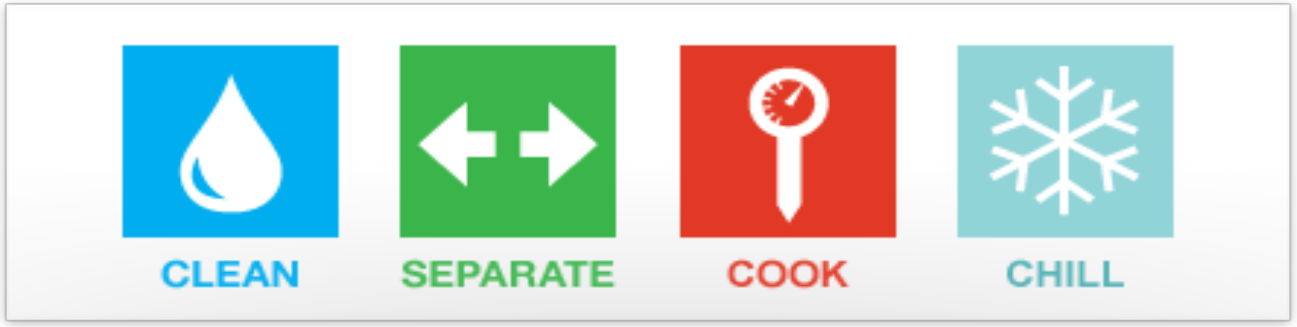
FDA U.S. FOOD & DRUG ADMINISTRATION
OFFICE OF REGULATORY AFFAIRS

"Making Food Safe"



Mary Ellen Taylor
FDA Health Communications Specialist
Office of Regulatory Affairs
Office of Communications

Agenda

- Food Safety & FDA
- Food & You
- Food Contaminants

Fact or Myth?

If I microwave food, the microwave kills the bacteria, so the food is safe.

Fact or Myth?

To get rid of any bacteria on my meat, poultry, or seafood, I should rinse off the juices with water first.

Fact or Myth?

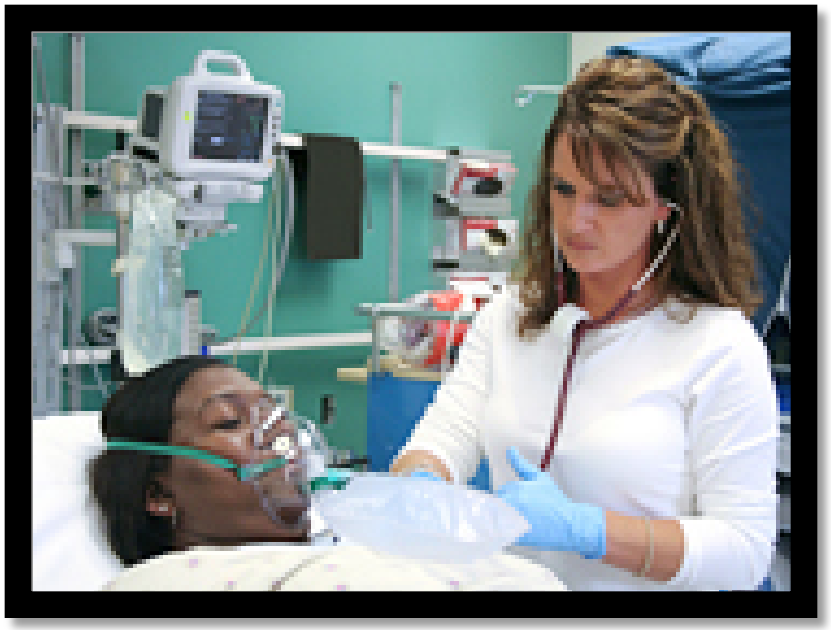
I don’t need to wash fruits or vegetables if I’m going to peel them.

Fact or Myth?

Eating raw cookie dough is not a big deal.

Fact or Myth?

Food poisoning ? Just have to tough it out for a day or two and then it's over.



Fact or Myth?

If I really want my produce to be safe, I should wash fruits and veggies with soap or detergent before I use them.

Fact or Myth?

It is ok to thaw food on the counter.

Foodborne Illness Facts

- 48 million (1 in 6 Americans) become ill
  128,000 are hospitalized
- 3,000 die
- Symptoms: diarrhea, vomiting, may cause lifelong kidney or other issues

The Food Safety Problem

- Globalization & Numbers of Facilities
  - 15 percent of U.S. food supply is imported
- Food supply more high-tech and complex
  - More foods in the marketplace
  - New hazards in foods not previously seen
- Shifting demographics
  - Growing population (about 30%) of individuals are especially “at risk” for foodborne illness

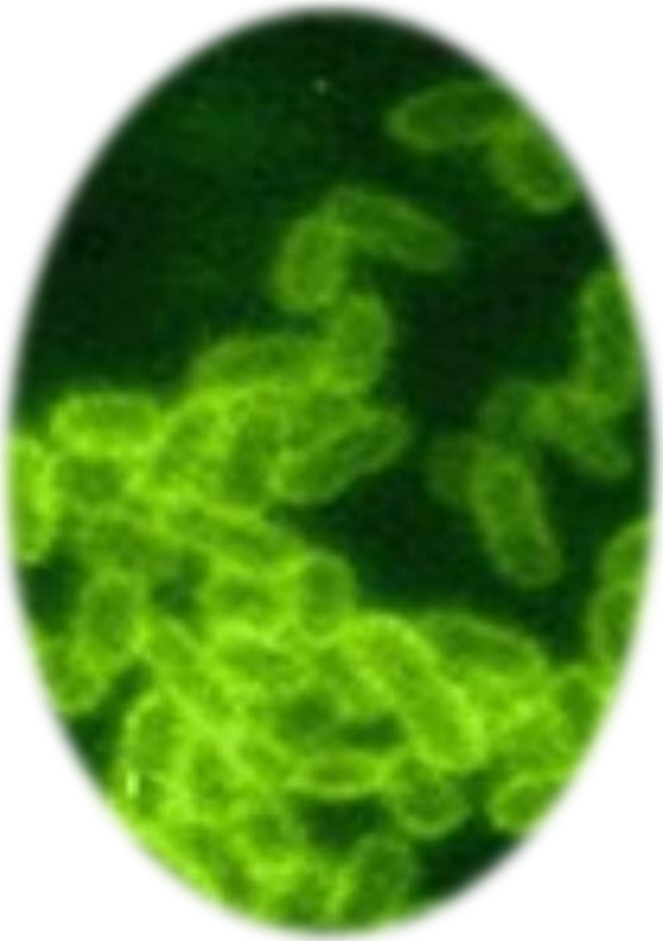
Changing Nature of Risk in Global Supply Chains

Products often traverse complex global supply chains to reach U.S. consumers.

Supply chain for canned tuna

Challenges: New Pathogens

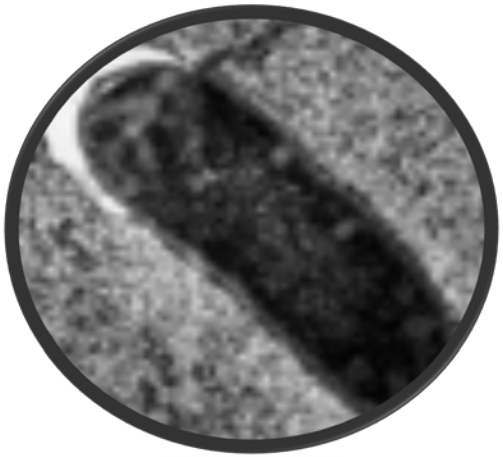
- *Campylobacter jejuni*
- *Cryptosporidium parvum*
- Shiga toxin-producing *E. coli*
- Noroviruses
- *Salmonella Typhimurim* DT104
- *Campylobacter* fetus ssp fetus
- *Cyclospora cayentanesis*
- *Listeria monocytogenes*
- *Salmonella Enteritidis*
- *Vibrio vulnificus*
- *Vibrio cholerae* O139
- *Vibrio parahemolyticus*
- *Yersinia enterocolitica*



