Cooking Merit Badge

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(presentation notes by Katie Blanchard)

Cooking Safety

Before cooking in ANY kitchen know where your safety items are

Safety Items: Fire extinguisher, hot pads & water source

2 common types of kitchen fires

- Grease fires—smother with flour or damp cloths
- Gas fires—water or extinguisher

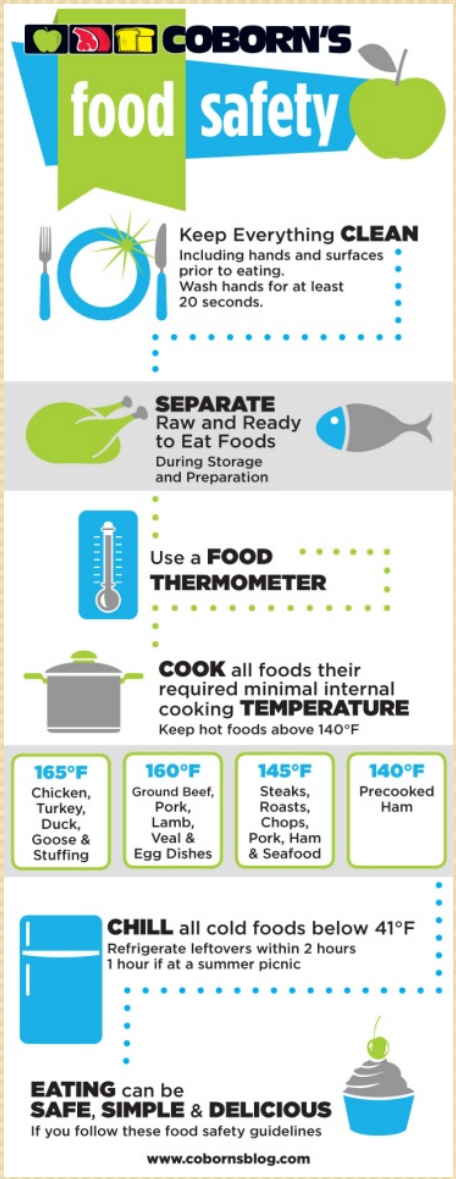
- CALL 911

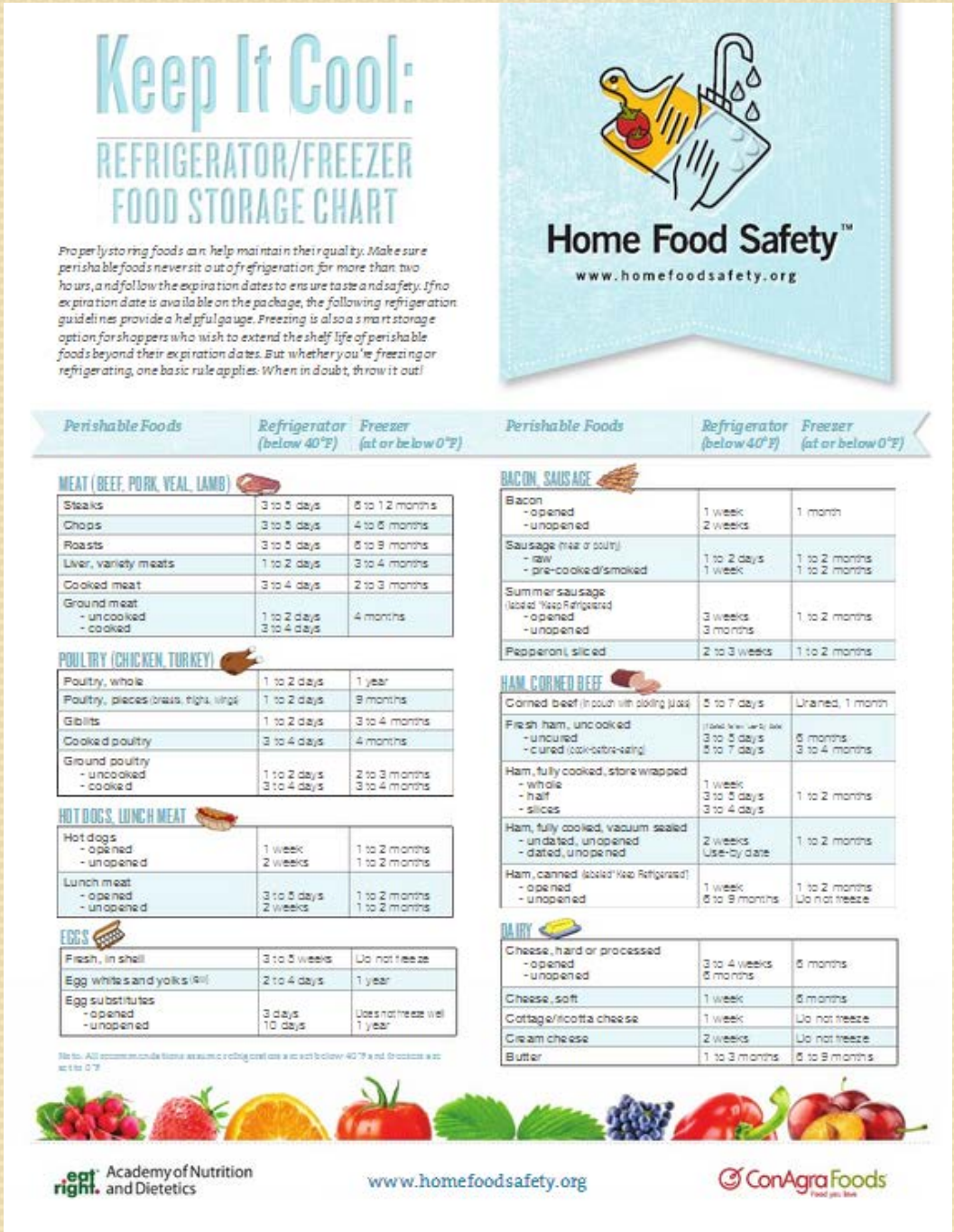
Common Injuries from Cooking

- Burns & Scalding
  - Treatment—cold water, keep area clean and covered
- Choking
  - Heimlich Maneuver
- Allergic Reactions
  - Call 911
- Cuts
  - Treatment—clean injured area and cover with bandage (possible use glove to not further contaminate any prepared food)
- Scrapes
  - Treatment—clean area and cover with bandage.

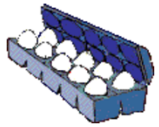
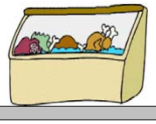
FOOD TRANSPORTATION

