

Food Safety:

Basic Overview of Safely Handling Food





Food Safety Training

- **The Nevada County Environmental Health Department requires that one person be in the food booth at any given time with a working knowledge of safe food handling practices.**
- **If you are planning on serving food as part of a 4-H activity, event or fundraiser, the food preparation and service must be in compliance with all local (city and county) health department rules and state laws.**

How do we “Make it Safe?” and “Serve it Safe?”



Food can become contaminated and cause foodborne illnesses three different ways:

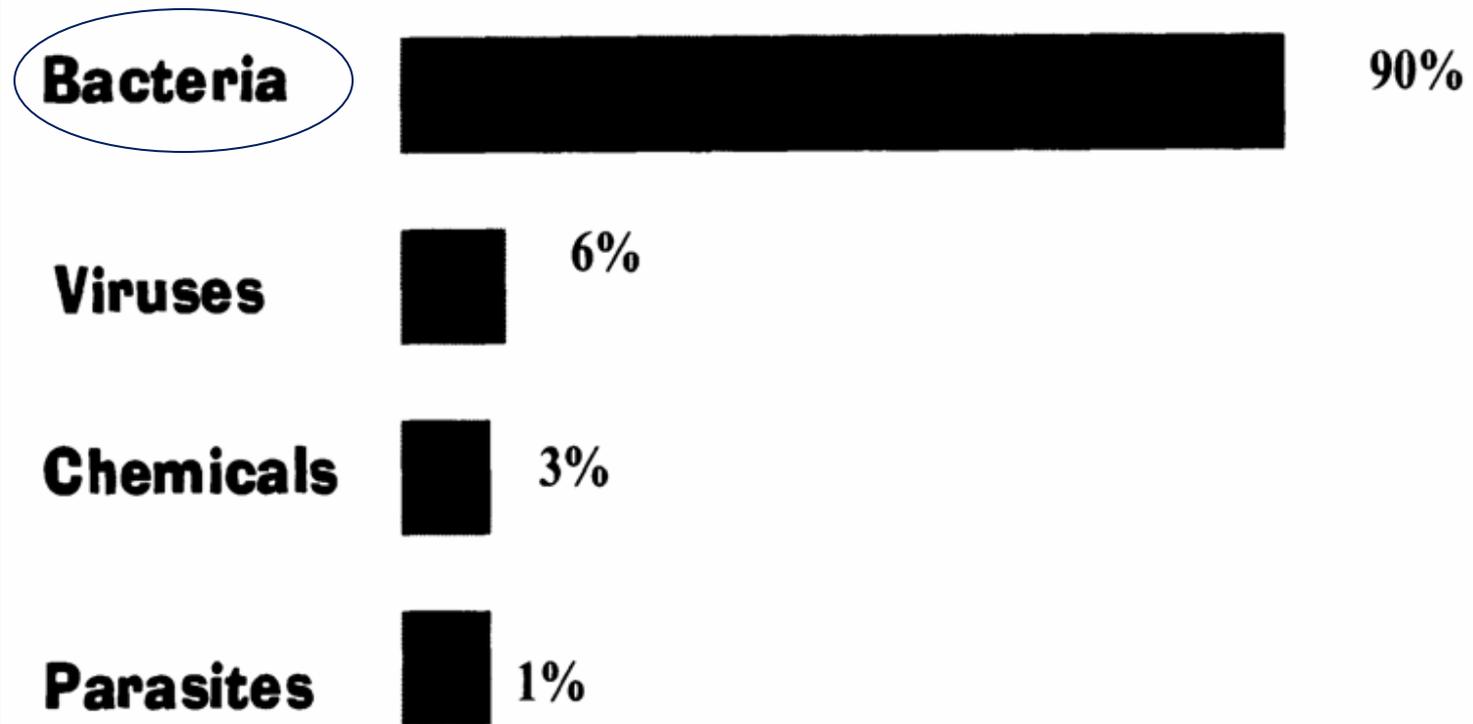
- **Biological** - bacteria, viruses, mold, parasites, and naturally poisonous plants, fish, and shellfish
- **Chemical** – cleaning solutions, insecticides, industrial processing chemicals, agricultural chemicals, and pesticides and pest bait
- **Physical** – pieces from food packaging, glass fragments, pieces from machinery or equipment, dust and dirt, insects, hair, fingernails, toothpicks, adhesive bandages, leaves & stalks from vegetables



All people are at risk for food borne illness. Some groups are at a higher risk because they have a **weakened immune system**.

