

# Chapter 20

Food Safety and Storage

# What Not To Do In The Kitchen

On a sheet of paper record the mistakes you see in the video



# Food Safety

- ▶ We often take food safety for granted
- ▶ **Contaminants:** substances that make food unfit for use
  - ▶ Can pass into food at anytime

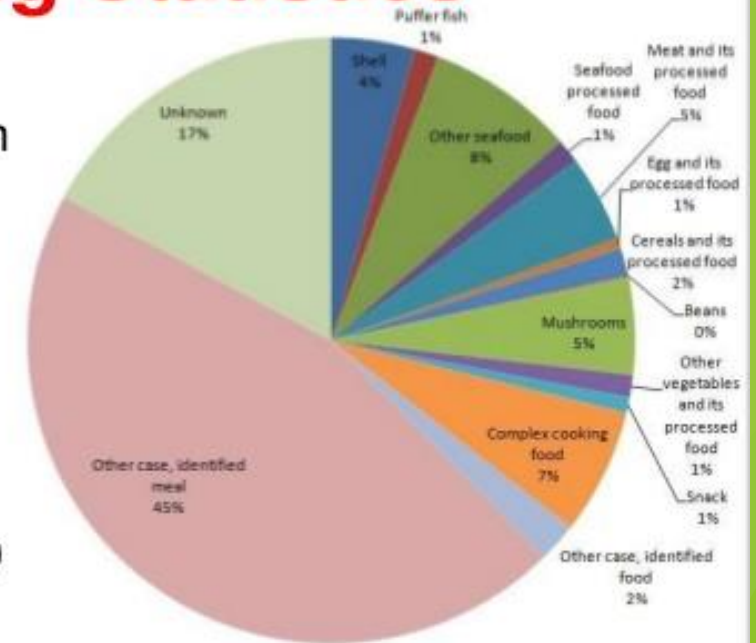


# Foodborne Illness

- ▶ Often mistaken for a “flu bug”
- ▶ **Foodborne Illness:** sickness caused by eating food that contains a harmful substance
- ▶ Most at risk
  - ▶ Children, pregnant women, older adults, and chronically ill

## Food Poisoning Statistics

- One in six Americans (48 million people) get sick from foodborne illnesses every year;
- 128,000 out of these cases were hospitalized;
- From these numbers, 3,000 dies



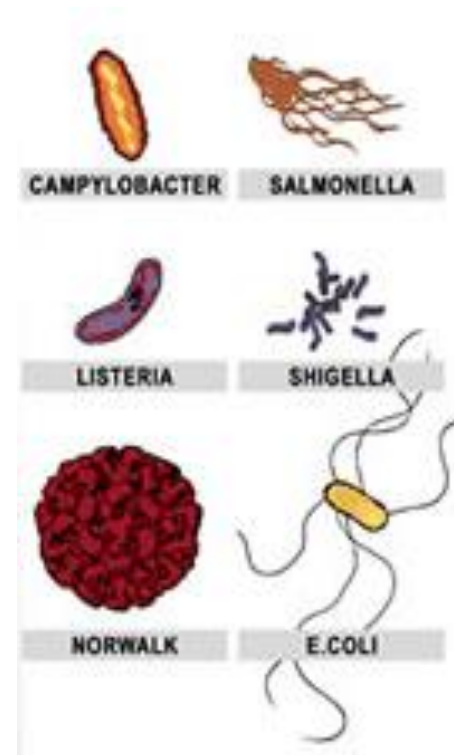
*Center for Disease Control  
and Prevention*

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# Roots of Foodborne Illness

- ▶ Most can be traced to microorganisms: living creatures that are visible only through a microscope
  - ▶ Bacteria: single-celled organisms
    - ▶ Many are naturally present in the environment and are needed
    - ▶ Others are dangerous like Toxins: poisons
    - ▶ Spores: protected cells that develop into bacteria
    - ▶ Reproduces at a high rate
    - ▶ Food can look, taste, and smell safe when it is not