http://www.foodsafety.gov





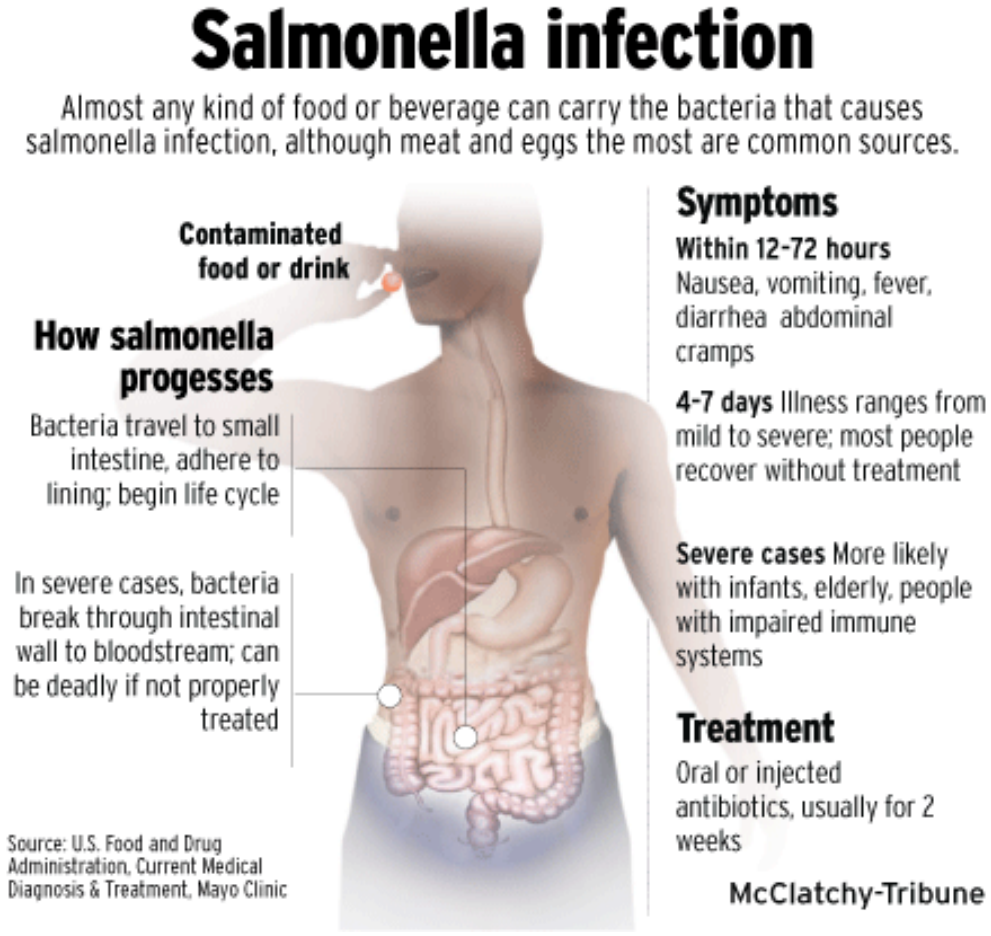
Refrigerator and Freezer Storage Chart

		Refrigerator	Freezer
		(40°F) (4.5°C)	(0°F) (-18°C)
	**Eggs**		
	Fresh, in shell	4-5 weeks	Don't freeze
	Hardcooked	1 week	Doesn't freeze well
	Egg substitutes, opened	3 days	Don't freeze
	Unopened	10 days	1 year
	**Dairy Products**		
	Milk	1 week	3 months
	Cottage cheese	1 week	Doesn't freeze well
	Yogurt	1-2 weeks	1-2 months
	Commercial mayonnaise	2 months	Don't freeze
	(refrigerate after opening)		
	**Vegetables**	**Raw**	**Blanched/cooked**
	Beans, green or waxed	3-4 days	8 months
	Carrots	2 weeks	10-12 months
	Celery	1-2 weeks	10-12 months
	Lettuce, leaf	3-7 days	Don't freeze
	Lettuce, iceberg	1-2 weeks	Don't freeze
	Spinach	1-2 days	10-12 months
	Squash, summer	4-5 days	10-12 months
	Squash, winter	2 weeks	10-12 months
	Tomatoes	2-3 days	2 months
	**Deli Foods**		
	Entrees, cold or hot	3-4 days	2-3 months
	Store-prepared or homemade salads	3-5 days	Don't freeze
	**Hot dogs & Lunch Meats**		
	Hotdogs, opened package	1 week	
	Unopened package	2 weeks	1-2 months in freezer wrap
	Lunch meats, opened	3-5 days	1-2 months
	Lunch meats, unopened	2 weeks	1-2 months
	**TV Dinners/Frozen Casseroles**		
	Keep frozen until ready to serve		3-4 months

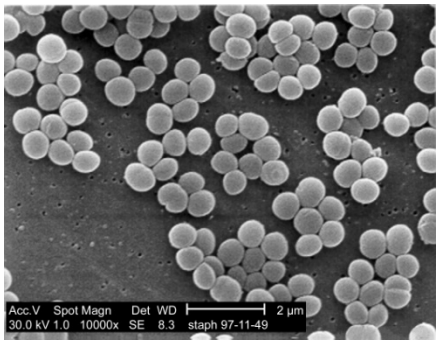
Cross Contamination

- Wash hands and gloves
- Separate your foods
- Handle food separately!
- Use different cutting boards—plastic and different colors for different types of foods!
- Correct temperatures
- Clean surfaces as you go!

Salmonella enteritis



Staphylococcal enteritis



From Wikipedia

Staphylococcal enteritis is an inflammation that is usually caused by eating or drinking substances contaminated with staph enterotoxin. The toxin, not the bacterium, settles in the small intestine and cause inflammation and swelling. This in turn can cause abdominal pain, cramping, dehydration, diarrhea and fever.[1]

Foods at high risks are those prepared in large quantities. Staphylococcus aureus is a true food poisoning organism. It produces a heat stable toxin enterotoxin when allowed to grow for several hours in foods such as cream-filled baked goods, poultry meat, gravies, eggs, meat salads, puddings and vegetables. It is important to note that the toxins may be present in dangerous amounts in foods that have no signs of spoilage, such as a bad smell, any off color, odor, or textural or flavor change.[2][3]