Foodborne Pathogens: Bacteria

Campylobacter

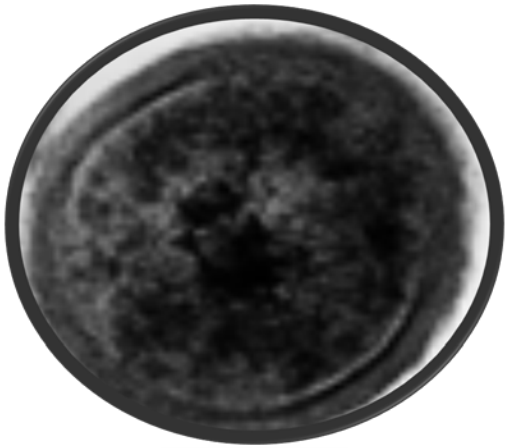
Salmonella



E. coli O157:H7

Foodborne Pathogens: Bacteria

Listeria monocytogenes

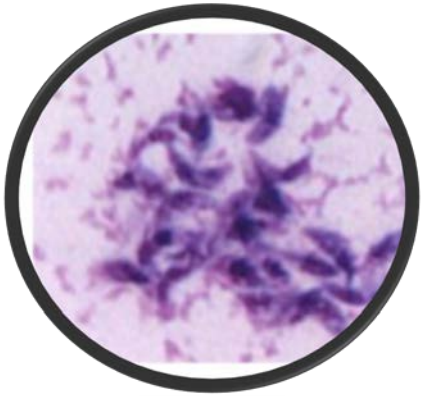


Clostridium botulinum Type E

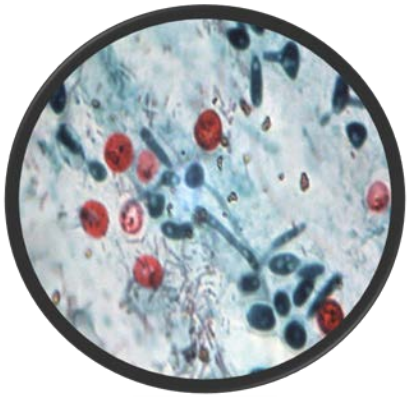
Vibrio vulnificus

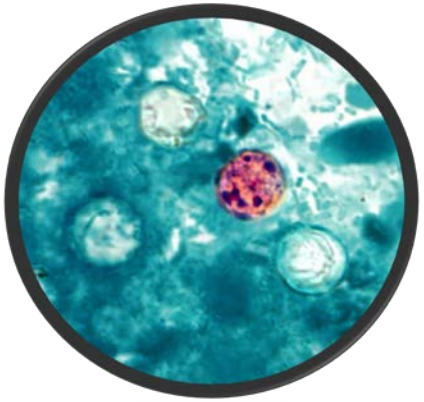
Foodborne Pathogens: Parasites

Giardia



Cryptosporidium



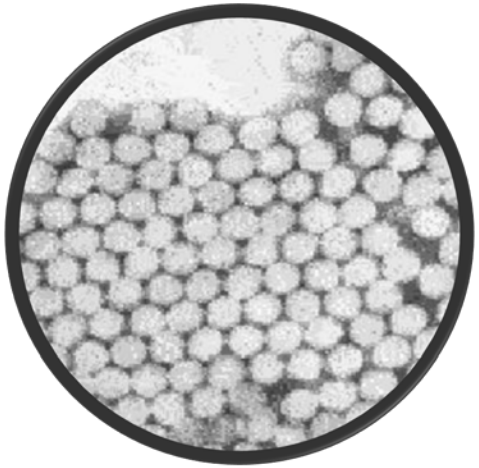


Toxoplasma gondii

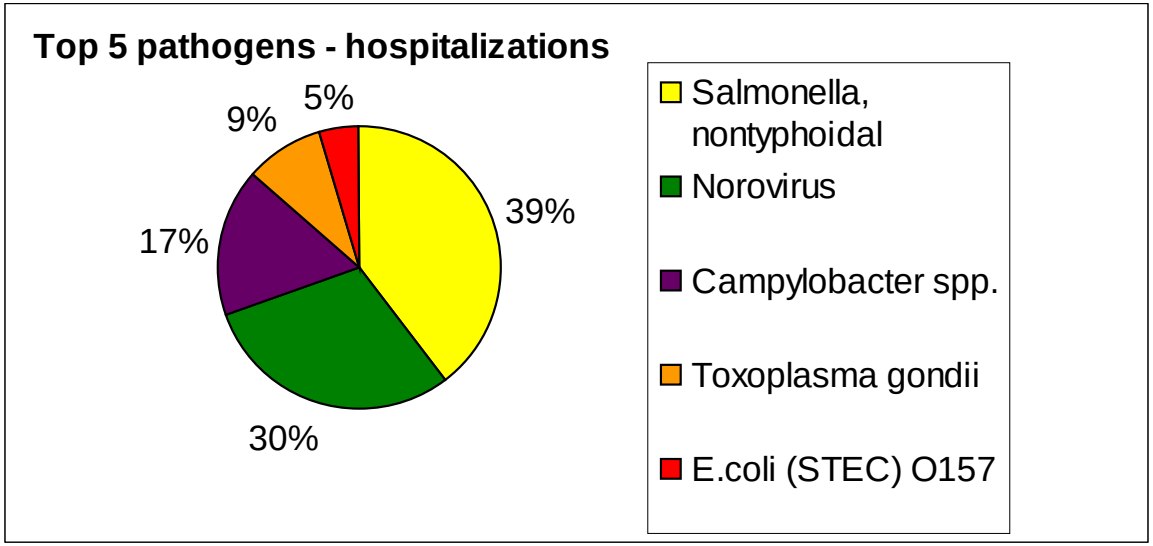
Cyclospora

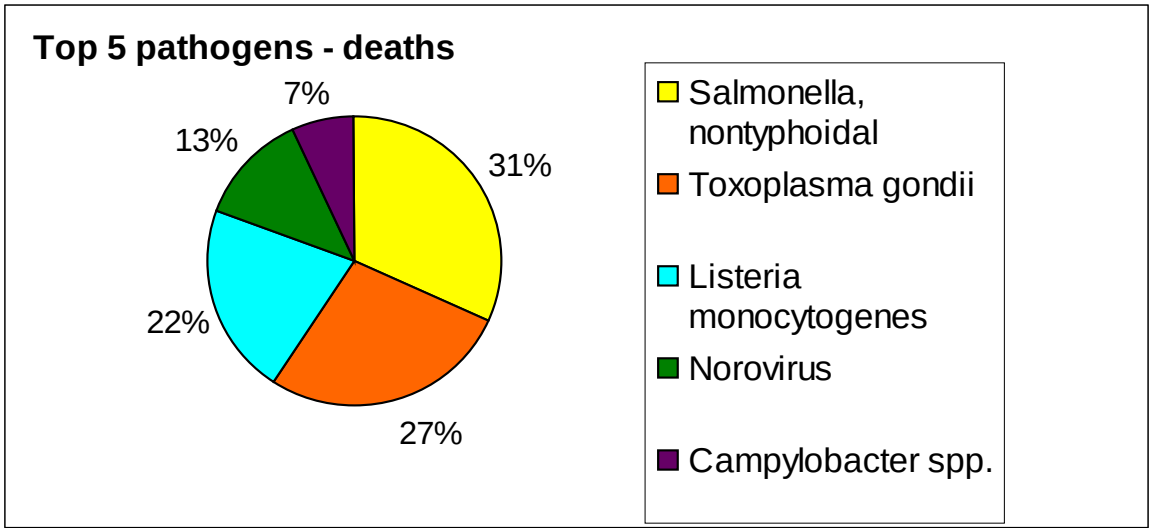
Foodborne Pathogens: Virus

Norovirus



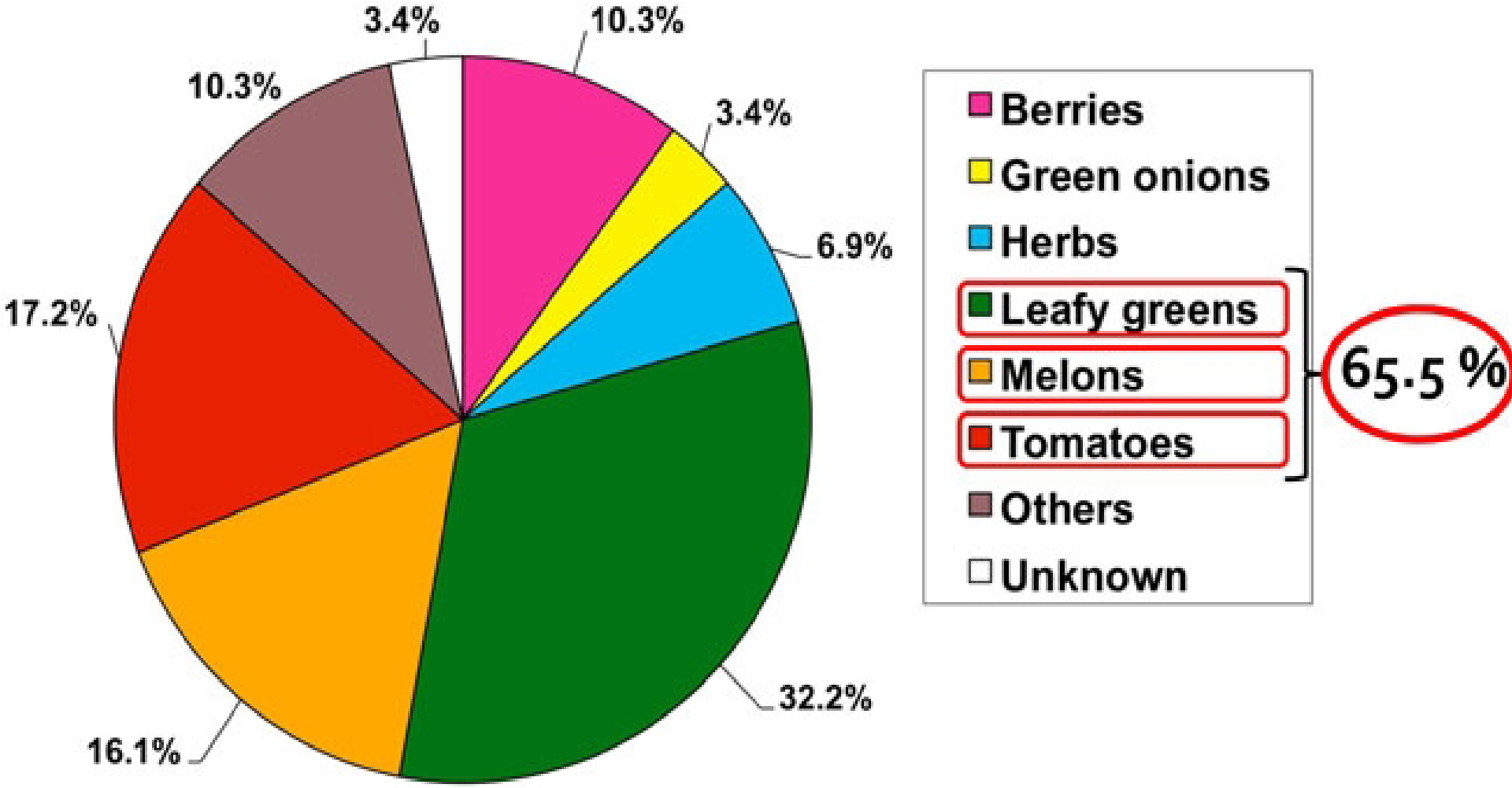
CDC Data FY'11





Produce Outbreak Data

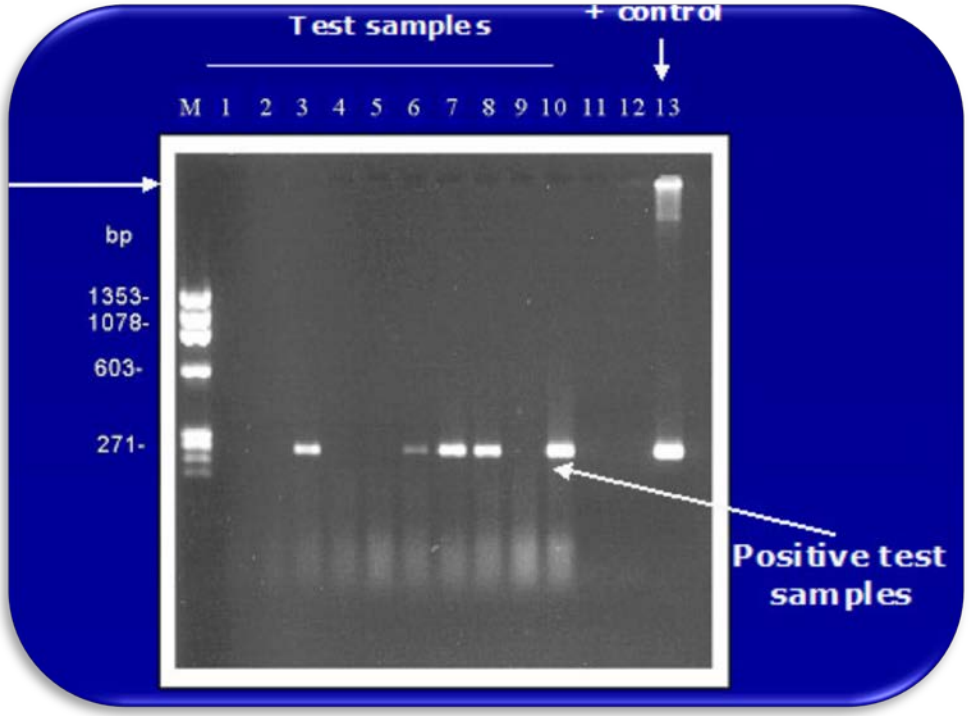
1996-2009



Source Credit FDA/CFSAN 2011

What is being done to protect the food supply?

- **Industry**
  - New methods
  - Research
- **Academia**
  - New methods
  - Research
- **Government**
  - Legislation
  - Inspections



What Does FDA Do?

