CHAPTER 03 / LEARNER STUDY GUIDE

Contamination and Food Allergens

Identify the hazard.

Choose the right response.

A correct cooking temperature cannot prevent contamination that happens afterward. A clean fryer basket does not remove allergens from shared oil. This chapter connects the hazard, its route to food, and the action that interrupts that route.

Study sequence: Watch the lesson, use this guide to clarify the distinctions, then take the separate interactive quiz. Each choice has an explanation and each question identifies relevant slides and guide pages.

Authority baseline: Corrected FDA Food Code 2022 plus December 2024 Supplement. The Code is a model for adoption; local requirements govern operations. FDA guidance and restaurant examples are identified separately.

FOUNDATIONS / LESSON SLIDES 3-6

Name the hazard and the route

Hazard	Recognize the route
Biological	Raw-food juices or an unclean utensil transfer pathogens to ready-to-eat food.
Physical	Glass, metal, hard plastic or loose equipment parts can injure. Natural hard material can also be a hazard in context.
Chemical	A cleaner, pesticide or unsuitable material exposes food to a harmful substance.
Allergen	A food protein reaches a person who is allergic to it. We give allergens separate teaching attention, not a new exclusive legal hazard class.

A correct earlier step is not a shield

A raw-chicken utensil touches cooked ready-to-eat food. The contact happened **after** cooking, so the earlier kill step did not address it. Stop service and involve the **person in charge (PIC)**. The general unsafe-food rule permits discard or **reconditioning under a procedure approved by the regulatory authority**, not an improvised rescue. Food contaminated through employee hands or bodily discharges has specific discard provisions.

> **Glass breaks over an open ice bin**
> Ice is food. Stop using the affected bin, discard contaminated ice, safely remove fragments, and clean and sanitize the bin and tools before adding fresh ice. Follow the glass-breakage procedure to protect people and surrounding food. Picking out visible pieces or using a new scoop does not establish that the old ice is clear.

Prevent the next failure: inspect equipment, replace damaged tools, and correct the source of fragments. A damaged can opener can contaminate more than one batch.

Food Code 1-201.10 (Approved); 3-101.11; 3-302.11; 3-701.11(A), (C)-(D); 4-501.11; 4-601.11; 4-702.11; Annex 4. Original worked examples.

CHEMICAL CONTROLS / LESSON SLIDES 7-10

Control chemicals before exposure

Situation	Required distinction
Original container	Keep a legible manufacturer label identifying the material.
Working container	Identify the chemical clearly and individually by its common name. A color or employee initials alone is not enough.
Storage	Separate by spacing or partitioning and do not locate toxic materials above food, equipment, utensils, linens or single-use articles.
Use	Follow intended use, label directions and applicable conditions. Use the appropriate concentration test when required.
Former chemical container	Do not reuse a container that held toxic material to store, transport or dispense food. Washing and relabeling do not remove this prohibition.

An unidentified spray bottle should be removed from use while management resolves identification or safe disposal. Do not identify it by sniffing, color or spraying a test surface. Medicines, personal-care products and maintenance supplies also need protected storage.

Where a lubricant could reach food or a food-contact surface, verify that it meets the **incidental-food-contact requirements** in Food Code 7-205.11. Suitability does not permit uncontrolled leakage.

> **Two failures, two corrections**
> Degreaser leaks onto clean plates: relocate and secure the chemical, and keep exposed plates out of use until properly restored. A stronger sanitizer mix: stop, verify the product and conditions, remake and test as needed. More concentrate is not automatically safer.

Scope: the Code has a limited storage exception for equipment and utensil cleaners and sanitizers held in warewashing areas for availability, only if stored to prevent contamination. This is not permission to place a leaking bottle over clean plates.

Food Code 7-101.11; 7-102.11; 7-201.11; 7-202.11-.12; 7-203.11; 7-205.11; 7-207 to .209; 4-302.14; 4-501.114 and .116; 4-902.11.

