



NSF HealthGuard™ Professional Food Manager Certification Training



HealthGuard™
Training Series

Professional Food Manager Certification Training

Version 5.0



Training and Education

Table of Contents

Chapter 1 – Introduction to Food Safety	1
1.1 Introduction to Foodborne Illness	2
1.1.1 Highly Susceptible Population	3
1.1.2 Potentially Hazardous Foods (Time Temperature Control for Safety Food)	4
1.1.3 Five Risk Factors for Foodborne Illness	5
1.1.4 How to Ensure Food Safety	6
1.2 Rights and Responsibilities	7
1.2.1 Consumer Rights	7
1.2.2 Management Responsibilities	7
1.2.3 Person in Charge	8
Chapter 2 – Hazards and Sources of Contamination	19
2.1 Food Safety Hazards	20
2.2 Physical Hazards	20
2.3 Chemical Hazards	21
2.3.1 Food Allergies	22
2.4 Biological Hazards	23
2.4.1 Intoxication vs. Infection	24
2.4.2 Bacteria and FAT TOM	24
2.4.3 Viruses	27
2.4.4 Parasites	28
2.4.5 Fungi, Molds and Yeasts	28
2.4.6 Biological Toxins	29
Chapter 3 – Employee Health and Personal Hygiene	41
3.1 Employee Health and Hygiene	42
3.2 Diseases Not Spread Through Food	45
3.3 Proper Handwashing Technique	45
3.4 Gloves	47
3.5 Clothing, Hair Restraints, Jewelry	48
Chapter 4 – Safe Food Handling	59

- 4.1 Receiving, Storage and FIFO60
- 4.2 Minimum Cooking Temperatures64
- 4.3 Thermometer Calibration67
- 4.4 Holding Temperatures69
 - 4.4.1 Hot Holding70
 - 4.4.2 Cold Holding71
 - 4.4.3 Using Time as a Public Health Control for Food Safety72
- 4.5 Cooling Foods73
- 4.6 Thawing Foods76
- 4.7 Freezing to Control Parasites in Fish77
- 4.8 Date Marking Requirements for Ready-To-Eat Potentially Hazardous Food (Time/Temperature Control for Safety Food)78
- 4.9 Cross Contamination80
- 4.10 Checking Product Temperatures82
- 4.11 Returned Food and Re-Service of Food83
- Chapter 5 – Equipment93**
 - 5.1 Food Equipment, Cleaning and Sanitizing94
 - 5.2 Cleaning94
 - 5.3 Sanitizing97
 - 5.4 In-Place Cleaning and Sanitizing99
 - 5.5 Chemical Usage and Safety100
 - 5.6 Types of Equipment101
 - 5.6.1 Refrigeration Equipment102
 - 5.6.2 Cooking Equipment103
 - 5.6.3 Manual Warewashing104
 - 5.6.4 Warewashing Machines105
 - 5.7 Storage of Clean Utensils and Equipment106
 - 5.8 Cleaning and Maintenance Schedules106
- Chapter 6 – Facilities117**
 - 6.1 Facility Layout, Design and Construction118
 - 6.1.1 Floors, Walls, and Ceilings118
 - 6.1.2 Lighting119

6.2 Handwashing Sinks	120
6.3 Chemicals and Storage	121
6.4 Waste Management Practices	122
6.5 Pests and Pest Control	123
6.5.1 Flies	123
6.5.2 Cockroaches	124
6.5.3 Rodents	125
6.5.4 Integrated Pest Management	126
6.6 Potable and Non-potable Water	127
6.7 Cross Connection Control and Backflow Prevention	128
6.8 Imminent Health Hazards	129
Chapter 7 - Hazard Analysis Critical Control Points (HACCP) . . .	139
7.1 What is HACCP	140
7.2 Food Safety Hazards	141
7.3 The Seven Principles of HACCP	142
7.3.1 Conduct a Hazard Analysis	144
7.3.2 Identify Critical Control Points	144
7.3.3 Establish Critical Limits	145
7.3.4 Monitor Critical Control Points	146
7.3.5 Establish Corrective Actions	147
7.3.6 Validation and Verification	148
7.3.7 Recordkeeping	149
Appendix A – Bacteria, Viruses and Parasites Tables	157
Appendix B – Training Your Employees	163
Appendix C – Response to Foodborne Disease Outbreaks	167
Glossary of Terms	171
References	177
Web Sites and Publications on Food Safety	179
Recognized Exam Providers	183
Chapter Quiz Answers	185
FDA Forms (Inspection, Health Screening, HACCP)	187
Posters (Cooking Temperatures and Handwashing)	193