# Roots of Foodborne Illness

- ▶ **Food Safety:** Keeping food safe to eat
  - ▶ Keep yourself and your kitchen clean
  - ▶ Don't cross contaminate
  - ▶ Cook food thoroughly
  - ▶ Refrigerate food promptly



# Cleanliness in the Kitchen



- ▶ **Sanitation:** the prevention of illness through cleanliness
- ▶ **Personal Hygiene:** keeping yourself clean to avoid transferring harmful bacteria when handling food
- ▶ **20-second scrub:** Use soap and warm water, scrub your hands for 20-seconds
  - ▶ Do this before working in the kitchen
  - ▶ Do this after handling raw meat, poultry, fish, shellfish, and eggs
  - ▶ Do this after using the bathroom, blowing your nose, or handling pets
  - ▶ Do this after touching your face, hair, or any other part of your body
- ▶ Wear clean clothes, tie back hair, remove jewelry, roll up sleeves, cover any open wounds

# A Clean Kitchen



## ▶ Tips to follow

- ▶ Keep pets out of the kitchen
- ▶ Wash work surfaces and utensils before using
- ▶ Wash tops of cans
- ▶ If you use a spoon to taste food, wash it before using it again
- ▶ Change dishtowels often. Use a separate ones for hands, dishes, and other purposes
- ▶ Make sure all towels are put in the laundry and replaced with clean ones
- ▶ Make sure pests are under control-  
clean up crumbs and spills



# Cleanup Time



- ▶ Make sure dishes are NEVER left dirty
- ▶ Scrape and rinse soiled dishes
- ▶ Keep sharp knives separate
- ▶ Fill a dishpan or sink with hot sudsy water
- ▶ Using a dishcloth (NO PAPER TOWEL) wash the dishes
- ▶ Rinse dishes thoroughly
- ▶ Let air dry or dry with a clean, dry towel
- ▶ Wash all work areas and appliances
- ▶ Mop/sweep up any spills
- ▶ Wash the sink
- ▶ If using a disposal, make sure to run it with the water ON

# Don't Cross-Contaminate

- ▶ **Cross-Contamination:** occurs when harmful bacteria spread from one food to another.
- ▶ When preparing raw meat, poultry, or seafood, wash EVERY surface with hot soapy water
- ▶ Put cooked food on a clean plate. Do not reuse the plate that held the raw food
- ▶ Make sure your dining surface is clean
- ▶ Make sure serving utensils are clean and in each dish. NO HANDS



# Don't Cross-Contaminate

- ▶ Cutting boards- a common source of cross contamination
  - ▶ Have 2 cutting boards-one for meat, poultry, seafood and one for other foods
  - ▶ Plastic is easier to wash
  - ▶ Replace when they wear out or develop cuts and grooves











# Cook Food Thoroughly



- ▶ Bacteria grows quickest at room temperature
- ▶ During cooking, heat kills most bacteria
- ▶ During refrigeration bacteria grows slowly, but stays alive
- ▶ During freezing bacteria doesn't grow but isn't killed
- ▶ Test doneness by checking the internal temperature: temperature at the thickest part of the food (usually want a temperature of 160)
- ▶ Do not taste foods containing animal products until they are fully cooked
- ▶ Hot foods should be hot, cold foods should be cold
- ▶ Follow the 2 hour rule

Recommended Safe Minimum Internal Temperatures



						
Steaks, roasts 145 °F	Fish 145 °F	Pork 160 °F	Ground beef 160 °F	Egg dishes 160 °F	Chicken breasts 165 °F	Whole poultry 165 °F

# Refrigerate Food Promptly

- ▶ Perishable foods need to be in the refrigerator or freezer
- ▶ Leftovers should be refrigerated or frozen before cooling to room temperature
- ▶ Throw out any foods that have been at room temperature for too long or in the refrigerator past 3-4 days