Use suitable food-contact materials

Material or condition	Understand the limit
Copper and brass	Generally may not contact food below **pH 6**. A specific exception permits contact with beer-brewing ingredients in pre-fermentation and fermentation steps.
Galvanized metal	May not contact acidic food. Refrigeration or a new label does not resolve this material restriction.
Lead-containing ware	Apply the limits for the particular type of ware. There is no single invented limit that fits every object.
Food-contact equipment	Must be suitable, safe and maintained for its intended use. Decorative does not automatically mean food-safe.

Material versus temperature
Lemonade in a galvanized tub presents an acidic-food/material mismatch. The fix is an appropriate food-contact container, not merely colder storage. The copper pH threshold is not the complete test for whether a food requires **time/temperature control for safety (TCS)**.

Recognize harm without diagnosing

A physical object can cause choking, cuts or damaged teeth. Chemical exposure may cause burning, irritation, nausea or vomiting; effects depend on the substance and exposure. These clues do not prove the cause.

Stop exposure and obtain appropriate help. Call **911 for an immediate emergency**. For suspected chemical exposure, use poison-control or medical guidance and retain the product label for responders. **Do not induce vomiting or improvise treatment.** In the United States, Poison Help is **1-800-222-1222**.

Food Code 4-101.11-.15; safe-food duties. Medical response is public-health guidance, not restaurant diagnosis. Poison Help: poisonhelp.org.

DEFENSE / LESSON SLIDES 13-17

Food defense: intent changes the response

Food defense addresses intentional adulteration intended to cause harm. The December 2024 Supplement adds a PIC duty to ensure employees receive awareness training related to assigned duties, including reporting suspicious activity. Employees are not criminal investigators.

FDA awareness tool	Recognition map
Employees FIRST	**F**ollow the plan and procedures. **I**nspect the work area. **R**ecognize unusual conditions. **S**ecure ingredients and supplies. **T**ell management about concerns.
ALERT	**A**ssure safe sources and supplies. **L**ook at protection of products under your control. **E**mployees: know people and access. **R**eports: maintain useful security information. **T**hreat: know the response and contacts.

These are **FDA guidance tools**, not mandatory acronyms or one prescribed staffing model. The model-Code duty and a restaurant response procedure are separate authority levels.

> **Credible tampering concern**
> An unopened case has unexplained seal damage and residue. Stop its use, secure it against accidental service or access, and tell the PIC. Management follows the response plan and contacts appropriate public-health and law-enforcement authorities. Preserve packaging and records as directed. Do not taste, return or discard suspected evidence on your own.

A damaged seal alone does not prove intent. Report observed facts. Keeping a product for investigation does **not** mean it may be served.

2024 Supplement: food-defense definition; 2-103.11(R). Food Code 2-103.11(B)-(C). FDA FIRST, ALERT and retail food-security guidance.

ALLERGENS / LESSON SLIDES 18-20

Allergy: the food does not need to be spoiled

A **food allergy** is an immune-system response to a food protein. An intolerance is a different condition. Milk allergy is not simply lactose intolerance, and a lactose-free claim does not prove absence of milk protein. Small amounts can matter; staff cannot predict the next reaction.

Nine major categories	Restaurant recognition
Milk; eggs	Two categories. Sauces, breads and other mixed foods can contain them.
Fish; Crustacean shellfish	Two categories. Shrimp, crab and lobster are Crustaceans. Fish is separate.
Tree nuts; peanuts	Two categories. Identify the actual nut or ingredient.
Wheat; soybeans	Two categories. Verify breadings, seasonings, sauces and other ingredients.
Sesame	The ninth category. Tahini made from sesame is a useful ingredient clue.

Use the actual ingredient, not a vague label

Federal labeling identifies the particular fish species, Crustacean species or type of tree nut as applicable. **Shrimp is a Crustacean; an oyster is a mollusk.** Clams, mussels and scallops are also mollusks, outside the federal major-allergen Crustacean category.

> **Outside the nine does not mean harmless**
> A guest can be allergic to an ingredient outside the defined major list. Do not dismiss a reported oyster allergy or promise safety because the ingredient is not one of the nine. Clarify the specific food to avoid and verify the product and preparation.

Food Code 1-201.10; 2-103.11(O); FDA Food Allergies and current labeling guidance. Categories are not a medical diagnosis.