About This Book

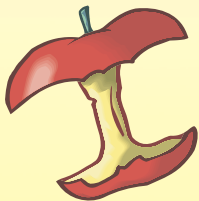
- This course is designed for best presentation when delivered in conjunction with the NSF HealthGuard™ Training CD-Rom available from NSF for NSF recognized trainers.
- NSF encourages trainers who want to use this course to apply to be an NSF recognized trainer by completing the trainer application form at www.nsf.org/training.
- This course can be taught in 8–16 hours, depending upon the local training requirements. The training can be delivered as full day sessions or divided into blocks that fit into work schedules.
- This course will prepare food managers for any of the CFP recognized food manager exams including Thompson Prometric, LLC and the National Registry of Food Safety Professionals exams. Exam ordering information can be found at the back of this book.
- NSF International can customize the contents or presentation of this book to meet your organization's specific training needs.
- Additional training materials and formats, including self-paced CD-ROM training materials and NSF HealthGuard® online training are available from NSF.
- This book reflects the 2009 Food Code. A summary of changes can be found at <http://vm.cfsan.fda.gov>. The *major* changes of interest are:
 - New definitions for cut leafy greens and mechanically tenderized/injected meat(s)
 - Allergen awareness and training standards for employees
 - Criticality changes—including definitions
 - Non-continuous cooking procedures
 - Cut tomato temperature requirements prior to TPHC (time as a public health control)
 - New guidelines for non-heated forced air hand dryers
 - Sanitizer committee recommendations
 - Post sanitizing rinsing guidelines on dish machines
- Please verify that your local authority has adopted the latest Food Code.



**Changes made to this book based on the
2009 Food Code will be highlighted by this symbol**

1

Introduction to Food Safety

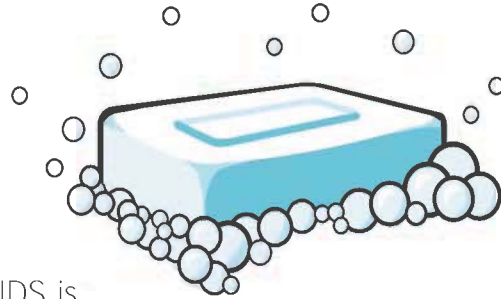


Core Objectives...

- ✓ Understand the dangers associated with foodborne illness.
- ✓ Identify the five major risk factors that contribute to foodborne disease outbreaks.
- ✓ Identify which people are at greatest risk for getting a foodborne illness.
- ✓ Describe the characteristics of potentially hazardous foods.
- ✓ Understand the legal rights of a customer and the responsibility of the food service manager.
- ✓ Understand 17 key elements that the U.S. Food and Drug Administration says the food service manager or person in charge must know.

3.2 Diseases Not Spread Through Food

In addition to knowing about food-borne illnesses, food managers should be aware of diseases that cannot be spread through food. For example, there are no known cases of AIDS or the HIV virus being transmitted through food to consumers. AIDS is not considered a foodborne illness. A food worker who tests positive for the HIV virus is not a threat to food safety because of HIV status and should not be restricted from food handling activities. The **Americans with Disabilities Act (ADA)** protects workers from discrimination and does not allow food managers to terminate or transfer employees based on their HIV status.



Americans with Disabilities Act (ADA): a federal law that prevents discrimination against individuals with disabilities.