Encourage voluntary compliance

Protect Public Health

Determine Compliance with food safety laws

*Food not adulterated with filth or pathogens

*Food is not injurious to health

*Labeling is truthful and not misleading

Significant Food Laws

1906 - Federal Food and Drugs Act (rep 1938)
1939 - First Food Standards issued: tomato products
1944 - Public Health Service Act (communicable disease)
1958 - Food Additive Amendments
1966 - Fair Packaging and Labeling Act
1980 - Infant Formula Act
1990 - Nutritional Labeling Education Act
1994 - Dietary Supplement Health and Education Act
1998 - Seafood HACCP Regulation
2004 - Food Allergen Labeling & Consumer Protection Act
2006 - Dietary Supplement and Nonprescription Drug Consumer Protection Act
2011 - Food Safety Modernization Act

FD&C Act

- **Misbranded** (its label or labeling is false or misleading)
- **Adulterated** (contains a poisonous or harmful substance)

… deemed to be adulterated if it:

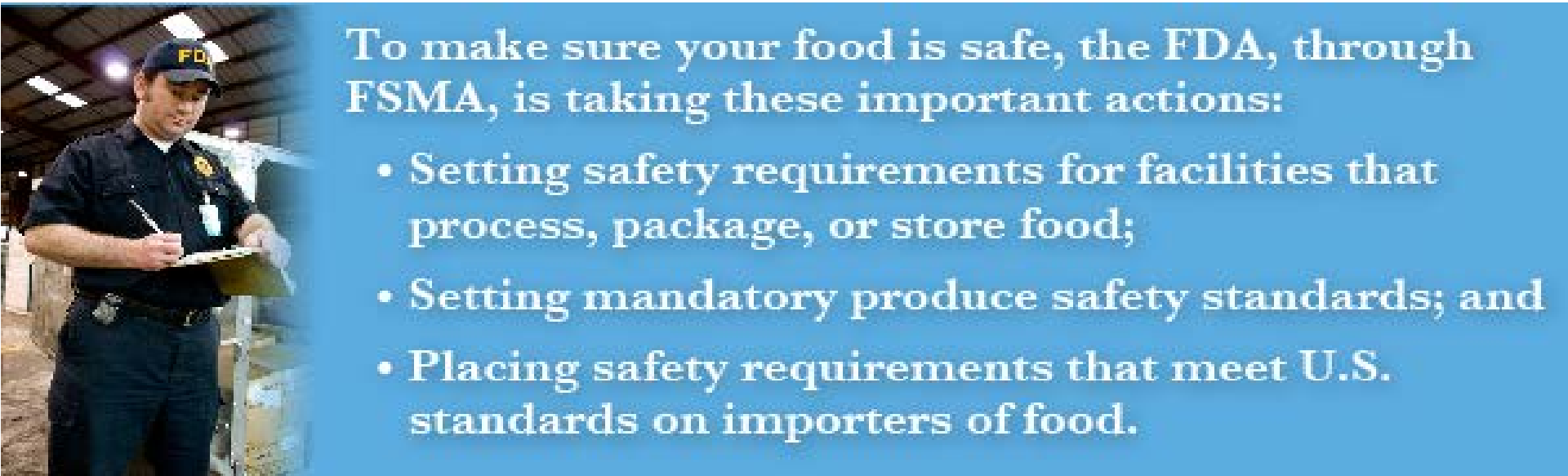
has been prepared, packed, or held under insanitary conditions whereby it may have been contaminated with filth or whereby it may have been rendered injurious to health

BT Act - Facility Registration

- Food facilities (other than private homes) producing, storing or handling food products intended for sale in U.S. interstate commerce be registered with FDA
- Biennually
- Exemptions

FSMA - Strengthening Our Food Safety Foundation

Core principle: shifting FDA's focus from responding to contamination to preventing it.



Basic Requirements

Good Manufacturing Practices	• 21 CFR Part 117 B, 210, 211, etc. • Maintain sanitary conditions • Prevents adulteration
Preventive Controls	• 21 CFR Part 117, 507, etc. • Hazard analysis, preventive controls. monitoring, corrective action
Labeling Regulations	• 21 CFR Parts 101, 201, etc. Helps ensure fairness and safe use Prevents misbranding

FDA Inspections

FDA inspects Manufacturers or Processors to verify that they comply with the current regulations.

- Vaccine and Drug Manufacturers
- Blood Banks
- Food Processing Facilities
- Dairy Farms
- Animal Feed Processors
- Facilities that Conduct Clinical Trials
- Laboratories that Conduct Animal Studies
- Foreign Manufacturing & Processing Sites of FDA-Regulated products sold in US

Outbreak Investigation

- Identify the source of contamination
- Identify persons at risk
- Identify contributing factors
- Determine potential for ongoing transmission and the need for abatement procedures

Personnel Part 117.10

- Exclude anyone from food manufacturing who shows symptoms of an illness
- Gloves and hair restraints
- Cleanliness and proper hygiene to include:
  - Clean outer garments
  - Maintaining personal cleanliness
  - Washing and sanitizing hands in a proper hand washing facility before, during, any other time

Courtesy of Dr. Bill Hurst, UGA

Plant and Grounds Part 117.20

- Properly store equipment
- Remove litter and trash
- Cut weeds and grass
- Maintain roads, yards, parking areas
- Control trash disposal and waste treatment
- Plant construction and design
- No drip or condensate on food or equipment
- Adequate lighting, screening, ventilation

Example of a pest's burrow hole.

Sanitary Operations Part 117.35

- Cleaning/sanitizing of utensils, food contact surfaces, and equipment to protect against contamination
- Sanitation of food-contact surfaces and cleaners & instructions for use
- Storage cleaning/sanitizing compounds: Shall be held and stored in a manner to protect against contamination of food
- Storage of toxic materials
- Pest control

Sanitary Facilities & Controls

Part 117.37

- Plumbing
- Toilet facilities
- Sewage disposal
- Hand washing facilities
- Rubbish disposal

Part 117 continued

- Part 117.40 - Equipment & utensils
- Part 117.80 - Processes & Controls
- Part 117.93 – Warehousing & distribution
- Part 117.95 - Holding & distribution of human food by-products for use as animal food
- Part 117.110 - Defect action levels

Response to FDA 483

- Respond in writing to the FDA 483 within 15 working days. This is not mandatory.
- Responses are considered before the FDA district office recommends legal action.
- Response Letter to address:
  - Each item individually
  - Describe scope of corrective action
  - Specify completion date for corrective action
  - Indicate if observation is global or isolated incident
  - For observations that affect product quality provide a quality assessment and justification for product safety

How does FDA decide to take regulatory action?

- Repeat 483 Points
- Prior Warning Letter
- Public Health Threat
- Positive Samples

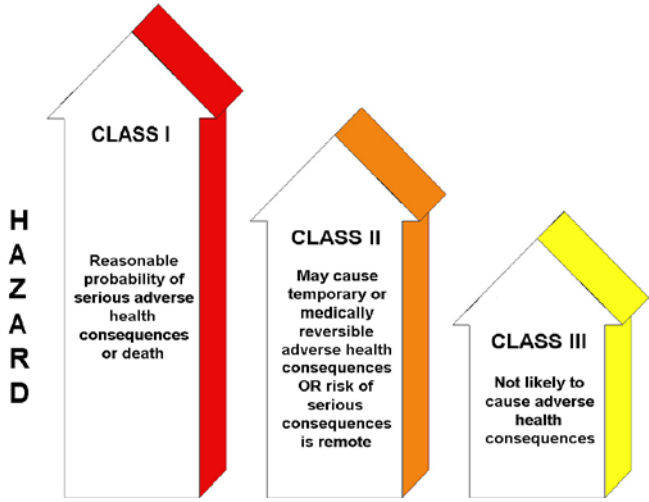
Compliance Option: Warning Letters

- A Warning Letter…
  - FDA's principal means of achieving prompt, voluntary compliance
  - affords individuals/firms opportunity to take corrective action
  - issued only for violations of regulatory significance
  - is not appropriate for certain situations (e.g. intentional violations, immediate health hazard, failure to heed previous warnings)
  - should be acted upon promptly by the recipient to take full corrective action and to ensure violations do not recur

Compliance Option: Recall

Class I: Pathogens in RTE; Allergens (except wheat); High levels of sulfites or heavy metals; Choking hazards for susceptible populations

- Issuance of public warning/Press Release
- Immediate notification and termination
- Notification to user/consumer level
- Removal of products from consumers
- 100% effectiveness checks



Compliance Option: Import Alert

- Country/Area
- Industry/Commodity
- Manufacturer

Other Compliance Options

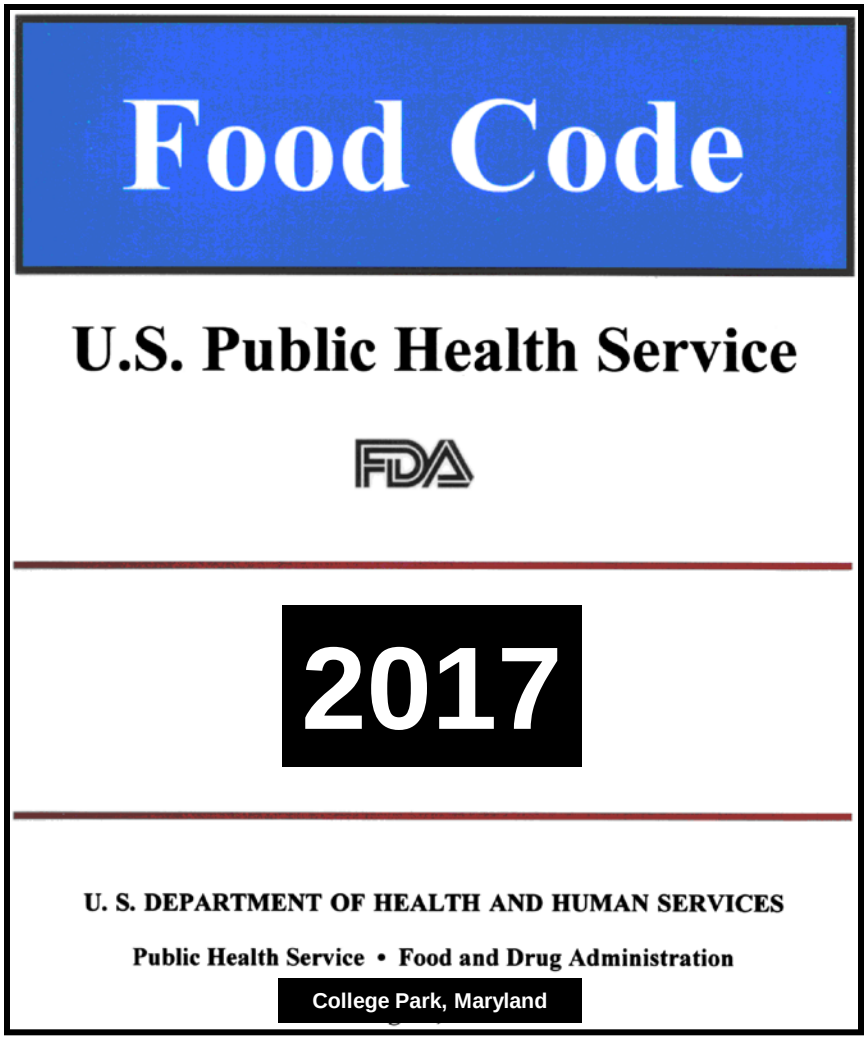
- Civil Money Penalty
- Seizure
- Injunction
- Prosecution
- Debarment

Nature and Scope of U.S. Food Establishment Operations

- Approaching 1 million restaurants
- > 25,000 retail food stores (FMI June 2008 Figures)
- Institutions including schools and healthcare facilities such as nursing homes and hospitals
- Temporary events
- Farmer's markets
- Vending