- Infants and young children
- Elderly people
- Pregnant women
- People with diabetes

Common Agents of Contamination

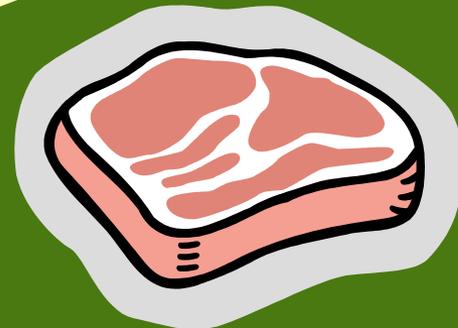
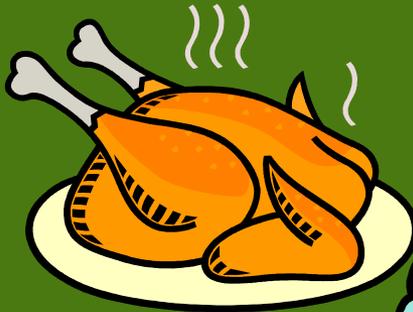


Bacteria grow best when the following conditions are met:

- **Food**
- **Acidity**
- **Time**
- **Temperature**
- **Oxygen**
- **Moisture**
- **AKA FATTOM**

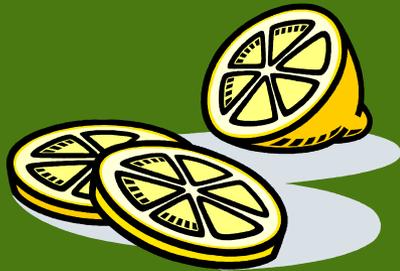
Food:

- Most bacteria prefer foods that are high in protein, cut fruits and vegetables, and high moisture content.



Acidity:

- Acidic foods such as lemon juice and vinegar make it difficult for most bacterial to multiply and are useful for preserving foods.



Time:

- Not much time is needed for bacteria to grow to a level that causes foodborne illness; they grow by dividing; one bacterium splits in two so two becomes four, four become eight, etc



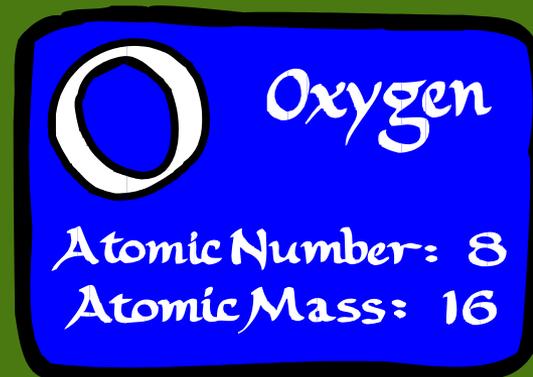
Temperature:

- Bacteria will multiply most rapidly at temperatures between 40°F and 140°F = **DANGER ZONE!**



Oxygen:

- Some bacteria need oxygen to multiple while others can thrive without it. And then some bacteria can live with or without it.



Moisture:

- Pathogenic bacteria need moisture to stay alive and cannot multiply in dried foods. However, add water to that dried food and you provide the perfect conditions for bacterial growth.



- 
- Bacteria are everywhere, including potentially harmful bacteria, unless something is sterilized.

The bacteria can make you ill when they are in an environment where they can multiply.

- Home grown produce
- Organic produce
- Commercial produce
- Raw meat or poultry
- Unwashed hands
- Insects



How is Pathogenic Bacteria spread causing contamination?

- Raw food
- People
- Pest & pets
- Air & dust
- Water
- Soil
- Food waste

- 
- Depending on the type of agent responsible, you can become ill as soon as one-half hour after eating the contaminated food or as long as 6 weeks after eating it.

