

GET CERTIFIED FOOD PROTECTION MANAGER STUDY GUIDE

Keep and study while in the course and study again just before taking the examination.

Lesson 1 – Introduction

- **Highly Susceptible Populations (HSPs)**
 - The very young
 - The elderly
 - The chronically ill
 - Those with immune problems
- **Five Most Common Risk Factors**
 - Purchasing food from unsafe sources
 - Failing to cook food adequately
 - Holding food at improper temperatures
 - Using contaminated equipment
 - Practicing poor personal hygiene
- **Agencies Regulating Food And Food Service**
 - **U.S. Department of Agriculture (USDA)**
 - Regulates meat, poultry, eggs, food crossing state boundaries or involves more than one state
 - **Food and Drug Administration (FDA)**
 - Regulates all food other than meat, poultry and eggs.
 - Publishes Food Code
 - **Center for Disease Control and Prevention (CDC)**
 - Conducts research into causes of illness and assists in investigations
 - **Public Health Service (PHS)**
 - Conducts research into causes of illness and assists in investigations
 - **State and Local Health jurisdictions**
- **Your Role As A Manager**
 - Ensure safety of customer
 - Ensure food is safe from the time it is delivered until food service
 - Ensure rules are in place and followed
 - Ensure staff knows their role
 - Be prepared for inspections
- **Active Management Controls**
 - Create a set of Standard Operating Procedures (SOPs)
 - Ensure SOPs are followed
 - Train Staff
 - Evaluate and revise

Lesson 2 – Foodborne Illness

- **Foods Most Likely to Become Unsafe**
 - **Time and Temperature Controlled for Safety (TCS)** - Milk, chicken, cooked rice, melons, sprouts, vacuum-packaged foods, eggs, meats, fish, and cooked potatoes
 - **Ready-to-eat** - Vegetables, fruits, deli, and bakery items

Microorganisms are small living organisms that can only be seen through a microscope

- **The Three Food Contaminants**
 - **Biological** (also known as Pathogens) – Bacteria, Viruses, Parasites, Fungi
 - **Chemical** – Cleaners, sanitizers, poisons
 - **Physical** – Glass, bandages, dirt, fake fingernails, jewelry

FATTOM = Food, Acidity, Temperature, Time, Oxygen, Moisture

- **Consumer Advisory**

- Statements related to increased risk of eating raw or undercooked animal-derived foods
- Must be on menus and/or menu boards, placards, table tents, or accessible & readable materials

Lesson 3

Bacteria/Virus	Characteristics	Food Most at Risk	Prevention
Shigella spp.	<ul style="list-style-type: none"> • Bacteria found in human feces • Bacteria can remain in feces for weeks after symptoms have ended • Illness occurs when eating or drinking contaminated food or water • Transferred by flies • Only small amount is needed for infection 	<ul style="list-style-type: none"> • Those easily contaminated by hands • Salads with TCS foods • Foods washed in contaminated water 	<ul style="list-style-type: none"> • Exclude food workers with diarrhea who have been diagnosed with illness caused by Shigella spp. • Use proper handwashing techniques • Control flies
Salmonella Typhi	<ul style="list-style-type: none"> • Bacteria found in blood and feces of humans infected with Typhoid Fever • Bacteria can remain in feces for weeks after symptoms have ended • Only a small amount is needed for infection • Severity depends on health of infected individual 	<ul style="list-style-type: none"> • Ready-to-eat foods • Beverages 	<ul style="list-style-type: none"> • Exclude food workers with diarrhea who have been diagnosed with illness caused by Salmonella Typhi • Use proper handwashing techniques • Cook foods to minimum internal temperatures
Non-Typhoidal Salmonella (NTS)	<ul style="list-style-type: none"> • Bacteria carried by farm animals • Only small amount is needed for illness • Severity of symptoms is based on health of impacted person and amount ingested 	<ul style="list-style-type: none"> • Poultry and eggs • Meat • Milk and dairy products • Produce, such as tomatoes, peppers, and cantaloupes 	<ul style="list-style-type: none"> • Cooking poultry and eggs to minimum internal temperatures • Prevent cross-contamination between poultry and ready-to-eat foods • Exclude food workers vomiting or with diarrhea who have been diagnosed with illness caused by Non-typhoidal Salmonella
Shiga toxin-producing Escherichia coli (STEC), (E. coli)	<ul style="list-style-type: none"> • Bacteria found in intestines of cattle • Contamination happens during slaughter • Also found in infected humans and contaminated water • Only small amount is needed for infection • Produces toxins in intestines which causes illness 	<ul style="list-style-type: none"> • Ground beef (raw and undercooked) • Contaminated produce • Unpasteurized fruit juice 	<ul style="list-style-type: none"> • Cook food, especially ground beef, to minimum internal temperatures • Purchase produce from reputable sources • Prevent cross- contamination • Exclude food workers with diarrhea who has been diagnosed with disease caused by E. coli