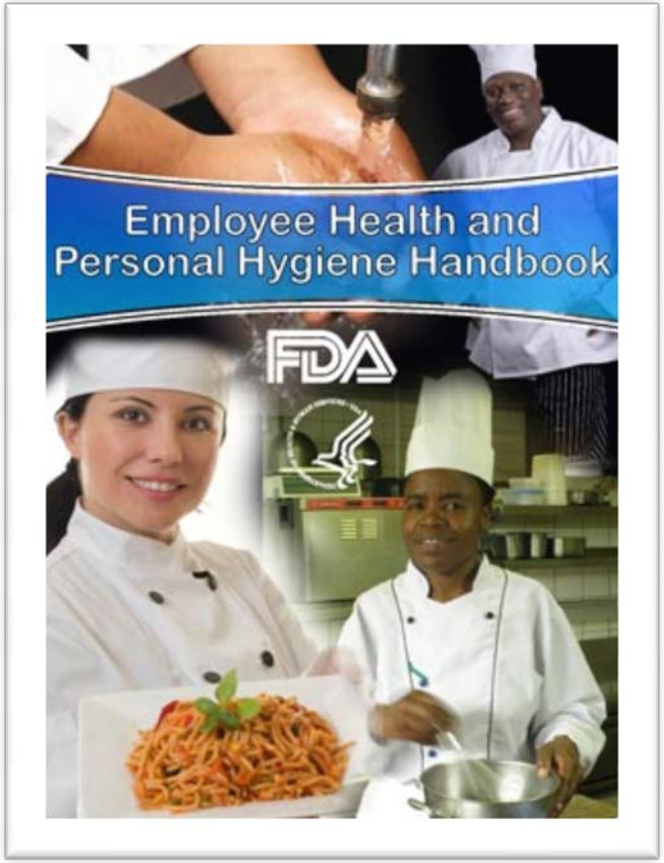
Model Food Code for States

State and local regulatory jurisdictions have the authority to directly regulate retail establishments through their statutes and local ordinances.



Chapter 2: Management & Personnel

The Key to Implementing Employee Health is "Communication"



- **Supervision**
- **Employee Health**
- **Personal Cleanliness**
- **Hygienic Practices**

Inside the Handbook

- Provides information in Q & A format
- Easy reference to forms and tables
- Translated Versions/ Forms

Main Issues:

- ✓Foodborne Illness – The Big 5
- ✓Employee Health & Food Establishment
- ✓Employee Health Management Responsibilities

Inside the Handbook

- **Employee Health**
  - Responsibilities – Knowledge & Reporting to management
  - Exclusions and Restrictions
  - Highly Susceptible Populations (HSP)
- **Personal Hygiene** - Handwashing – what, why, when
- **No Bare Hand Contact with RTE Foods**
    - What is NBHC and why do we need it?
    - Proper use of gloves

Forms

- **Form 1-A**

Conditional Employee and Food Employee Interview

- **Form 1-B**

Conditional Employee or Food Employee Reporting Agreement

- **Form 1-C**

Conditional Employee or Food Employee Medical Referral

- **Form 1-D**

Application for Bare Hand Contact Procedures

I AGREE TO REPORT TO THE PERSON IN CHARGE:

Any Onset of the Following Symptoms, While Either at Work or Outside of Work, Including the Date of Onset:

1. Diarrhea
2. Vomiting
3. Jaundice
4. Sore throat with fever
5. Infected cuts or wounds, or lesions containing pus on the hand, wrist, an exposed body part, or other body part and the cuts, wounds, or lesions are not properly covered *(such as boils and infected wounds, however small)*

Future Medical Diagnosis:

Whenever diagnosed as being ill with Norovirus, typhoid fever (*Salmonella* Typhi), shigellosis (*Shigella* spp. infection), *Escherichia coli* O157:H7 or other EHEC/STEC infection, or hepatitis A (hepatitis A virus infection)

Future Exposure to Foodborne Pathogens:

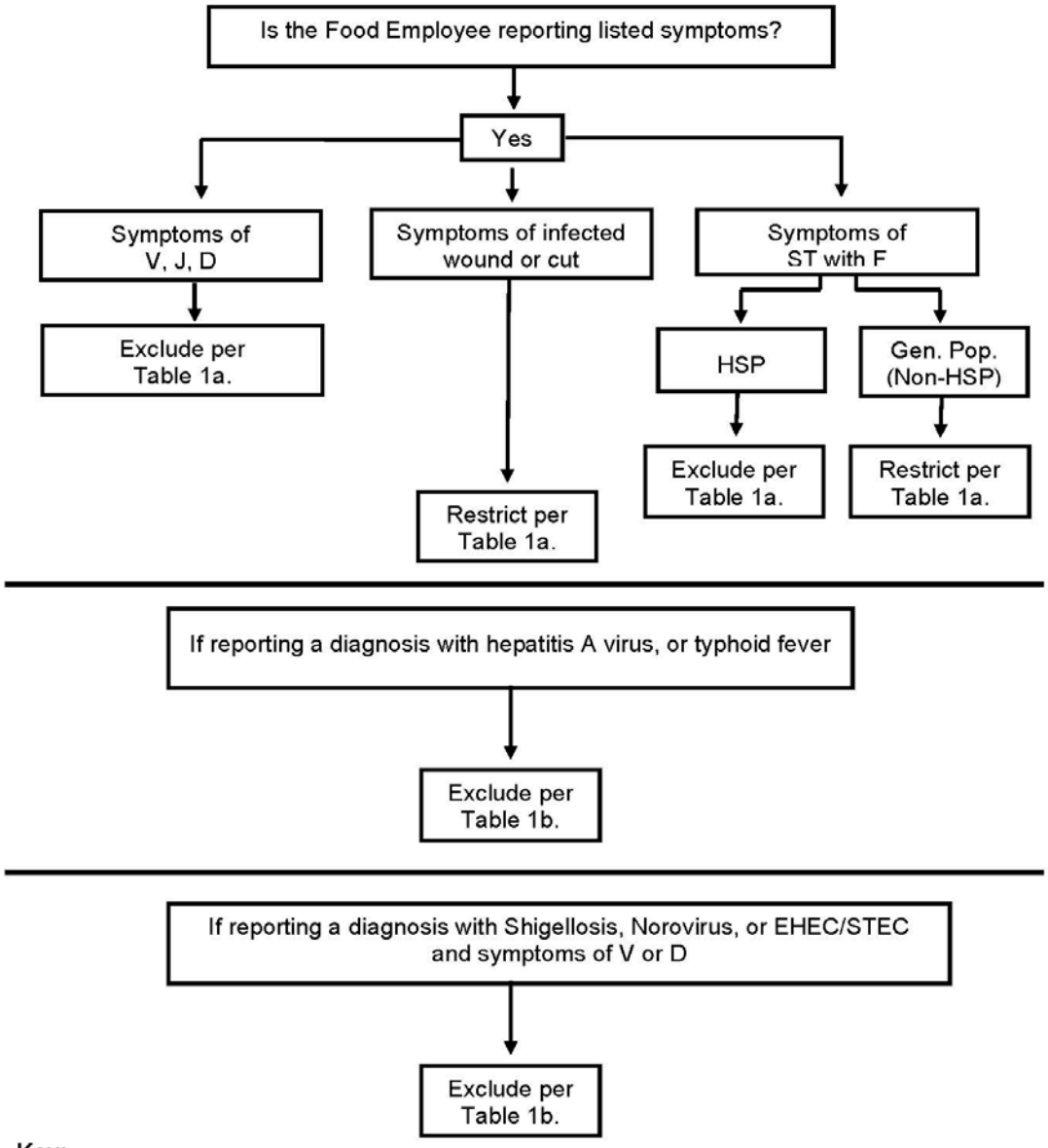
1. **Exposure to or suspicion of causing any confirmed disease outbreak of Norovirus, typhoid fever, shigellosis, *E. coli* O157:H7 or other EHEC/STEC infection, or hepatitis A.**
2. **A household member diagnosed with Norovirus, typhoid fever, shigellosis, illness**

2-201.12 Table 1a: Summary of Requirements for Symptomatic Food Employees

Food employees and conditional employees shall report symptoms immediately to the person in charge				
The person in charge shall prohibit a conditional employee who reports a listed symptom from becoming a food employee until meeting the criteria listed in section 2-201.13 of the Food Code, for reinstatement of a symptomatic food employee.				
Symptom	**EXCLUSION/ OR RESTRICTION**		**Removing Symptomatic Food Employees from Exclusion or Restriction**	**RA Approval Needed to Return to Work?**
	Facilities Serving an HSP	**Facilities Not serving an HSP**		
Vomiting	**EXCLUDE** 2-201.12(A)(1)	**EXCLUDE** 2-201.12(A)(1)	When the excluded food employee has been asymptomatic for at least 24 hours or provides medical documentation 2-201.13(A)(1). ***Exceptions:*** If diagnosed with Norovirus, ***Shigella*** spp., ***E. coli*** O157:H7 or other EHEC/STEC, HAV, or typhoid fever (***S. Typhi***) (see Tables 1b & 2).	No if not diagnosed
Diarrhea	**EXCLUDE** 2-201.12(A)(1)	**EXCLUDE** 2-201.12(A)(1)	When the excluded food employee has been asymptomatic for at least 24 hours or provides medical documentation 2-201.13(A). ***Exceptions:*** If Diagnosed with Norovirus, ***E. coli*** O157:H7 or other EHEC/STEC, HAV, or ***S.*** **Typhi** (see Tables 1b & 2).	No if not diagnosed
Jaundice	**EXCLUDE** 2-201.12(B)(1) if the onset occurred within the last 7 days	**EXCLUDE** 2-201.12(B)(1) if the onset occurred within the last 7 days	When approval is obtained from the RA 2-201.13 (B), and: • Food employee has been jaundiced for more than 7 calendar days 2-201.13(B)(1), or • Food employee provides medical documentation 2-201.13(B)(3).	Yes
Sore Throat with Fever	**EXCLUDE** 2-201.12(G)(1)	**RESTRICT** 2-201.12(G)(2)	When food employee provides written medical documentation 201.13(G) (1)-(3).	No
Infected wound or pustular boil	**RESTRICT** 2-201.12(H)	**RESTRICT** 2-201.12(H)	When the infected wound or boil is properly covered 2-201.13(H)(1)-(3).	No

