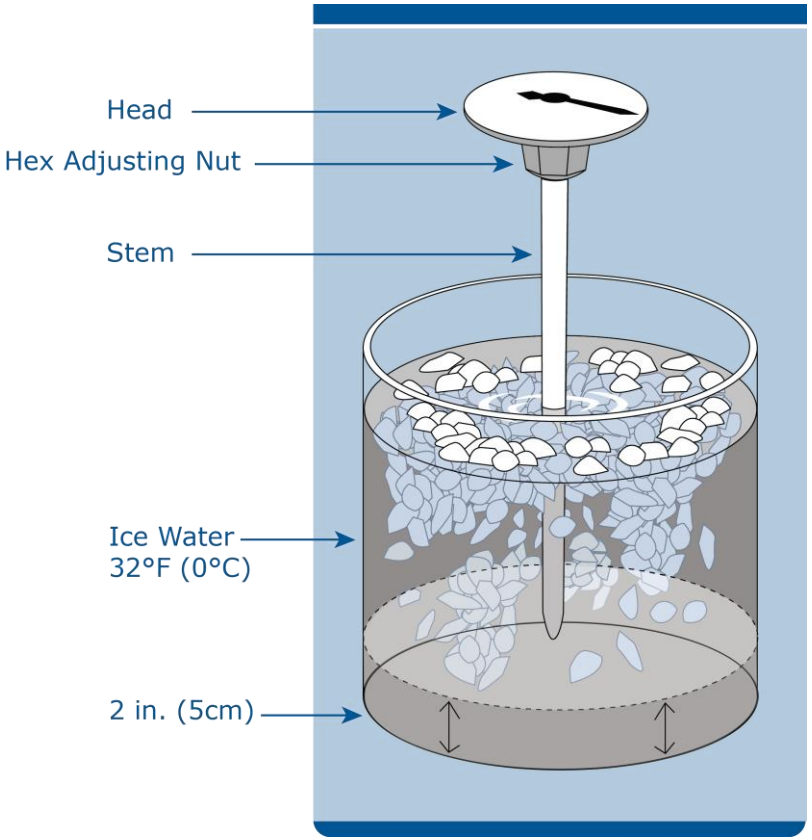
Lesson 1: Time and Temperature

- Time as a public health control
  - Time without temperature control.
  - The food has an initial temperature of 41°F (5°C) or less when removed from cold holding temperature control, or 135°F (57°C) or greater when removed from hot holding temperature control.

Lesson 1: Time and Temperature

- Thermometers
  - Types:
    - Bi-metal stem
    - Infrared
    - Thermocouples
  - Acceptable range in a food establishment is 0°F to 220°F (–18°C to 104°C) with a variance of +/– 2°F (1°C).

Lesson 1: Time and Temperature



Lesson 1: Time and Temperature

Thermocouples and Infrared Thermometers

Lesson 2: Preparation

- The main hazards most likely to occur during food preparation are:
  - Cross-contamination – separate raw and RTE foods
  - Time/temperature abuse – minimize time in the TDZ

Lesson 2: Preparation

- Thawing
  - Never at room temperature
  - Away from RTE foods
  - Clean and sanitize area after thawing
  - Refrigerate or cook immediately

Lesson 3: Cooking

- The main hazards in the cooking or processing stage are:
  - Survival of bacteria as a result of inadequate cooking
  - Multiplication of bacteria as a result of prolonged cooking at low temperatures
  - Contamination

Lesson 3: Cooking

- Specific cooking procedures apply to certain foods

  - Eggs
  - Ground beef and meats
  - Beef steaks
  - Poultry
  - Fish
  - Pork, veal, lamb chops
  - Tenderized meats
  - Stuffing and stuffed foods
  - Fruits and vegetables
  - Commercially raised game and birds
  - Leftovers
  - RTE foods
  - Roasts
  - Cubed beef or fish

Lesson 3: Cooking

- Roasts, including beef roasts, corned beef, pork roasts, and ham, must be cooked to specific internal temperatures.

Roast Temperature	Time (in minutes)
130°F (54°C)	112
131°F (55°C)	89
133°F (56°C)	56
135°F (57°C)	36
136°F (58°C)	28
138°F (59°C)	18
140°F (60°C)	12
142°F (61°C)	8
144°F (62°C)	5
145°F (63°C)	4

Lesson 3: Cooking

- Beef or fish cut up into small pieces should be cooked according to specific minimum temperatures:

Temperature	Time
145°F (63°C)	3 minutes
150°F (66°C)	1 minute
155°F (68°C)	15 seconds
158°F (70°C)	< 1 second

Lesson 3: Cooking

- **Noncontinuous cooking**
  - Cooked no longer than 60 minutes initially
  - Immediately cooled and stored after heating
  - All parts of the food are reheated to the cooking guidelines prior to service
  - Clearly written procedures approved by the local regulatory authority

Lesson 4: Cooling and Reheating

- Hazards associated with cooling and reheating include:
  - Multiplication of food poisoning bacteria not destroyed during cooking
  - Contamination of food by bacteria, foreign bodies, or chemicals
- Controlling the processes of cooling and reheating food before serving it to customers is very important to the overall flow of food from purchase to service.

Lesson 4: Cooling and Reheating

- Cooling

  - **Blast chiller**: Rapid cooling refrigeration units.
  - **Ice bath**: The method of cooling food in which a container holding hot food is placed into a sink or larger container of ice water. The ice water surrounding the hot food container disperses the heat quickly.
  - **Ice paddles**: Plastic paddles filled with ice or water and then frozen; they are used to stir hot food to cool it quickly.

Lesson 4: Cooling and Reheating

- Cooling times
  - From 135ºF to 70ºF (57ºC to 21ºC) within two hours
  - From 70ºF to 41ºF (21ºC to 5ºC) within four hours
    - Or from 135ºF to 41ºF (57ºC to 5ºC) within a **total** of six hours
  - Vital to cool TCS foods as quickly as possible

Lesson 4: Cooling and Reheating

- **Reheating**: The process of heating previously cooked and cooled foods to the proper temperature.

Lesson 5: Service

- Service hazards
  - Multiplication of bacteria if not served quickly
  - Time before service – standards for disposal of food
  - Separate raw and RTE food equipment and utensils
  - Previously served food cannot be re-served
  - Improperly handled ice

Lesson 5: Service

- Hot holding

Lesson 5: Service

- Displayed food
  - Keep cold food cold
  - Only whole fruits, vegetables, and cut, raw vegetables can be stored directly on ice
  - Prewrapped
  - Sneeze guards
  - Utensils – handles longer than display dishes

Questions