Bacteria/Virus	Characteristics	Food Most at Risk	Prevention
Hepatitis A	<ul style="list-style-type: none"> • Virus found in humans • Can contaminate water and food • Transferred by contact with food or equipment • Only small amount can cause illness • Very infectious • May not show up for weeks 	<ul style="list-style-type: none"> • Ready-to-eat foods • Shellfish 	<ul style="list-style-type: none"> • Use proper handwashing techniques • Avoid bare hand contact with ready-to-eat foods • Purchase shellfish from reputable suppliers • Exclude food workers diagnosed with Hepatitis A or who have had jaundice for seven days or less • Cooking does not destroy the virus
Norovirus	<ul style="list-style-type: none"> • Virus transferred when infected humans touch equipment or ready-to-eat foods with fingers contaminated with feces • Linked to contaminated water • Only small amount can cause illness • Very contagious, can become contagious within a few hours • Virus remains in feces for days after symptoms have ended 	<ul style="list-style-type: none"> • Ready-to-eat foods • Shellfish 	<ul style="list-style-type: none"> • Use proper handwashing techniques • Avoid bare hand contact with ready-to-eat foods • Purchase shellfish from reputable suppliers • Exclude food workers vomiting or with diarrhea diagnosed with Norovirus

	Characteristics	Foods Most at Risk	Prevention
Biological Toxins	<ul style="list-style-type: none"> • Poison created by plants, animals, mushrooms, and bacteria • Passed through food chain • Cannot be destroyed by cooking or freezing • No odor or taste 	<ul style="list-style-type: none"> • Fish • Shellfish 	<ul style="list-style-type: none"> • Purchase fish and shellfish from reputable suppliers • Control time and temperature when handling raw fish

	Sources	Symptoms	Foods Most at Risk	Prevention
Chemical Contamination	<ul style="list-style-type: none"> • Pesticides • Cleaning Supplies • Cookware such as pewter, copper, zinc, brass, cadmium, lead, or painted pottery 	<ul style="list-style-type: none"> • Vomiting • Diarrhea 	<ul style="list-style-type: none"> • Ready-to-eat foods • Acidic foods 	<ul style="list-style-type: none"> • Use approved chemicals • Keep chemicals in original containers • Store chemicals away from food prep, store, and service areas • Follow manufacturer's directions • Use appropriate kitchenware
Physical Contamination	<ul style="list-style-type: none"> • Hair, fingernails, bandages • Glass • Metal shavings, staples • Fish bones • Dirt • Bits of packaging 	<ul style="list-style-type: none"> • Cuts • Dental damage • Choking • Bleeding • Pain 	<ul style="list-style-type: none"> • All types 	<ul style="list-style-type: none"> • Watch for items that can spill into food • Limit the wearing of jewelry • Wear hair and beard nets • Closely inspect food when receiving it from suppliers • Reject broken or damaged packaging • Take extra precautions when cleaning up broken glass and other broken packaging

Food Adulteration - Food can be contaminated due to low quality ingredients, misbranding, or improper labeling

Intentional Contamination - Food can be contaminated by someone at any point in the food chain for dishonest reasons