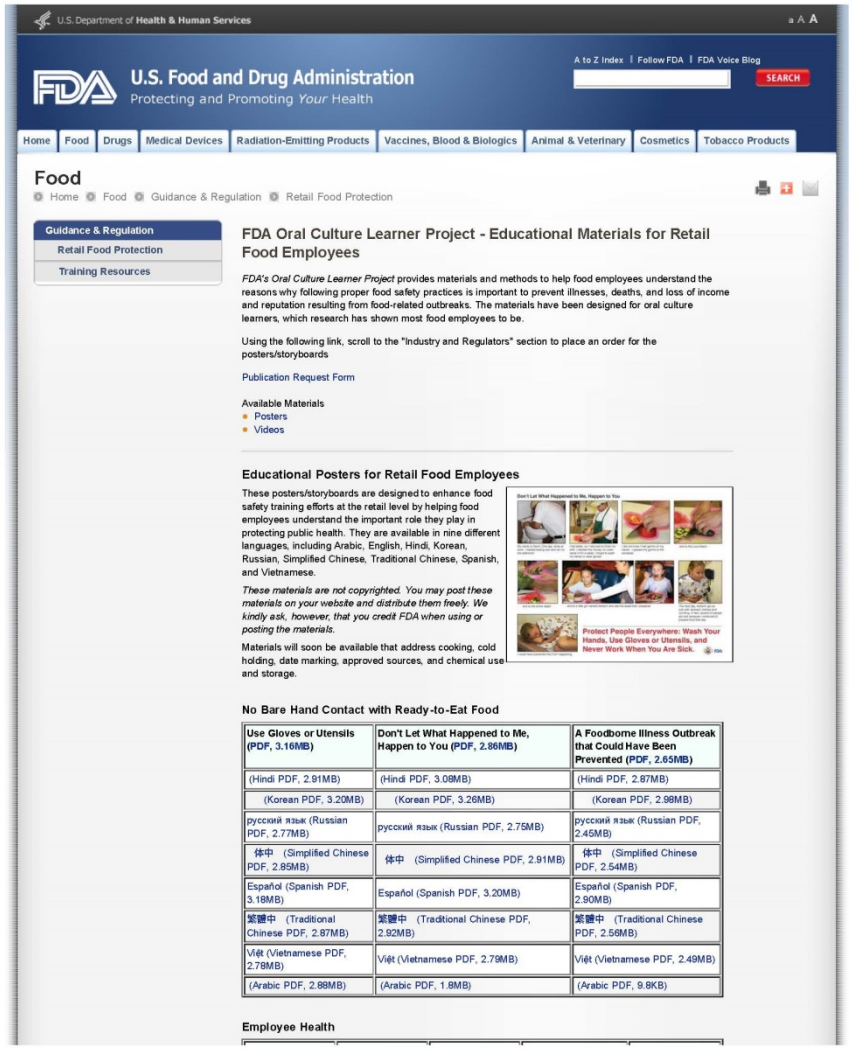
Key for Tables 1, 2, 3, and 4:
RA = Regulatory Authority
EHEC/STEC = Enterohemorrhagic, or Shiga toxin-producing *Escherichia coli*
HAV = Hepatitis A virus
HSP = Highly Susceptible Population

2-201.11 / 2-201.12 Decision Tree 1. When to Exclude or Restrict a Food Employee Who Reports a Symptom and When to Exclude a Food Employee Who Reports a Diagnosis with Symptoms Under the Food Code



Key:
Listed Symptoms for Reporting: (V) Vomiting; (J) Jaundice; (D) Diarrhea; (ST with F) Sore Throat with Fever; (HSP) Highly Susceptible Population; (Gen. Pop.) General Population

Oral Culture



Training Resources > FDA Oral Culture Learner Project - Educational Materials for Retail Food Employees

U.S. Department of Health & Human Services

U.S. Food and Drug Administration
Protecting and Promoting *Your* Health

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Food
Home > Food > Guidance & Regulation > Retail Food Protection

Guidance & Regulation
Retail Food Protection
Training Resources

FDA Oral Culture Learner Project - Educational Materials for Retail Food Employees

FDA's Oral Culture Learner Project provides materials and methods to help food employees understand the reasons why following proper food safety practices is important to prevent illnesses, deaths, and loss of income and reputation resulting from food-related outbreaks. The materials have been designed for oral culture learners, which research has shown most food employees to be.

Using the following link, scroll to the "Industry and Regulators" section to place an order for the posters/storyboards

Publication Request Form

Available Materials
- Posters
- Videos

Educational Posters for Retail Food Employees

These posters/storyboards are designed to enhance food safety training efforts at the retail level by helping food employees understand the important role they play in protecting public health. They are available in nine different languages, including Arabic, English, Hindi, Korean, Russian, Simplified Chinese, Traditional Chinese, Spanish, and Vietnamese.

These materials are not copyrighted. You may post these materials on your website and distribute them freely. We kindly ask, however, that you credit FDA when using or posting the materials.

Materials will soon be available that address cooking, cold holding, date marking, approved sources, and chemical use and storage.

No Bare Hand Contact with Ready-to-Eat Food

Use Gloves or Utensils (PDF, 3.16MB)	Don't Let What Happened to Me, Happen to You (PDF, 2.86MB)	A Foodborne Illness Outbreak that Could Have Been Prevented (PDF, 2.65MB)
(Hindi PDF, 2.91MB)	(Hindi PDF, 3.08MB)	(Hindi PDF, 2.87MB)
(Korean PDF, 3.20MB)	(Korean PDF, 3.26MB)	(Korean PDF, 2.98MB)
русский язык (Russian PDF, 2.77MB)	русский язык (Russian PDF, 2.75MB)	русский язык (Russian PDF, 2.45MB)
体中 (Simplified Chinese PDF, 2.85MB)	体中 (Simplified Chinese PDF, 2.91MB)	体中 (Simplified Chinese PDF, 2.54MB)
Español (Spanish PDF, 3.18MB)	Español (Spanish PDF, 3.20MB)	Español (Spanish PDF, 2.90MB)
繁體中 (Traditional Chinese PDF, 2.87MB)	繁體中 (Traditional Chinese PDF, 2.92MB)	繁體中 (Traditional Chinese PDF, 2.56MB)
Việt (Vietnamese PDF, 2.78MB)	Việt (Vietnamese PDF, 2.79MB)	Việt (Vietnamese PDF, 2.49MB)
(Arabic PDF, 2.88MB)	(Arabic PDF, 1.8MB)	(Arabic PDF, 9.8KB)

Employee Health

http://www.fda.gov/food/guidanceregulation/retailfoodprotection/industryandregulatoryassistanceandtrainingresources/ucm212661.htm[3/7/2014 1:30:22 PM]

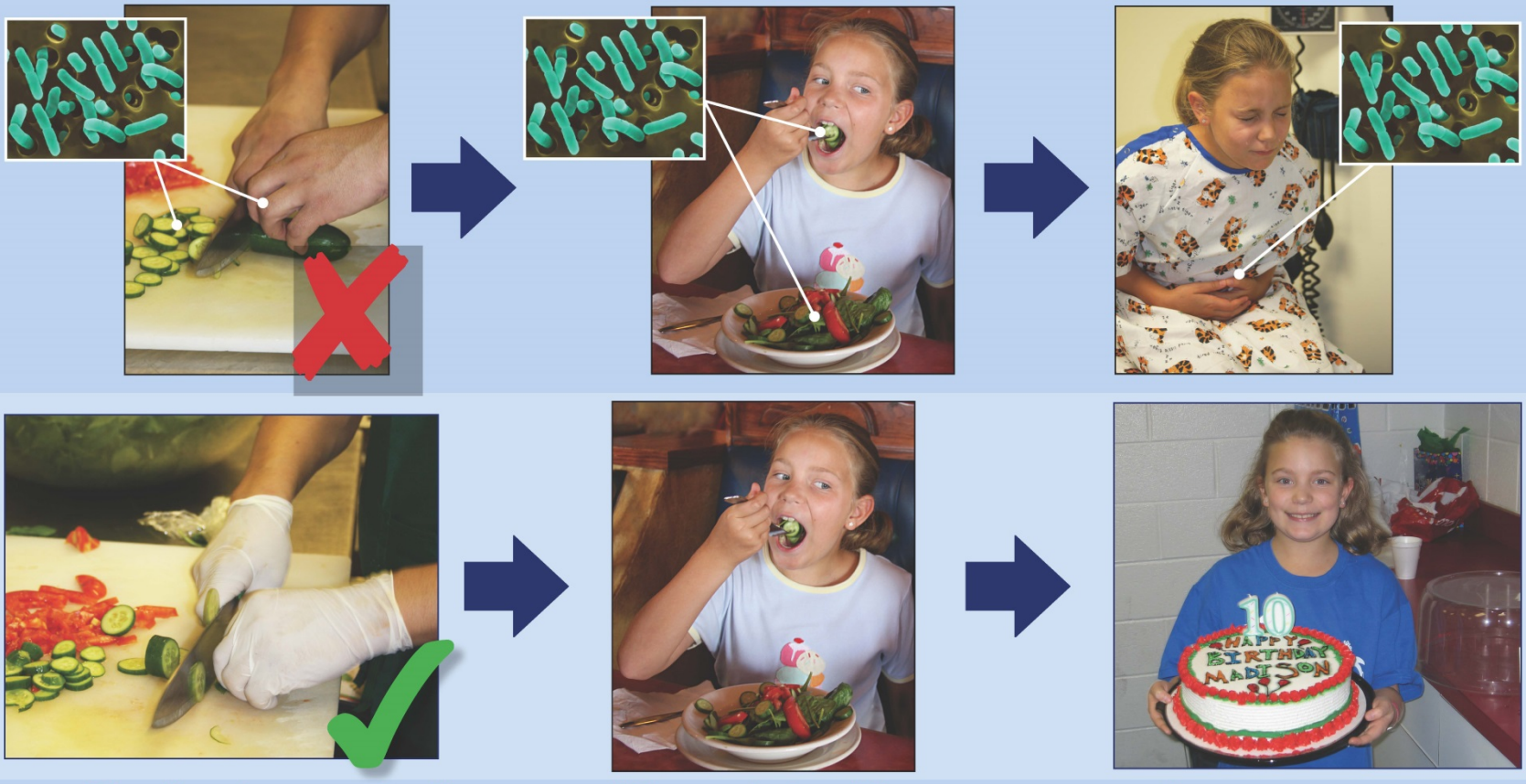
- Arabic
- Chinese
- Hindi
- Korean
- Russian
- Spanish
- Vietnamese

No Bare Hand Contact w/RTE:

Use Gloves or Utensils

FDA

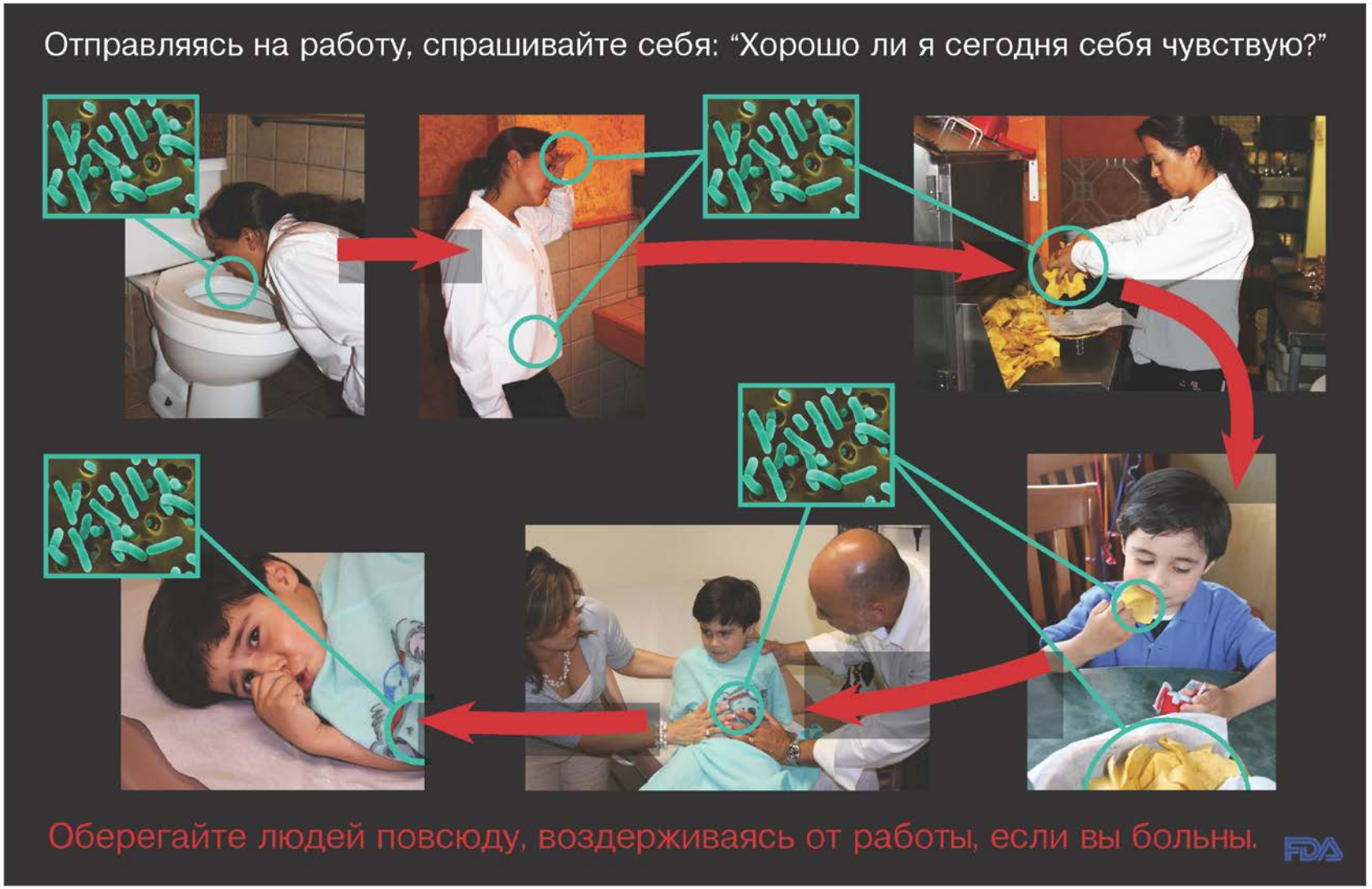
If you wear gloves or use utensils when handling ready-to-eat foods, you keep the food and your customers safe.



Protect people from getting sick. Always wear gloves or use utensils when handling ready-to-eat foods.

FDA

Employee Health:
Think to Yourself



Employee Health:

Would You Want These People in Your Kitchen?

Proteje a todos...

Quédate en casa cuando estes enfermo.

Employee Health:
My Story Could Change Your Life

My Name Is Mariela and My Story Could Change Your Life

I felt sick in the middle of the night, but I had to go to work the next day.

I should have stay home, but I felt better. I didn't know the germs from my sickness were on my hands.

At work, I picked up the chips with my bare hands.

There was a family celebrating their son's 4th birthday. His name was Jose Antonio.

Jose Antonio loved the chips I served him. I went home an hour later because I felt sick again. I was sick for two more days.

While I was at home sick, reports started coming into the health department from all over. In all, over 20 people got sick from eating at our restaurant. They determined that I served all of the people that were sick.

If I could do it over again, I would have never gone to work that day. Having a child myself, I can't get little Jose Antonio out of my mind. He suffered because of me.

Protect People Everywhere.
Stay home if you are sick.

Prevention of Cross-Contamination

A Salad to Die For?

Prevention of Cross-Contamination

Do It Right

Proper Hot Holding of Time:

Temperature Control for Safety Foods

Proper Cooling of Time:

Temperature Control for Safety Foods

Employees FIRST

- **F**ollow company food defense plan and procedures.
- **I**nspect your work area and surrounding areas.
- **R**ecognize anything out of the ordinary.
- **S**ecure all ingredients, supplies, & finished product.
- **T**ell management if you notice anything unusual or suspicious.

Clean: Wash hands/surfaces often

- Wash your hands with hot soapy water for 20 secs
- Wash your cutting boards, dishes, utensils, counter tops
- Use plastic or other non-porous cutting boards
- Consider using paper towels to clean up kitchen surfaces

Wash your hands

- **Wet** with clean, running water, turn off the tap, apply soap.
- **Lather** by rubbing them together with the soap - backs of your hands, between your fingers, and under your nails.
- **Scrub** for at least 20 seconds. Need a timer? "Happy Birthday" 2x.
- **Rinse** well under clean, running water.
- **Dry** using a clean towel or air dry them.

Clean: Food (Produce)

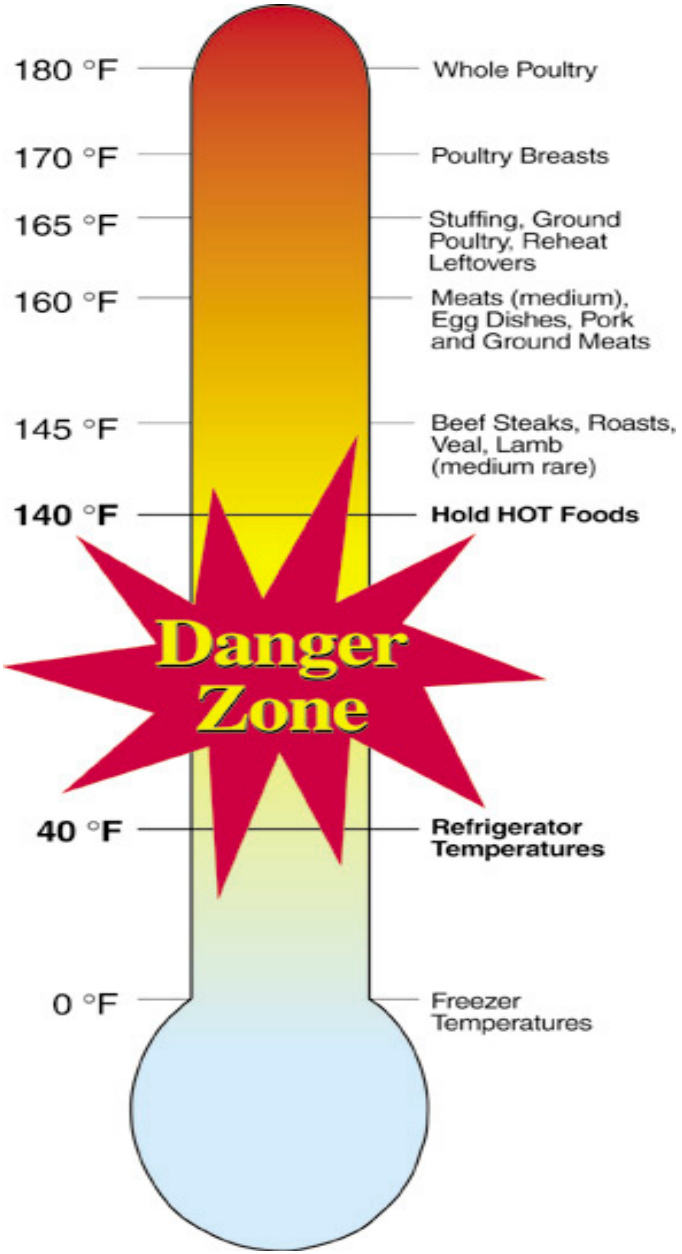
- Cut away any damaged or bruised areas before preparing or eating.
- Gently rub produce while holding under plain running water.
- Wash produce BEFORE you peel it, so dirt and bacteria aren't transferred from the knife onto the food.
- Use a clean vegetable brush to scrub firm produce, such as melons and cucumbers.
- Dry produce with a clean cloth or paper towel.
- Throw away the outermost leaves of lettuce or cabbage.

Separate: Don't cross-contaminate

- Separate raw meat, poultry and seafood from other foods
- If possible, use a different cutting board for raw meat
- Wash hands, cutting boards, dishes, utensils after contact with meat, poultry, seafood
- Never place cooked food on a plate which previously held raw meat, poultry or seafood

Cook: Cook to proper temperatures

- Use a clean thermometer
- Cook roasts/ steaks to 145°F; poultry to 180°F
- Cook ground beef to 160°F
- Cook eggs until the yolk and white are firm; don't use recipes with raw eggs
- Fish should be opaque and flake easily with a fork
- Bring sauces, soups and gravy to a boil when reheating
- Heat other leftovers thoroughly to 165°F



- Keep **Hot** Foods **Hot** and **Cold** Foods **Cold**
- More than two hours is too long
- If in doubt throw it out

In the Kitchen (Listeria)

- Keep Refrigerated Foods Cold
- Clean Refrigerator Regularly
- Clean Hands & Surfaces Often

Recipe for Food Safety

Protecting people from deadly *Listeria* food poisoning

1,600

About 1,600 people in the US get sick from *Listeria* germs each year.

3rd

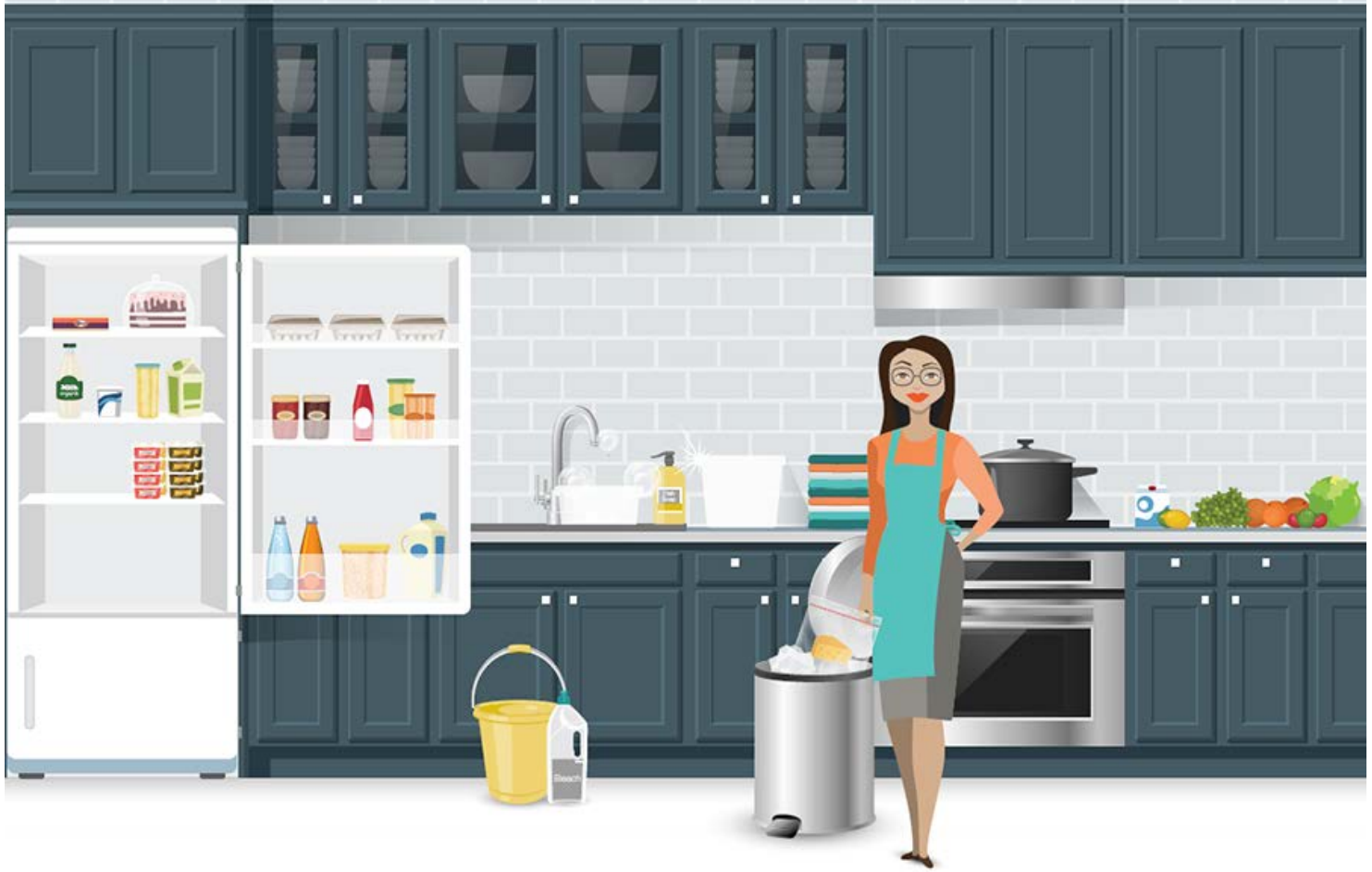
Listeria is the 3rd leading cause of death from food poisoning.