3.3 Proper Handwashing Technique

Washing hands is something most people learn at a very early age. It is simple and easy to do. So simple that many people take it for granted. The FDA Food Code specifies how you should wash your hands if you are working in a food establishment. According to the Food Code, effective handwashing takes at least 20 seconds. This includes:

- Wetting hands with warm running water;
- Applying soap;
- Rubbing hands together for 15 seconds, making sure to get soap to all exposed surfaces including in between fingers, under fingernails, and up the forearms;
- Rinsing off soap; and
- Drying hands using single-use paper towels or a warm-air hand dryer.
- Turn off water faucet handles with paper towels.

Summary

- ◆ The health and hygienic practices of food employees have a direct impact on the quality and safety of the food they prepare.
- ◆ Poor personal hygiene increases the risk of food becoming contaminated.
- ◆ Food employees can contaminate food if they are suffering from a food-borne or gastrointestinal illness, if they have a lesion or cut, if they are living with someone who is ill, or if they do not properly wash their hands.
- ◆ A carrier is someone who carries pathogens and transmits them to others without ever becoming ill himself.
- ◆ A food employee must notify the person in charge if he is experiencing diarrhea, fever, vomiting, jaundice, or a sore throat with fever.
- ◆ If a food employee is ill due to *Norovirus*, *Salmonella Typhi*, *Shigella spp.*, Enterohemorrhagic or shiga toxin-producing *Escherichia Coli*, or Hepatitis A, he may not work in a food establishment. (Also known as "big five.")
- ◆ The person in charge is required to maintain the confidentiality of any employee with an illness.
- ◆ The Americans with Disabilities Act (ADA) protects workers from discrimination and does not allow food managers to terminate or transfer employees who have a disease or illness that cannot be spread through food.
- ◆ Effective handwashing takes at least 20 seconds.
- ◆ Handwashing sinks may only be used for handwashing and must be accessible at all times.
- ◆ Hand antiseptics are not a replacement for effective handwashing.
- ◆ Gloves can become contaminated just as easily as hands and are not a replacement for effective handwashing and good personal hygiene.
- ◆ Clothing must be clean. Aprons must be changed as often as necessary to keep them clean.
- ◆ Food employee's hair must be kept from contacting food, clean equipment, utensils, linens, and unwrapped single-use items.
- ◆ The only jewelry item allowed on a food employee is a plain wedding band.
- ◆ Bare hand contact of ready-to-eat foods is prohibited in food establishments.

Employee Health and Personal Hygiene Activity #1

Each of the following statements is either true or false. Mark a "T" for true or an "F" for false in the space provided. If the statement is false, be able to explain why.

1. _____ Wearing gloves when handling RTE food is preferred over handwashing.
2. _____ Hand antiseptics must never be used in place of proper hand washing.
3. _____ Individuals who are HIV-positive or have Hepatitis B should not be allowed to handle food.
4. _____ Food employees are not allowed to work with food if they are experiencing a sore throat with fever, jaundice, diarrhea, vomiting, or a lesion containing pus.
5. _____ A food employee suffering from a foodborne illness is not allowed to work in a food establishment.
6. _____ A food manager is not required to report employee cases of *Shigella* or *Salmonella Typhi* if the employee is already under the treatment of a physician.
7. _____ Food employees must not eat food, drink beverages, chew gum, smoke or chew tobacco while working in a food preparation area.
8. _____ Vaccinations and effective handwashing techniques are ways to reduce the risk of a Hepatitis A outbreak.
9. _____ Because their job duties often do not involve direct contact with food, food managers do not need to wash their hands as frequently as other food employees.
10. _____ Conditional food employees may be required to disclose if they have ever had certain foodborne illnesses (such as Hepatitis A) when they apply for a food handling job.
11. _____ The 2009 FDA Food Code describes the approved methods and steps involved in effective handwashing.
12. _____ The only jewelry allowed on a food worker's hands are plain rings such as wedding bands. Medical alert jewelry is permitted as a necklace.