- **Steps For Reporting An Outbreak**

1. Identify the food involved
2. Stop selling suspected food and isolate it from other foods
3. Collect information on the person making the complaint
4. Notify local regulatory authority
5. Gather information on food – source, lot number, product date
6. Prevent suspected employees from handling food
7. Cooperate with health department authorities
8. Take steps to correct problem

- **Food Defense System**

- A - Assure
- L - Look
- E - Employees
- R - Reports
- T – Threat

- **Eight Most Common Food Allergens (Big 8)**

- Milk
- Eggs
- Fin Fish
- Shellfish
- Peanuts
- Tree nuts
- Wheat
- Soy

Lesson 4 – Personal Hygiene

- **Good Basic Personal Hygiene Habits**

- Bathe daily with soap and water
- Arrive to work clean
- When possible, change into work clothes at the work location
- Keep fingernails short, well-trimmed, and clean
- Avoid fake fingernails
- Do not use nail polish
- Restrain hair
- Avoid hair accessories
- Remove most jewelry
- Cover wounds or boils
- Do not wipe hands on aprons or other clothing

- **Wash Hands After:**

- Using restroom
- Touching body or clothing
- Coughing, sneezing, blowing nose, or using tissue
- Eating, drinking, smoking, chewing gum, or tobacco
- Handling soiled items
- Taking out garbage
- Touching anything that may be contaminated
- Handling raw meats, seafood, and poultry
- Changing tasks
- Leaving or returning to prep area/kitchen
- Handling money
- **Using electronic devices**
- Handling service animals or aquatic animals
- Handling chemicals

- **Proper Hand Washing**

- Use warm water (100°F)
- Wet hands and arms to elbow
- Apply approved hand soap
- Rub hands and forearms for at least 10 to 15 seconds
- Pay attention to area between fingers, under nails, and fingertips
- Rinse using warm water
- Dry hands and arms with paper towels or air drying machines
- Use paper towel to turn off faucet, and open restroom doors

Avoid bare hand contact with ready-to-eat foods, especially when working with highly susceptible populations

- **Using Single Use Gloves**

- Use along with hand washing
- Use once and discard
- Use especially with ready-to-eat foods that won't be cooked again

- **When To Change Gloves**

- If dirty or torn
- Starting a new task
- After interruption during which contaminated items were touched
- After handling raw meat, poultry, or seafood
- Before handling ready-to-eat foods
- After four hours of continuous use

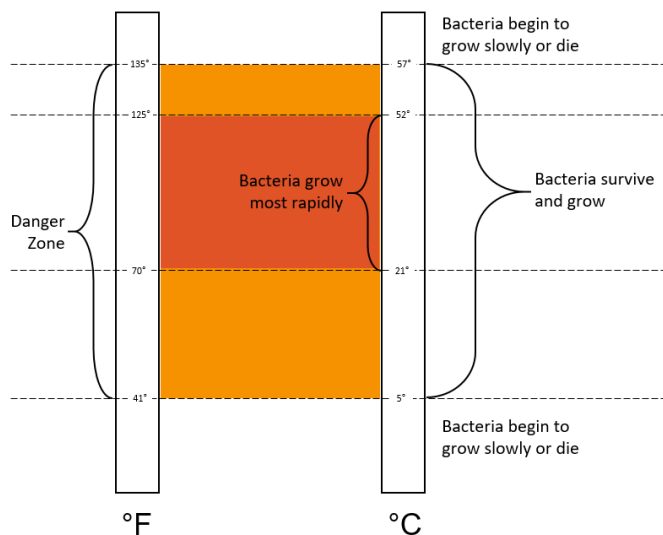
Hand sinks should have signage instructing workers to wash hands, and a garbage container for paper hand towels

Food Worker Illnesses

Worker Symptoms	Actions
Vomiting or Diarrhea	<ul style="list-style-type: none"> • Exclude from operation • Cannot return to work until they have no symptoms for 24 hours and/or medical doctor releases worker to return
Jaundice	<ul style="list-style-type: none"> • Exclude from operation • Report to regulatory agency • Cannot return to work until written medical doctor release and regulatory approval
Sore Throat with Fever	<ul style="list-style-type: none"> • Restrict activity • Exclude if working with HSP • Cannot return to work without medical doctor release
CDC's Big Six	<ul style="list-style-type: none"> • Exclude from operation • Report to regulatory agency • Cannot return to work until they have no symptoms for 24 hours and/or medical doctor releases worker to return
Persistent Sneeze, Cough, Runny Nose	<ul style="list-style-type: none"> • Restrict activity
Infected Wound or Boil	<ul style="list-style-type: none"> • Cover wound • If not covered, restrict activity