Symptoms

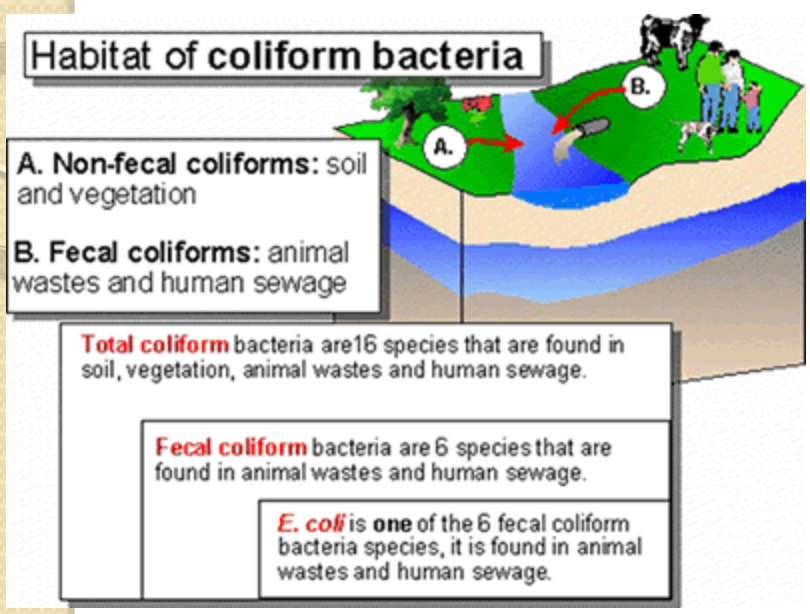
Common symptoms of Staphylococcus aureus food poisoning include: a rapid onset which is usually 1–8 hours, nausea, explosive vomiting for up to 24 hours, abdominal cramps/pain, headache, weakness, diarrhea and usually a subnormal body temperature. Symptoms usually start one to six hours after eating and last less than 12 hours. The duration of some cases may take two or more days to fully resolve.[6]

Treatment and diet

Treatment is supportive and based upon symptoms, with fluid and electrolyte replacement as the primary goal. Dehydration caused by diarrhea and vomiting is the most common complication. To prevent dehydration, it is important to take frequent sips of a rehydration drink (like Gatorade) or try to drink a cup of water or rehydration drink for each large, loose stool.

Dietary management of enteritis consists of starting with a clear liquid diet until vomiting and diarrhea end and then slowly introduce the BRATT diet. The BRATT diet consists of bananas, rice, applesauce, tea, and toast. It is also important to avoid foods that are high in fiber or are possibly difficult to digest.[7]

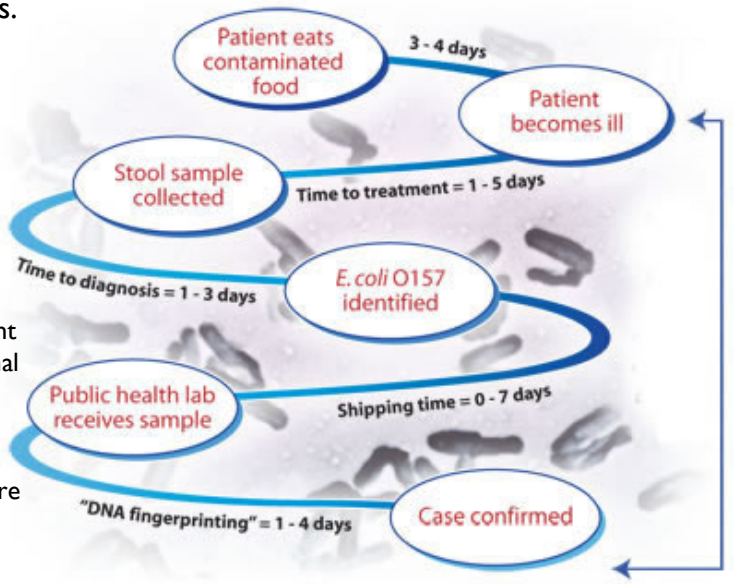
E. Coli (Escherichia Coli) enteritis



E. coli is the name of a type of bacteria that lives in your intestines and in the intestines of animals. Although most types of *E. coli* are harmless, some types can make you sick.

The worst type of *E. coli*, known as *E. coli O157:H7*, causes bloody diarrhea and can sometimes cause kidney failure and even death. *E. coli* O157:H7 makes a toxin called Shiga toxin and is known as a Shiga toxin-producing *E. coli* (STEC). There are many other types of STEC, and some can make you just as sick as *E. coli* O157:H7.