INGREDIENT INFORMATION / LESSON SLIDES 21-22

Read the whole current label

A major-allergen source may be identified within the ingredient list or in a compliant separate **Contains** statement. Absence of a separate Contains line does not mean no allergens and does not automatically establish mislabeling. Read all current ingredients.

Distinction	What it does and does not mean
Highly refined oils	The major-allergen definition excludes highly refined oils and ingredients derived from them. Do not extend this to every cold-pressed or unrefined oil. Verify the product; the exception is not personal medical advice.
Current milk and egg guidance	FDA 2025 guidance addresses milk from other domesticated ruminants and eggs from other domesticated fowl, beyond only cows and chickens.
Coconut update	FDA 2025 guidance no longer lists coconut among the tree nuts treated as major food allergens. Coconut can still cause allergy; it remains an ingredient that must be handled accurately.

Packaged, bulk and advisory statements

Food packaged by the establishment needs the applicable label information, including major-allergen sources. Bulk food for consumer self-dispensing has applicable prominent information requirements. Recognize the food and sale situation before choosing a labeling rule.

> **Do not turn an exception into a promise**
> A sauce without a separate Contains line can still include milk in its ingredient list. A label without a voluntary may-contain warning does not prove no cross-contact. Such warnings do not replace required ingredient labeling or good controls.

The 2025 details above are **identified current FDA guidance**, not claims that the printed 2022 Code was rewritten or that a future certification exam must test each detail.

Food Code 1-201.10; 3-602.11. FDA Food Allergies; FDA food-allergen labeling guidance, Edition 5 and 2025 FAQ.

COMMUNICATION / LESSON SLIDES 23, 27, 31

Written information and assigned responsibility

Authority	What students should distinguish
Unpackaged food	Food Code 3-602.12(C) requires written notification of major allergens present as ingredients in unpackaged food served or sold to consumers. Check local adoption.
PIC training duty	Under 2-103.11(O), ensure food-safety training, including food-allergy awareness, appropriate to employee duties. Awareness includes major allergens and reaction symptoms.
Restaurant procedure	The operation specifies how requests are communicated, verified, prepared and handed off. The Code does not assign one universal plate-delivery job title.

A verbal assurance alone does not replace the written-notification provision where adopted. A generic statement that allergens may be in the kitchen is not equivalent to identifying allergens present as ingredients. Written ingredient information does not prove preparation is protected from cross-contact.

> **Supplier substitution**
> The usual sauce is replaced with a different brand. An old recipe chart is not enough: inspect the replacement label, confirm the actual recipe, and include garnishes, sides and equipment. Same menu name does not establish same ingredients.

A useful response when uncertain

"I need to verify the current ingredients and preparation before I can answer that." If verification is not possible, explain the limitation and discuss a verifiable alternative. Do not call the meal suitable from appearance, past experience or lack of previous complaints.

Food Code 2-103.11(O) and Annex 3; 3-601.12; 3-602.11-.12. Verification example is implementation, not an extra universal Code workflow.

CROSS-CONTACT / LESSON SLIDES 26, 28-30

Control the transfer, not just the appearance

Allergen cross-contact: allergen protein transfers to another food. **Microbial cross-contamination:** pathogens transfer through food, hands, tools or surfaces. Similar routes do not make higher heat a universal answer. Cooking is not reliable allergen elimination.

Situation	Why the shortcut fails
Sanitizer on visible egg residue	Sanitizer does not replace removal of soil and allergen protein by cleaning.
A clean basket in oil used for shrimp	Shared oil remains a potential allergen-transfer route.
Fresh gloves touching a dirty blender	New gloves do not clean the equipment they touch.
A scoop held in shared rinse water	Rinsing is not automatically complete cleaning or removal of allergen residue.

Cleaning and sanitizing do different work

Remove soil, wash, rinse, sanitize as required and air-dry. Reset hand, glove and utensil practices. FDA research supports effective full cleaning, but not a universal zero-allergen guarantee from a quick wipe. Use suitable equipment and product instructions and verified controls.

> **Cheese on a milk-allergy burger**
> Do not pick off the cheese and serve the same burger. A new plate does not remove milk protein from food. In the worked restaurant procedure, discard the affected order and remake with verified ingredients and controlled handling. Correct the transfer route as well as the meal.