# Thawing Foods



- ▶ Never defrost food at room temperature
  - ▶ Bacteria will grow on the outside before the inside is defrosted
- ▶ Thaw safely by...
  - ▶ Placing in a container in the refrigerator
  - ▶ Place food in a watertight bag and submerge in cold water, change every 30 mins
  - ▶ Defrost in a microwave-must cook the food right away!
  - ▶ Let the food thaw as you cook it-just takes longer to cook



# Spoiled Food

- ▶ Light, heat, air, and other elements make food spoil
- ▶ Proper storage protects food quality
- ▶ Look for signs of spoilage
- ▶ Avoid foods in damaged packaging
- ▶ Do not taste food you suspect might be spoiled

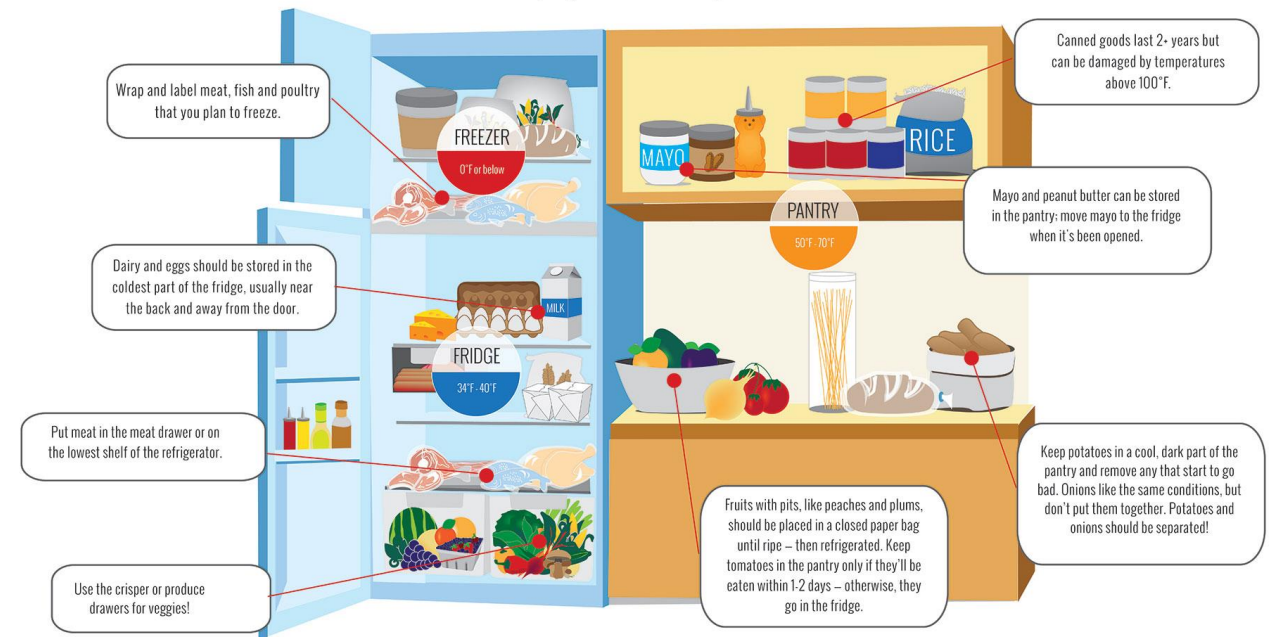


# How to Store Food

- ▶ To protect the quality of foods...
  - ▶ Buy only what you need
  - ▶ Follow package directions
  - ▶ “First in, first out”
  - ▶ Check sell-by and/or use-by dates
  - ▶ Clean storage areas

## FOOD STORAGE SAVVY: YOUR GUIDE TO WHAT GOES WHERE

First comes shopping, then comes putting food away – but where? You may be surprised to learn the best places to store your groceries! Here's a helpful guide from the Academy of Nutrition and Dietetics.