90%

At least 90% of people who get *Listeria* infections are either pregnant women and their newborns, people 65 or older, or people with weakened immune systems.

Source: CDC Vital Signs, June 2013 | www.cdc.gov/vitalsigns

5 Steps to Clean Your Refrigerator



If you have a recalled food item in your refrigerator, it's important to throw out the food and clean your refrigerator. Germs in the recalled food could spread to drawers or shelves in your refrigerator.

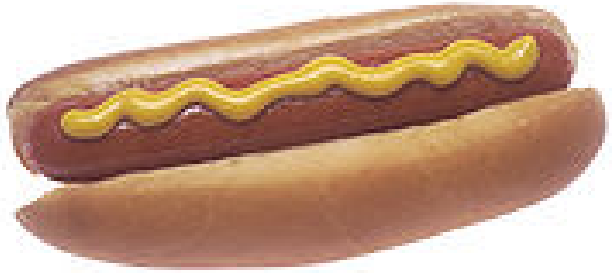
Follow these 5 steps for cleaning your refrigerator

Expiration Dates

- Expiration dating of conventional foods is not required (infant formula exception)
- “Sell by” date is the last day the product should be sold
- “Best if used by” date is the freshness date
- “Do not use after” date is the expiration date

Food Storage

- Hot dogs
  - Opened Package - 1 week
  - Unopened Package - 2 weeks
- Bacon
  - 7 days or freeze - 1 month
- Raw sausage
  - 1-2 days or freeze for 1-2 months
- Leftover pizza
  - 3-4 days or freeze for 1-2 months



Product Dating

Be Prepared for Emergencies!

- Appliance thermometer: refrigerator - 40° F & freezer at or below 0° F
- Freeze containers of water; have coolers on hand
- Group food together in the freezer
- Purchase/make ice cubes in advance, freeze gel packs, know where to buy dry ice and block ice
- Store food on shelves that will be safely out of the way in case of flooding
- Have a supply of bottled water

When the Power Goes Out

- Keep refrigerator and freezer doors closed as much as possible.
- Buy dry or block ice to keep the refrigerator as cold as possible during prolonged power outage. Refrigerator will keep food cold for about 4 hours, if unopened.
- A full freezer will keep the temperature for about 48 hours (24 hours, if half full), if the door remains closed.
- **Never taste a food to determine its safety!**

Once Power is Restored—Determine the Safety of Your Food

- Use appliance thermometer to check the temperature of the freezer: 40° F or below, food is safe and may be refrozen. No thermometer: check each food package. If the food still contains ice crystals, it is safe to refreeze or cook.
  - Refrigerated food should be safe as long as the power was not out more than 4 hours and the refrigerator door was kept shut. Discard any perishable food (such as meat, poultry, fish, eggs, or leftovers) that has been above 40° F for 2 hours or more.
- **When in doubt, throw it out**

- 1. Check for cleanliness.
- 2. Keep certain foods separated.
- 3. Inspect cans and jars.
- 4. Inspect frozen food packaging.
- 5. Select frozen foods and perishables last.
- 6. Choose fresh eggs carefully.
- 7. Be mindful of time and temperature.

Restaurants

- Check cleanliness before you sit down and leave if the restaurant is not up to standards.
- Always order your food cooked thoroughly. (No rare meat.)
- When you order a hot meal make sure it is thoroughly cooked and served hot - if not, send it back.
- Don't eat undercooked or raw foods, e.g. oysters or eggs. Raw eggs can be a hidden hazard in sauces and salad dressings. If you are unsure about the ingredients, ask.

High Risk Foods

- Raw fish/shellfish, raw meat or poultry
- Deli meats
- Unpasteurized fruit or vegetable juice
- Raw alfalfa sprouts
- Raw or lightly cooked eggs/egg products

High Risk Foods:
Raw Milk or Raw Milk Cheese

- Raw milk can transmit:
  L. mono, *Brucella* spp., *E. coli, Campylobacter, Mycobacterium, Salmonella* spp.
- 150x more likely to get sick from raw milk
- [1998 – 2008] - 85 outbreaks/ 1,614 illnesses/ 187 hospitalizations/ 2 deaths
- Pasteurization destroys pathogenic bacteria

High Risk Foods: Eggs

- **Keep eggs safe @ grocery store.**
  - Buy eggs only if sold from a refrigerator/refrigerated case.
  - Open the carton to check eggs are clean; shells are not cracked.
  - Refrigerate promptly.
  - Store eggs in their original carton - use within 3 weeks.
- **Cooking Thoroughly.**
  - Cook eggs until yolk and white are firm. Scrambled -not be runny.
  - Cook casseroles to 160°F . Use a food thermometer to be sure.
  - For recipes that call for eggs that are raw/ undercooked e.g. Caesar salad dressing and homemade ice cream — pasteurized shell eggs, or pasteurized egg products.

High Risk Food: Certain Fish Specific Audiences

Best Choices EAT 2 TO 3 SERVINGS A WEEK

- Anchovy
- Atlantic croaker
- Atlantic mackerel
- Black sea bass
- Butterfish
- Catfish
- Clam
- Cod
- Crab
- Crawfish
- Flounder
- Haddock
- Hake
- Herring
- Lobster, American and spiny
- Mullet
- Oyster
- Pacific chub mackerel
- Perch, freshwater and ocean
- Pickerel
- Plaice
- Pollock
- Salmon
- Sardine
- Scallop
- Shad
- Shrimp
- Skate
- Smelt
- Sole
- Squid
- Tilapia
- Trout, freshwater
- Tuna, canned light (includes skipjack)
- Whitefish
- Whiting

OR

Good Choices EAT 1 SERVING A WEEK

- Bluefish
- Buffalofish
- Carp
- Chilean sea bass/ Patagonian toothfish
- Grouper
- Halibut
- Mahi mahi/ dolphinfish
- Monkfish
- Rockfish
- Sablefish
- Sheepshead
- Snapper
- Spanish mackerel
- Striped bass (ocean)
- Tilefish (Atlantic Ocean)
- Tuna, albacore/ white tuna, canned and fresh/frozen
- Tuna, yellowfin
- Weakfish/seatrout
- White croaker/ Pacific croaker

Choices to Avoid HIGHEST MERCURY LEVELS

- King mackerel
- Marlin
- Orange roughy
- Shark
- Swordfish
- Tilefish (Gulf of Mexico)
- Tuna, bigeye

*Some fish caught by family and friends, such as larger carp, catfish, trout and perch, are more likely to have fish advisories due to mercury or other contaminants. State advisories will tell you how often you can safely eat those fish.

www.FDA.gov/fishadvice

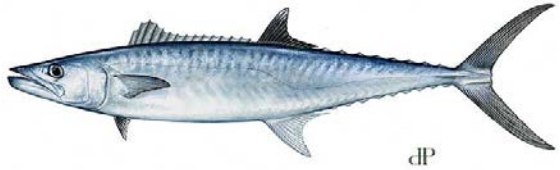
www.EPA.gov/fishadvice

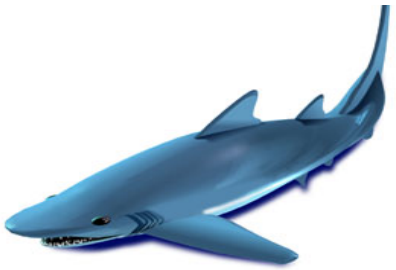
EPA United States Environmental Protection Agency

FDA U.S. FOOD & DRUG ADMINISTRATION

Tilefish

Lopholatilus chamaeleonticeps





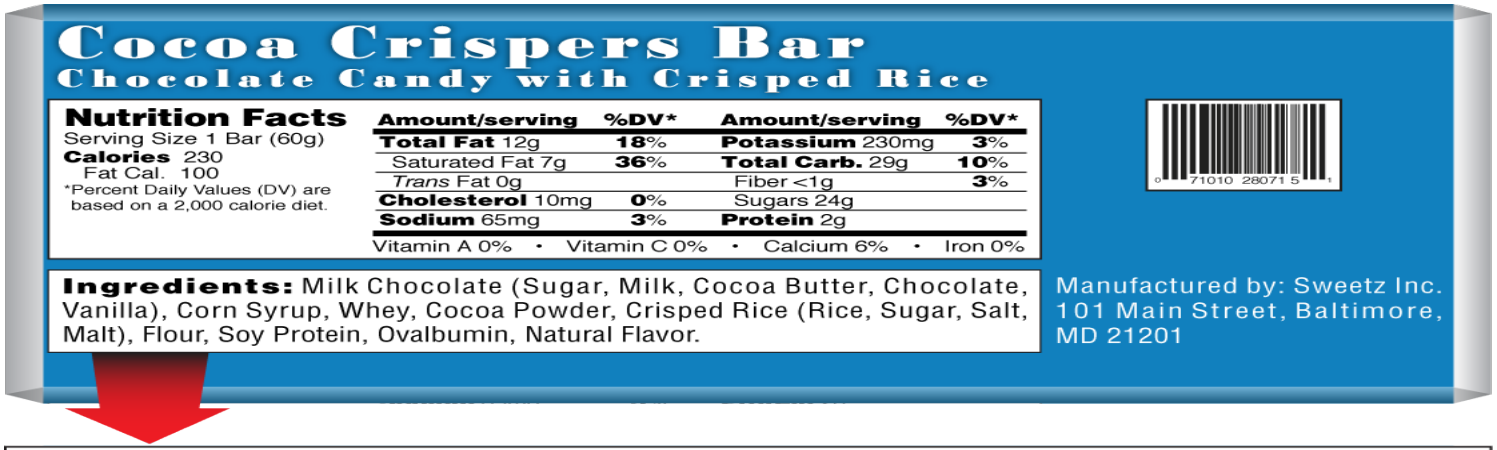
Food Issue: Allergens

- Anaphylaxis - systemic reaction; generalized shock; 29,000 ER visits per year & **150-200** deaths/yr
  - Trace amounts can trigger a rxn
- Gastrointestinal - vomiting, colic, diarrhea, tingling/swelling of mouth and lips
- Respiratory - cough, asthma, tightness in throat, trouble breathing, rhinitis
- Cutaneous - atopic dermatitis, swelling of skin, hives