Lesson 5 – Keeping Food Safe

TCS Danger Zone



- The Danger Zone is between 41°-135°F This is the range in which bacteria survive and grow.
- Between 70° & 125°F bacteria grow most rapidly.
- Minimizing time that TCS food are kept at this temperature lowers the opportunity for bacteria to grow.
- Above 135°F and below 41°F, bacteria grow more slowly or begin to die.

Thermometers for food storage equipment must be accurate to +/- 3°F

Types of Thermometers

- **Bimetallic Stemmed Thermometer**
 - Measures temperature through metal probe with sensor at the end
 - Good for checking temperatures during receiving and for large and thick foods
 - Can be calibrated
- **Digital Thermometers**
 - Designed to measure surface temperatures
- **Thermocouple and Thermistor**
 - Uses metal probe or sensing area with results displayed on digital readout
 - Doesn't need to be inserted as far so can be used for thick or thin foods
- **Surface Probes**
 - Used to measure temperature of flat cooking surfaces
- **Air Probe**
 - Used to measure inside temperature of ovens and refrigerators
- **Immersion Probes**
 - Used to measure temperature of liquids
- **Penetration probe**
 - Used to measure internal temperature of foods
- **Time and Temperature Indicator (TTI)**
 - Attaches to packaged food, color changes to indicate time and temperature abuse
- **Maximum Registering Tapes**
 - Used inside shipping containers
 - Indicates highest temperature reached

Cross contamination happens when contaminants are transferred from unwashed hands, clothing, food surfaces, or equipment to food items.

Steps when there is a food recall

1. When recall happens, check your stock
2. Immediately remove recalled item to secure location away from other food and equipment
3. Clearly mark product so it won't mistakenly get used
4. Follow manufacturer's or vendor's recommendation on returning or throwing away product

Lesson 6- Purchasing and Receiving

The Flow of Food

- Purchasing
- Receiving
- Storage
- Thawing
- Preparation
- Cooking
- Holding
- Cooling
- Reheating
- Service

Purchasing

- Only purchase food from **trusted sources**
- Manufacturers should follow federal, state, local regulations
- Do not purchase food made in private home or non-regulated facility

Reject deliveries if there are ice crystals, stained packaging, damage, bloating or swelling on or in packaging

Reject food if it has bad odor, is slimy, sticky, or moldy

- Only trained employees should receive deliveries
- Schedule for down times when there is time to inspect and put food away
- Check deliveries, starting with truck
- Check for time and temperature issues
- **"Key Drop" deliveries** are done after hours. Vendor needs to store food in correct location. Shipment needs to be removed at first opportunity

Shell stock tags are required to be kept for 90 days, should indicate when and where harvested and by whom

Non-toxic chemicals can be on same pallet but must be properly packaged and secured

Receiving Temperatures

Most chilled food	At or below 41°F
Hot foods	At or above 135°F
ROP packaged items	At 41°F
Live shellfish	Air: 45°F, internal: 50°F
Shucked shellfish	At 45°F or lower
Fresh fish	At or below 41°F
Produce exceptions - tomatoes, sliced melons, pre-cut produce	Between 33° and 41°F
Frozen food	Hard frozen

Lesson 7- Storing Food

How to Store Food

- Store food and supplies a **minimum of 6 inches above** floor and away from walls
 - Improves air circulation, keeps moisture levels consistent, makes cleaning easier
- **Refrigerator** should keep products at or below 41°F
 - Should have thermometer as part of unit otherwise place thermometer on top shelf near door
- **Ultra-high pasteurized items** can be stored at room temperature, once opens store at or below 41°F
- Store produce refrigerated except for apples, pears, bananas, avocados, citrus fruits, onions, potatoes, eggplant
- **Storage order in refrigerator (from top to bottom)**
 - Ready to eat foods and produce
 - Seafood
 - Whole cuts, beef, and pork
 - Ground meat and ground fish
 - Whole and ground poultry
- **Dry storage should be kept at 50°F**, well ventilated with low humidity
- **Keep items in original packaging** when possible
 - Label if removed from original package
- **Ready-to-eat foods can be stored for no more than 7 days** if held at 41°F
 - Mark food if held longer than 24 hours, Day 1 is day product was prepared or container was opened