Dedicated equipment or a different controlled process may help. A particular purchase is not a universal FDA requirement. When the process cannot be verified or controlled, explain the limitation instead of promising suitability.

Food Code 3-302.11; 3-701.11; 4-601 to 4-603; 4-702; 4-901.11. FDA allergen research and fish guidance Chapter 19.

RESPONSE AND RECAP / LESSON SLIDES 24-25, 32-34

Recognize urgency; explain the decision

Allergy symptoms may involve **skin or mouth** (hives, itching, swelling), **digestion** (vomiting, cramps, diarrhea), or **breathing and circulation** (throat tightness, wheezing, difficulty breathing, dizziness or fainting). They can progress quickly; do not wait for every symptom or a rash.

> **Suspected severe reaction**
> Call **911 immediately** for breathing difficulty, throat swelling, collapse or another suspected severe allergic reaction. Follow dispatcher instructions and do not leave the guest alone. Do not delay the guest's prescribed epinephrine while emergency help is being called; assist within your training and role. Support the prescribed emergency plan within training and role; do not improvise medication administration. Emergency evaluation is still needed after epinephrine. Food, water or antihistamines do not replace anaphylaxis treatment.

Keep ingredient and order details available, but never delay care to investigate the recipe. Restaurant staff recognize and respond; healthcare professionals diagnose.

Event	Reasoned response
Cleaner reaches food	Stop service; apply the unsafe-food disposition rule. No improvised rinse or cooking repair.
Allergen reaches an allergy order	Keep it from the guest. Remake using controlled ingredients and handling, not the same food on another plate.
Credible tampering concern	Stop use, secure, notify and preserve evidence for the appropriate authorities.

Recap: name the hazard and route; match the control; verify ingredients and process; distinguish Code duties, guidance and restaurant procedures. After a missed quiz item, read all explanations and return to its references. A practice score is feedback, not a certification result or passing guarantee.

FDA allergy guidance; MedlinePlus anaphylaxis guidance; Food Code 3-701.11; FDA food-defense guidance. Learning method is Peak Shift instruction.

REFERENCES / CHAPTER 03

Sources and authority map

Technical baseline: **corrected FDA Food Code 2022 plus December 2024 Supplement**. Source review: September 23, 2026. The Code is a model for adoption; local law may differ. FDA training and public-health guidance are distinguished from model-Code duties. Examples and practice questions are original.

FDA Food Code 2022, corrected

Definitions: 1-201.10. PIC duties and allergy awareness: 2-103.11. Safe food and transfer: 3-101.11; 3-302.11. Information: 3-601.12; 3-602.11-.12. Disposition: 3-701.11. Materials: 4-101.11-.15. Maintenance, cleaning and sanitizing: Chapter 4. Chemicals: Chapter 7. Rationale: Annexes 3-4.

December 2024 Supplement

Food-defense definition and added PIC training duty at 2-103.11(R). Read together with the baseline Code.

FDA Food Allergies

Major allergens, label formats, symptoms, cross-contact and serious reactions. Public-health guidance, not a diagnosis by restaurant staff.

FDA allergen-labeling guidance FAQ

2025 guidance clarifications on milk, eggs, coconut and labeling; labeled as updates rather than rewritten 2022 Code text.

FDA allergen-removal research

Retail surface-cleaning and transfer findings. Effective tested cleaning is not an unconditional claim about every surface and allergen.

FDA Employees FIRST

Employee food-defense awareness tool; acronym is guidance, not a required training format.

FDA ALERT description

Assure, Look, Employees, Reports and Threat: management awareness tool described in FDA sector planning material.

FDA retail food-security guidance

Preventive measures, reporting and response to suspected deliberate contamination.

FDA fish hazards guidance: Chapter 19

Shared fryer oil and allergen transfer. The current nine-allergen list in this guide comes from current FDA allergy sources, not an older list.

Poison Control: immediate assistance

Poison-control contact and exposure response; no induced vomiting. Immediate emergencies require 911.

MedlinePlus: anaphylaxis

Emergency response and continued medical evaluation after prescribed epinephrine.