One severe complication associated with *E. coli* infection is hemolytic uremic syndrome (HUS). The infection produces toxic substances that destroy red blood cells, causing kidney injury. HUS can require intensive care, kidney dialysis, and transfusions.



Sources: Contaminated food, especially undercooked ground beef, unpasteurized (raw) milk and juice, soft cheeses made from raw milk, and raw fruits and vegetables (such as sprouts)
Contaminated water, including drinking untreated water and swimming in contaminated water
Incubation Period1-10 days
SymptomsSevere diarrhea that is often bloody, severe abdominal pain, and vomiting. Usually, little or no fever is present.
Symptoms of HUS include decreased urine production, dark or tea-colored urine, and facial pallor.
What Do I Do?Drink plenty of fluids and get rest. If you cannot drink enough fluids to prevent dehydration or if your symptoms are severe (including blood in your stools or severe abdominal pain), call your doctor. Antibiotics should not be used to treat this infection.
How Can I Prevent It? Avoid eating high-risk foods, especially undercooked ground beef, unpasteurized milk or juice, soft cheeses made from unpasteurized milk, or alfalfa sprouts.
Use a food thermometer to make sure that ground beef has reached a safe internal temperature of 160° F.
Wash hands before preparing food, after diapering infants, and after contact with cows, sheep, or goats, their food or treats, or their living environment .

Botulism

- Botulism is a rare but serious illness caused by a bacterium which occurs in soil. It produces a toxin that affects your nerves. Food born botulism comes from eating foods contaminated with the toxin.
- **Sources Infants:** Honey, home-canned vegetables and fruits, corn syrup
- **Children and adults:** Home-canned foods with a low acid content, improperly canned commercial foods, home-canned or fermented fish, herb-infused oils, baked potatoes in aluminum foil, cheese sauce, bottled garlic, foods held warm for extended periods of time
- **Incubation Period Infants:** 3-30 days
- **Children and adults:** 12-72 hours
- **Symptoms Infants:** Lethargy, weakness, poor feeding, constipation, poor head control, poor gag and sucking reflex
- **Children and adults:** Double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth and muscle weakness
- **Duration of Illness** Variable
- **What Do I Do?**Botulism is a medical emergency. If you have symptoms of botulism, contact your doctor immediately.
- **How Do I Prevent It?**
- Be very careful when canning foods at home
- Do not let babies eat honey
- Get prompt medical care for infected wounds

Trichinosis

Trichinosis, also called **trichinellosis**, or **trichiniasis**, is a parasitic disease caused by eating raw or undercooked pork or wild game infected with the larvae of a species of roundworm *Trichinella spiralis*, commonly called the trichina worm. There are eight *Trichinella* species; five are encapsulated and three are not.[1] Only three *Trichinella* species are known to cause trichinosis: *T. spiralis*, *T. nativa*, and *T. britovi*.[1]

Between 2002 and 2007, 11 cases were reported to CDC each year on average in the United States;[2] these were mostly the result of eating undercooked game, bear meat, or home-reared pigs. It is common in developing countries where meat fed to pigs is raw or undercooked, but many cases also come from developed countries in Europe and North America, where raw or undercooked pork and wild game may be consumed as delicacies.[3]

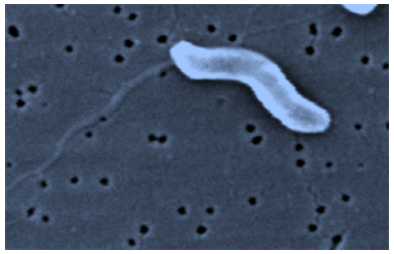
Hepatitis A

Hepatitis A is a liver disease caused by the hepatitis A virus. The disease is spread primarily through food or water contaminated by stool from an infected person.

Hepatitis A is one of the few food born or waterborne illnesses that can be prevented by vaccination. Vaccination is recommended for all children age 12 months and older, for travelers to certain countries, and for people at high risk for infection with the virus.