- **FIFO - First In, First Out** - food storage method, new food goes to the back so the first food in is the first food used, minimizes spoilage
- Don't mix inventory in storage bins, never put new food on top of old
 - Clean and sanitize between uses
 - Never store food in containers that previously contained chemicals

Storing Non-Food Items

- Store non-food items away from, minimizes risk of contamination from food spilling, splashing, or leaking
- Store toxic substances and chemicals away from food

Discard damaged, spoiled, or incorrectly stored food immediately, keep away from other food items to avoid cross-contamination, label accordingly

Lesson 8- Thawing, Preparing, Cooking, Cooling, Reheating

Danger Zone Guidelines

- Four hours with internal temperature of 41-135°F
- Six hours for cold foods if internal temperature does not exceed 70°F

Four Acceptable Methods for Thawing TCS Foods

- At a temperature of 41°F or lower
- As part of the cooking process
- Under running water at 70°F or lower
- In a microwave if cooked immediately after thawing

ROP packaged frozen fish must be removed from packaging for thawing

Food with time and temperature issues can be reconditioned

"When in doubt, throw it out"

Serving raw or undercooked foods requires a consumer advisory about health risks

All items on children's menu must be cooked to required temperatures

- When partial cooking food, cook no more than 60 minutes, then immediately cool at or below 41°F. Reheat to 165°F

165°F or higher for a minimum of 15 seconds	Whole or ground poultry, stuffed meats, fish and pasta and foods cooked in a microwave
155°F or higher for a minimum of 15 seconds	Ground meat, injected meat, ground fish, and eggs that will be hot-held
145°F or higher for a minimum of 15 seconds	Meat steaks or chops, fish, eggs for immediate service
145°F or higher for a minimum of 4 minutes	Meat roasts
135°F or higher for a minimum of 15 seconds	Processed ready-to-eat foods that will be hot held

Cooling food – Two-Step Process

- From 135° to 70°F within 2 hours From 70° to 41°F within next 4 hours
- Total time is not more than 6 hours.

Cooling Food Methods

- Ice-water bath
- Ice cubes /Cold water
- Blast chiller
- Stir with ice paddle

Lesson 9 – Serving Food Safely

Handling Dishware

- Do not touch eating and drinking surfaces
- Hold plates and bowls by bottom or edges
- Carry glasses on rack or tray
- Hold glasses near bottom or by stem
- Hold cups by handles or saucer
- Hold flatware by stem
- Use tongs or long-handled utensils for serving
- Store glasses upside down on self-draining bar mat or stackable rack

Store non-cooked dairy products at 41°F or below for serving

Bare Hand Contact

- **Avoid contact with ready-to-eat foods**
- Avoid contact with eating surfaces
- Wash hands after handling dirty tableware and utensils

Time on Self-Serve Bars

- Hot food - hold without temperature control for up to 4 hours if food is held at 135°F prior
- Cold food – hold without temperature control for up to 6 hours if food is held at 41°F
- Label time food needs to be thrown out
- Discard at end of 4 or 6 hour time period

If using time instead of temperature as a public health control, written procedures need to be prepared in advance. They must specify compliance with safe temperature requirements, marking the food with proper time limits, and directions for cooking, serving, cooling and discarding the food.