4 Steps to Food Safety

- **Clean**



- **Separate**



- **Cook**



- **Chill**



Step 1: Clean



- Hands
- Utensils
- Surfaces
- Fruits & Vegetables



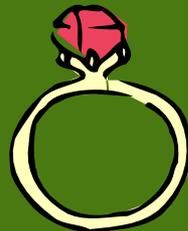
Do NOT wash or rinse meat and poultry as this could spread bacteria to other foods

Good Personal Hygiene Requires:

- Wash hands
- Clean clothing
- Tie hair back or wear hat or hair net
- ***No smoking and/or eating in food preparation and washing areas



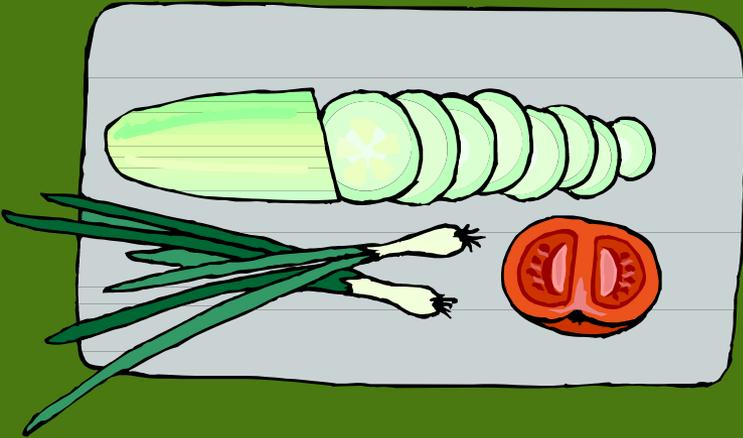
- No jewelry



Step 2: Separate - How do you prevent contamination?

- Raw, cooked, ready-to-eat, and potentially hazardous foods are kept apart at all times (i.e., shopping, preparing, storing).
- Store cooked and ready-to-eat foods above raw foods.
- Clean and sanitize utensils, plates, and surfaces after working with raw foods and before working with ready-to-eat foods.
- Keep foods covered until use.
- Use utensils to move food.
- Avoid touching foods with bare hands.
- Wear disposable gloves.
- Wash all raw vegetables, fruit, and rice before use.
- Maintain food areas and food equipment in good condition.
- Sick people should not prepare, cook, or serve food.
- Follow strict hygiene habits.

Use Different Cutting Boards

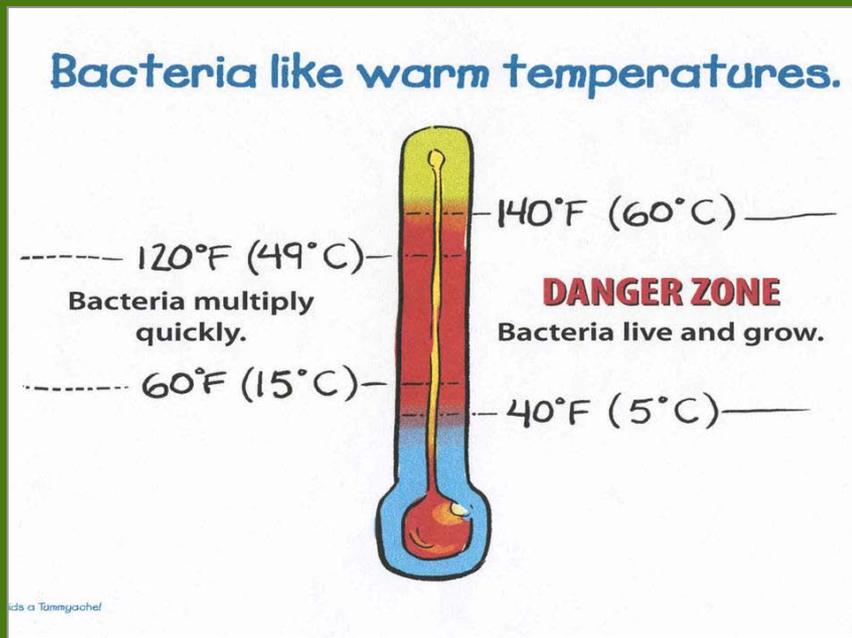


- Use one cutting board for fresh produce



- Use a separate one for raw meat, poultry, and seafood.