Hazards and Sources of Contamination Activity #2



- _____ 1. A person's general state of health, his hygienic practices and the cleanliness of his person and clothing. (2 words)
- _____ 2. A wound or injury such as a cut, scratch, boil, or open sore that contains pathogenic microorganisms. (2 words)
- _____ 3. An illness that affects the digestive system (stomach and/or intestine). (2 words)
- _____ 4. One who has a pathogenic microorganism in his system or on his person, but does not show signs of the disease.
- _____ 5. A disease that causes inflammation of the liver and jaundice. (2 words)
- _____ 6. A common symptom of liver diseases where the skin and eyes appear yellow.
- _____ 7. A federal law that prevents discrimination against individuals with disabilities. (initials)
- _____ 8. A liquid, lotion or gel that contains antimicrobial agents that kill microorganisms on the surface of the skin. (2 words)
- _____ 9. A hat, cap, net, clip or other device used to cover or contain hair. (2 words)

Let's Discuss

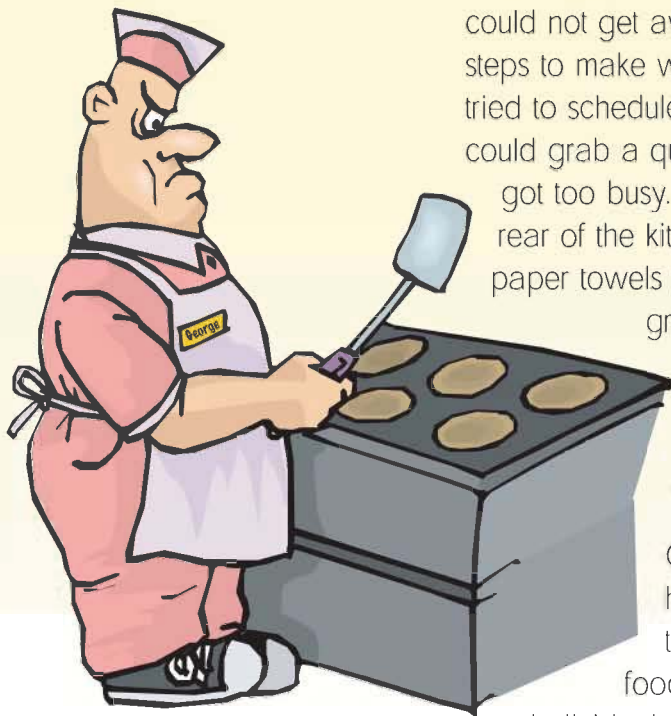
George was the cook at a local restaurant. During the week, George was usually the only person working in the kitchen despite the fact that there was a large lunch rush on weekdays. From 11:00 A.M. until 2:00 P.M., George was very busy working the grill and fryers. The owner and two wait staff were also there during the week, but they did not work in the kitchen. George had asked the owner several times to hire part-time help for the lunch rush, but the owner did not want to hire another cook. He told George, "Making money is hard work," and that they needed to keep expenses low to compete with the other restaurants in the area.

When things were really busy, George found that he could not get away from the grill at all. He took several steps to make working the lunch rush a little easier. He tried to schedule his first break at 10:45 A.M. so he could grab a quick smoke and use the restroom before it got too busy. Since the closest handsink was at the rear of the kitchen, George started keeping a roll of paper towels near the grill so he could wipe the

grease off his hands as he made sandwiches and fried onion rings. He also found working over the grill for long periods of time was easier if he kept a glass of water nearby.

One day a sanitarian from the local health department told the owner that there had been a number of cases of foodborne illness reported. In each case the individual ate at the restaurant three days earlier.

George had not been feeling well either but had not told the owner because he needed the money and there was nobody else available to work in his place. The sanitarian collected food samples, closed the restaurant, and suggested that George see a doctor immediately.



- 1) What do you think caused the foodborne outbreak?
- 2) Who was responsible for the foodborne outbreak?
- 3) What could the owner have done to prevent the outbreak?
- 4) What did George do wrong?

The restaurant was closed for six days while the health department completed the outbreak investigation. George could not return to work when the restaurant reopened. He was being treated by his doctor for a Shigellosis infection. The health department confirmed 15 cases of Shigellosis from the outbreak. Fortunately for the owner, most of those who became ill were long-time customers who chose not to take legal action. However, business at the restaurant dropped about 75%. Three weeks after reopening, the restaurant went out of business permanently.

- 5) What were the costs of this foodborne outbreak?
-