10 – Equipment and Utensils

- **High Temperature Dishwashing machines** must have water at minimum 180 F for final sanitizing rinse
- **Store glassware** at least 6” off floor on non-absorbent surface
- **Store pots and pans** upside down to protect from contaminants
- **Store flatware** and utensils with handles up

Lesson 11 – Facilities and Equipment

- **Floors** – smooth, slip resistant, non-absorbent material, sealed, coving in corners makes for easier cleaning
- **Walls & ceilings** – easy to clean, properly maintained, light colors help reflect light
- **Light bulbs** should be shielded, coated, and shatter resistant
- Keep **water potable** by preventing cross connection of potable water with waste water.
- Use **backflow prevention** methods like air gaps and vacuum breakers to keep waste water from getting into clean water.
- **Back siphonage** is when water pressure drops and causes waste water to be sucked back into the clean water.

Lesson 12– Cleaning and Sanitizing

5 Steps for cleaning and sanitizing

1. Remove food
2. Wash
3. Rinse
4. Sanitize
5. Air dry

Using a three compartment sink

- Clean and sanitize all sinks and drain boards
- Put detergent into first sink in 110°F water
- In second sink, put clean hot water
- In third sink, put water and sanitizer. Use a timer for knowing the time in the sanitizer
- Place items on drain board to air dry

Throw cleaning solutions down a drain, not down the street, storm drain, a toilet, or urinal

Warewashing

- **Stationary rack single-temperature machines** using hot water to sanitize must have minimum water temperatures of 165°F
- **For high-temperature machines**, the final hot water rinse must be at least 180°F at the manifold and hot water heater.

Factors that affect sanitizer effectiveness

- The **concentration** of water and chemicals is not correct. Making it too strong can damage equipment. If too weak, it may not kill pathogens
- **Water temperatures** are too high or too low. Follow manufacturer’s recommendations
- **Surface contact time**: Different sanitizers need different minimum contact times to be effective.
- **Water hardness** can effect pH levels which affect the amount of sanitizer that needs to be used
- **pH levels**, see the chart below

Chemical Sanitizer Use Parameters

	Concentration	Water temperature	Contact Time	pH
Chlorine	50-99 ppm	Between 75° & 100°F	≤7 seconds	Best in 8.0-10.0
Iodine	12.5-25 ppm	≤68°F	≤30 seconds	3.0-5.0
Quats	200 ppm	≤75°F	<30 seconds	varies

Vomit or diarrhea discharge by employee or customer must immediately be cleaned and area sanitized to prevent spread of dangerous pathogens.

Lesson 13 – Pest Control

Work with a **licensed pest control operator (PCO)** to eliminate pests that enter the operation

Basic Rules of Combatting Pests

- Exclusion
- Eliminate food and water
- Deny shelter

Garbage containers must have tight fitting lids, doors, or covers

Discard contaminated food items, clean and sanitize pest tracks back to entry point

Lesson 14 – Active Management & HACCP Systems

FDA Public Health Interventions

- Demonstration of knowledge
- Employee health controls
- Controlling hands as a vehicle of contamination
- Time and temperature parameters for controlling pathogens
- Consumer advisories

HACCP Plan Steps

1. Identify possible hazards and assess risks
2. Identify Critical Control Points (CCPs)
3. Establish Critical Limits and Procedures for CCPs
4. Monitor CCPs
5. Take corrective action
6. Verify HACCP program is working
7. Create effective recordkeeping systems

Have a system of regular self-inspections to be ready for health inspections

Have a written crisis plan in place in case of man-made emergency, natural disaster, or customer illness

Have a Foodborne Illness Incident Report form to use if customers get sick or call to report being sick after leaving

Owners & Managers are responsible for employee training

Additional Study Info

Acronyms you must know

- **SDS** - Safety Data Sheets – Provides safe handling, identification, precautions, PPE, hazards, first aid, manufacturer
- **OSHA** - Occupational Safety & Health Administration
- **HACCP**- Hazard Analysis Critical Control Point
- **SOP** – Standard Operating Procedures
- **PCO** - Pest Control Operators
- **NSF** - National Sanitation Foundation

Federal Government Agencies that oversee food

- **FDA**- Food and Drug Administration
- **USDA** – United States Department of Agriculture
- **CDC** – Centers for Disease Control and Prevention

What makes food unsafe

- Cross Contamination
- Poor personal hygiene
- Incorrect cleaning and sanitizing
- Time and Temperature abuse