Major Food Allergens

- Crustacean shellfish (e.g. crab, shrimp)
- Soybeans
- Peanuts
- Tree nuts (e.g., almonds, pecans, walnuts)
- Milk
- Egg
- Wheat
- Fish (e.g., bass, flounder, cod)

Allergen Declaration Within the Ingredient List

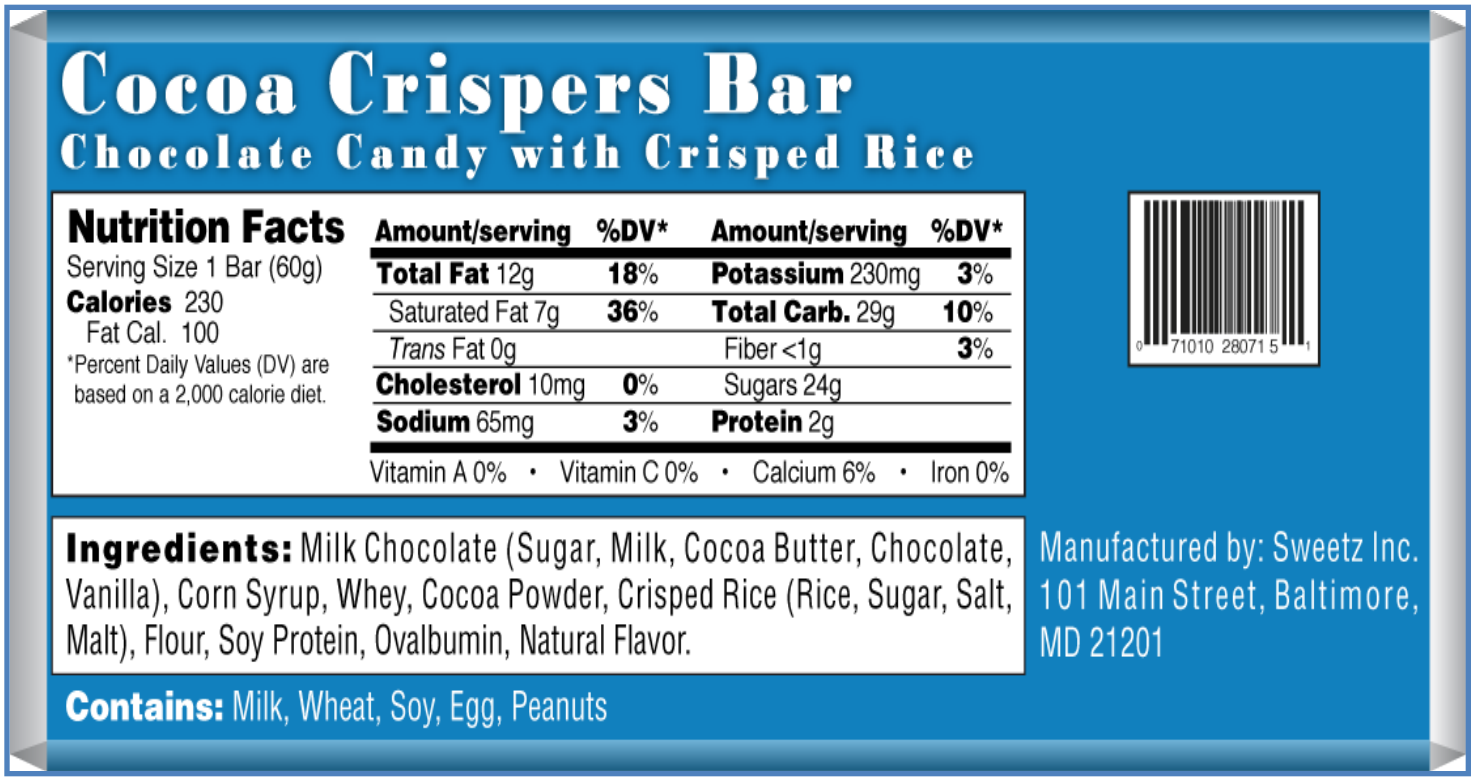


Ingredients: Milk Chocolate (Sugar, Milk, Cocoa Butter, Chocolate, Vanilla), Corn Syrup, Whey, Cocoa Powder, Crisped Rice (Rice, Sugar, Salt, Malt), Wheat Flour, Soy Protein, Ovalbumin (Egg), Natural Peanut Flavor.

OR

Ingredients: Milk Chocolate (Sugar, Milk, Cocoa Butter, Chocolate, Vanilla), Corn Syrup, Whey, Cocoa Powder, Crisped Rice (Rice, Sugar, Salt, Malt), Flour (Wheat), Soy Protein, Ovalbumin (Egg), Natural Flavor (Peanut).

Allergen Declaration Using a "Contains" Statement



Cocoa Crispers Bar

Chocolate Candy with Crisped Rice

Nutrition Facts

Serving Size 1 Bar (60g)

Calories 230

Fat Cal. 100

*Percent Daily Values (DV) are based on a 2,000 calorie diet.

Amount/serving	%DV*	Amount/serving	%DV*
Total Fat 12g	**18**%	**Potassium** 230mg	**3**%
Saturated Fat 7g	**36**%	**Total Carb.** 29g	**10**%
Trans Fat 0g		Fiber <1g	**3**%
Cholesterol 10mg	**0**%	Sugars 24g	
Sodium 65mg	**3**%	**Protein** 2g	

Vitamin A 0% • Vitamin C 0% • Calcium 6% • Iron 0%

0 71010 28071 5

Ingredients: Milk Chocolate (Sugar, Milk, Cocoa Butter, Chocolate, Vanilla), Corn Syrup, Whey, Cocoa Powder, Crisped Rice (Rice, Sugar, Salt, Malt), Flour, Soy Protein, Ovalbumin, Natural Flavor.

Manufactured by: Sweetz Inc. 101 Main Street, Baltimore, MD 21201

Contains: Milk, Wheat, Soy, Egg, Peanuts

“Gluten-Free”

- Celiac disease (~2 million) - chronic inflammatory disorder of small intestine → anemia, osteoporosis, autoimmune thyroid disease
- Prohibited grains:
  - Wheat, meaning any species belonging to the genus *Triticum*
  - Rye, meaning any species belonging to the genus *Secale*
  - Barley, meaning any species belonging to the genus *Hordeum*
  - Crossbred hybrids of wheat, rye or barley (e.g., triticale, which is a cross between wheat and rye)
- Voluntary label: "free of gluten," "without” or “no gluten"
- Level – 20 ppm

Food Additives

- To Maintain or Improve Safety and Freshness
  - Slow product spoilage caused by mold, air, bacteria, fungi
  - Help control contamination
  - Prevents fats and oils from becoming rancid
  - Prevent fresh fruits e.g. apples from turning brown
- To Improve or Maintain Nutritional Value
- Improve Taste, Texture and Appearance

Prior-sanctioned, GRAS, or approved

Food Additives Approval

When evaluating the safety of a substance for approval, FDA considers:

- 1) the composition and properties of the substance
- 2) the amount that would typically be consumed
- 3) immediate and long-term health effects
- 4) various safety factors

The evaluation determines an appropriate level of use that includes a built-in safety margin

Color Additives

- Color additives must be approved by FDA for use in food, drugs, and cosmetics
- Approved color additives are listed in the U.S. Code of Federal Regulations *See* 21 CFR Parts 73, 74, and 82

Food Contaminants

- Natural ingredients
- Pesticides
- Heavy Metals
- Chemical Contaminants
  - Acrylamide
  - Benzene
  - Dioxins and PCBs
  - Ethyl Carbamate
  - Furan
  - Melamine

Arsenic & Rice

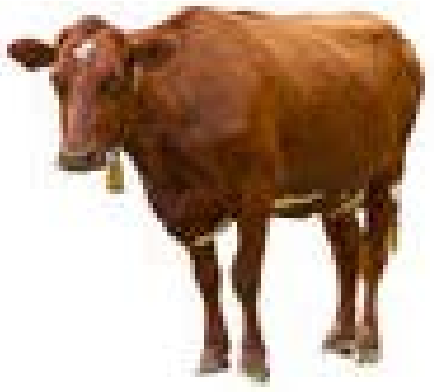
- 1. How does arsenic get in your food?
- 2. What about arsenic in rice?
- 3. What are the potential health effects?
- 4. What is FDA doing in light of its findings?
- 5. If you have an infant or are pregnant, what should you do?
- 6. If you're an adult, what should you do?
- 7. Is it ok for me to eat rice and give it to my children?

Lead in Foods

- 1. What is lead?
- 2. Why is lead in food products?
- 3. Why is the FDA concerned about lead in food?
- 4. Does the FDA test foods for the presence of lead?
- 5. What levels for lead in foods has the FDA set and why?
- 6. Why not set a zero tolerance for lead in food?
- 7. Why doesn't the FDA use the same level (5 parts per billion) it set for bottled water for all foods?
- 8. What is the FDA doing now?
- 9. What is the max daily level for lead exposure from foods?
- 10. What is the FDA doing internationally regarding lead in foods?

Antibiotics

- Antimicrobial Resistance
- Eliminate Use of Medically-Important Antibiotics for Growth Use
- New Guidelines for Drug Manufacturers
- Drug Residue Testing



More Information on Food Safety

- USDA Food Safety and Inspection Service FSIS website and print materials.
- FDA website and print materials.
- "Ask Karen" - 24/7automated response system available at Askkaren.gov and PreguntaleaKaren.gov.
- E-mail inquiries to mphotline.fsis@usda.gov or by *completing the online form*.
- Call USDA Meat and Poultry Hotline at 1-888-MPHotline.
- FDA Food Information Line 1-888-SAFE-FOOD
  Toll-free Hotlines are available Mon - Friday from 10 a.m. to 4 p.m. Eastern Time.

FDA U.S. FOOD & DRUG ADMINISTRATION
OFFICE OF REGULATORY AFFAIRS

4 Steps to Food Safety

CLEAN
Wash hands and surfaces often

SEPARATE
Separate raw meats from other foods

COOK
Cook to the right temperature

CHILL
Refrigerate foods promptly

Is It Done Yet?

Use a food thermometer to be accurate

SAFE COOKING TEMPERATURES

GROUND MEAT & MEAT MIXTURES	Internal temperature
Beef, Pork, Veal, Lamb	160°F
Turkey, Chicken	165°F
FRESH BEEF, PORK, VEAL & LAMB	145°F with a 3 minute rest time
POULTRY	
Chicken & Turkey, Whole	165°F
Poultry Parts	165°F
Duck & Goose	165°F
Stuffing (cooked alone or in bird)	165°F
HAM	
Fresh (raw)	145°F with a 3 minute rest time
Pre-cooked (to reheat)	140°F
EGGS & EGG DISHES	
Eggs	Cook until yolk & white are firm
Egg Dishes	160°F
SEAFOOD	
Fin Fish	145°F or flesh is opaque and separates easily with fork
Shrimp, Lobster & Crabs	Flesh pearly & opaque
Clams, Oysters & Mussels	Shells open during cooking
Scallops	Milky white or opaque & firm
LEFTOVERS & CASSEROLES	165°F

Keep Food Safe: Check Your Steps at www.FoodSafety.gov

FDA *Safety ■ Health ■ Science ■ Nutrition*

March 2015

www.foodsafety.gov