Step 3: Cook



- Cook foods to a safe temperature to kill microorganisms.
- The **ONLY** way to know if food has been cooked to a safe internal temperature is to use a **food thermometer!**
 - Calibrate routinely, after measuring extremely hot or cold temperatures, and when dropped.





Appearance, odor and taste cannot accurately determine if food is safe.

Illness-causing agents that contaminate food, including bacteria, generally do not create any noticeable changes in food as they multiply.

"Is it *done* yet?"

You can't tell by *looking*. Use a **food thermometer** to be sure.

USDA 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

www.IsItDoneYet.gov

USDA Meat & Poultry Hotline: 1-888-MPHotline (1-888-674-6854)



United States Department of Agriculture
Food Safety and Inspection Service

USDA is an equal opportunity provider and employer.
Slightly Revised April 2006

Temperature Control: This will help control conditions that promote bacterial growth

- Keep cold food cold, ideally at 40°F or below.
- Keep hot food hot, at 140°F or above.
- When cooking food in a microwave oven:
 - Cook to 165°F;
 - Cover, rotate, and stir
 - Allow to stand after cooking





Temperature Control While Cooking:

To make sure all parts of the food is heated to safe levels:

- Cut large roasts and poultry into small portions.
- Cook stuffing separate.
- Stir stews and casseroles during cooking.
- Be extra careful when cooking with Microwave ovens - they cause cool spots often.

Step 4: Chill



- Chill (refrigerate) perishable foods promptly and defrost foods properly



Causes of Foodborne Illness

4% Use of leftovers

7% Improper cleaning

7% Cross contamination

11% Contaminated raw food

12% Inadequate reheating

16% Improper hot storage

16% Inadequate cooking

20% Infected persons touching food

21% Time between preparing and serving

40% Improper cooling of foods



Temperature Control While Cooling Hot Food:

Hot food passes through the “danger zone” as it cools so you must cool promptly:

- Blast chiller, ice bath, or refrigerator
 - Leave container cover open until food has cooled
- Use clean, cold container
- Use shallow trays and pans
- Stir periodically speeds up cooling process
- Remove cooked meats from their juices before cooling
- Cool in small amounts
- Cool foods from 140° to 40°F quickly.

Temperature Control While Thawing Frozen Food:

Many raw frozen items, such as meat and poultry should be completely thawed before cooking:

- Use thawing cabinet or refrigeration unit.
- Place on lowest shelf.
- Use microwave ovens if manufacturer's instructions are followed carefully.

Temperature Control While Reheating Food:

- Reheat foods to at least 165°F.
- Reheat gravies, sauces, and soups to a boil.
- Hot foods should be cooled and reheated only one time.
- Remove from refrigeration just before reheating and serving.

What To Do With Cold Foods?

- Cold food should be kept on ice or in a cooler.
- Cut fruits and vegetables can grow bacteria – keep cold.
 - Do not leave out of refrigeration more than 2 hours.





Discard any remaining food
that has been at room
temperature for more than 2
hours, maximum!

Recommended Refrigerator & Freezer Temperatures



- Set refrigerator at 33° to 40°F
- Set freezer at 0°F or less.
- Use thermometers in and check weekly

This information is just the tip of the iceberg for handling food safely.

For further information, contact your local health department or

logon to

<http://www.foodprotection.org>.



Internet Guide to Food Safety

- Food Safety and Inspection Service: www.fsis.usda.gov
- Government Food Safety Information: www.foodsafety.gov
- FDA: www.cfsan.fda.gov
- CDC: www.cdc.gov/foodsafety
- Partnership for Food Safety Education: www.fightbac.org
- UC Food Safety Website: <http://groups.ucanr.org/ucfoodsafety/>
- Food Safe: <http://foodsafe.ucdavis.edu>
- Sea Grant (Seafood Safety): <http://seafood.ucdavis.edu>