# Room Temperature Storage

- ▶ Between 32 and 85 degrees in a clean dry, dark place away from light
- ▶ Good for shelf stable foods
  - ▶ Unopened canned foods
  - ▶ Dry beans
  - ▶ Oils and shortening
  - ▶ Grain products (excludes whole grains)
- ▶ Once opened check the package for continued storage directions

# Refrigerator Storage

- ▶ Refrigerator should be lower than 40 degrees
- ▶ Use the door for soft drinks and less perishable items
- ▶ Tightly cover foods
- ▶ Foods that need to be refrigerated
  - ▶ Ones that were refrigerated in the store
  - ▶ Most fresh fruits and vegetables (excludes ones in the center of the section)
  - ▶ Whole grain products-high oil content makes them prone to rancidity: spoilage due to the breakdown of fats
  - ▶ Baked products with fruit and cream fillings
  - ▶ Any food that says to on its label



# Freezer Storage

- ▶ Should be 0 degrees or below
- ▶ Foods keep from 1 month up to 1 year (check the charts in your book on pg 287)
- ▶ Full freezers function best
- ▶ High water content foods do not freeze well
- ▶ Only freeze fresh produce if you plan to cook them
- ▶ Dairy products separate out when frozen



# Packaging Foods for Freezing

- ▶ Avoid freezer burn: moisture loss caused when food is improperly packaged or stored in the freezer too long
- ▶ Freezer proof materials must be vapor and moisture resistant and airtight
- ▶ Squeeze out as much air as possible
- ▶ Leave enough space to allow the food to expand



# When The Power Goes Off

- ▶ If you can't move the food to a new appliance keep the doors closed as much as possible
- ▶ A full freezer should keep frozen for 2 days
- ▶ Separate raw meat, poultry, and seafood
- ▶ Food will keep in a refrigerator for 4 to 6 hours
- ▶ Check food for signs of spoilage

# Safeguarding The Food Supply



- ▶ The Food and Drug Administration (FDA) is charged with the overall safety of the food supply
- ▶ Most foods contain preservatives, dyes, or other additives
  - ▶ These have been approved by the FDA
  - ▶ Those with a long history of safe use are classified as Generally Recognized as Safe (GRAS List)



# Fat Replacers

- ▶ Many products are now made with substitutes for fat
- ▶ These mimic the smoothness and creaminess of fat
- ▶ Can be made from...
  - ▶ Carbohydrates- good for salad dressings
  - ▶ Proteins- refrigerated and frozen products
  - ▶ Chemically altered fats- baked foods, cake mixes, frosting, dairy foods,  
some fried foods
    - ▶ Olestra- passes through the body without being digested or absorbed
- ▶ While lower in fat may be higher in calories



# Safeguarding The Food Supply

- ▶ Designed to predict and prevent threats to food safety
- ▶ **Irradiation**: process of exposing food to a high-intensity energy waves to increase its shelf life.
  - ▶ Has been met with mixed response
- ▶ **Recall**: immediate removal of a product from store shelves
  - ▶ Check package numbers and return the product to the store

International Food Irradiation Symbol



attached to: Snyder, O.P. and Poland, D.M. 1995. Food irradiation today.  
HITM. St. Paul, MN.



# Government Agencies



- ▶ Environmental Protection Agency
  - ▶ Controls the use of pesticides
  - ▶ Tests the levels of chemical residues
  - ▶ A buildup of these can cause health problems
  - ▶ Each pesticide there is a **tolerance**: a maximum safe level for a certain chemical in the human body
- ▶ Food Safety and Inspection Services
  - ▶ Responsible for the wholesomeness of meat, poultry, and eggs
  - ▶ Checks the sanitation of packing plants and storage facilities
  - ▶ Test food products for residues of hormones, antibiotics, and other drugs

# Government Agencies

- ▶ Centers for Disease Control and Prevention
  - ▶ National Center for Infectious Diseases- monitor foodborne and waterborne diseases
- ▶ **Bioterrorism**: the intentional use of biological agents to harm people, animals, or plants