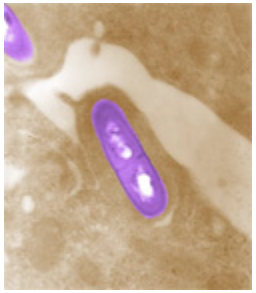
- **Sources:** Raw or undercooked shellfish from contaminated waters, raw produce, contaminated drinking water, uncooked foods and cooked foods that are not reheated after contact with an infected food handler
- **Incubation Period:** 28 days average (ranges from 15 to 50 days)
- **Symptoms:** Diarrhea, dark urine, jaundice, fever, headache, nausea, abdominal pain, and loss of appetite
- **Duration of Illness:** Variable, from 2 weeks to 3 months
- **What Do I Do?** See your doctor if you have signs or symptoms of hepatitis A or think you may have been exposed to the virus. Tests can accurately diagnose whether you've been infected.
- **How Can I Prevent It?** Avoid eating raw oysters or other raw or undercooked shellfish.
  - For adults: Get vaccinated if you are exposed to a person infected with hepatitis A, or if you are planning to travel to a country with high rates of hepatitis A
  - For children: Get vaccinated against hepatitis A.

Campylobacter Jejuni



- **Why it's a Threat**
  - *Campylobacter* is the most common bacterial cause of diarrhea in the United States; over 2 million cases are reported each year. Although Campylobacter doesn't commonly cause death, it is estimated that approximately 100 persons with *Campylobacter* infections die each year.
- **Description**
  - Gram-negative bacteria, S-shaped or spiral rods, approximately 0.5 micron wide and 2 microns long. A polar tail at one or both ends propels the bacteria through liquid.
- **Vehicles**
  - Thrives in birds; spreads through raw and undercooked poultry, raw milk, and untreated water.
- **Prevention**
  - Cook all poultry products thoroughly. Make sure that the meat is cooked throughout (no longer pink) and any juices run clear. All poultry should be cooked to reach a minimum internal temperature of 165 °F.
  - If you are served undercooked poultry in a restaurant, send it back for further cooking.
  - Wash hands with soap before preparing food

Listeria Monocytogenes



Listeria is the name of a bacteria found in soil and water and some animals, including poultry and cattle. It can be present in raw milk and foods made from raw milk. It can also live in food processing plants and contaminate a variety of processed meats.

Listeria is unlike many other germs because it can grow even in the cold temperature of the refrigerator. Listeria is killed by cooking and pasteurization

Sources

- Ready-to-eat deli meats and hot dogs
- Refrigerated pâtés or meat spreads
- Unpasteurized (raw) milk and dairy products
- Soft cheese made with unpasteurized milk, such as queso fresco, Feta, Brie, Camembert
- Refrigerated smoked seafood
- Raw sprouts

Incubation Period--3-70 days

Symptoms--Fever, stiff neck, confusion, weakness, vomiting, sometimes preceded by diarrhea

Duration of Illness--Days to week

Cryptosporidium

- *Cryptosporidium* is a microscopic parasite that causes the diarrheal disease cryptosporidiosis. Both the parasite and the disease are commonly known as "Crypto."

- There are many species of *Cryptosporidium* that infect humans and animals. The parasite is protected by an outer shell that allows it to survive outside the body for long periods of time and makes it very tolerant to chlorine disinfection.

- While this parasite can be spread in several different ways, water (drinking water and recreational water, such as public pools and streams) is the most common method of transmission. *Cryptosporidium* is one of the most frequent causes of waterborne disease among humans in the United States.

Norovirus

- Norovirus is a very contagious virus. You can get norovirus from an infected person, contaminated food or water, or by touching contaminated surfaces. The virus causes your stomach or intestines or both to get inflamed (acute gastroenteritis). This leads you to have stomach pain, nausea, and diarrhea and to throw up.
- Anyone can be infected with norovirus and get sick. Also, you can have norovirus illness many times in your life. Norovirus illness can be serious, especially for young children and older adults.
- Norovirus is the most common cause of acute gastroenteritis in the United States. Each year, it causes 19-21 million illnesses and contributes to 56,000-71,000 hospitalizations and 570-800 deaths. Norovirus is also the most common cause of foodborne-disease outbreaks in the United States.

- Foods commonly involved in outbreaks— leafy greens (such as lettuce), fresh fruits, and shellfish (such as oysters)

Food Allergies/Intolerance

Peanuts, Tree Nuts, Fish, Shellfish, Milk, Eggs, Soy, & Wheat (Celiac Disease)

- **Food Allergy:**
  - Usually comes on suddenly
  - Small amount of food can trigger
  - Happens every time you eat the food
  - Can be life-threatening
- **Food Intolerance:**
  - Usually comes on gradually
  - May only happen when you eat a lot of the food
  - May only happen if you eat the food often
  - Is not life-threatening

Planning a meal!

4 oz = 1 serving of Protein (deck of cards or palm)

1 serving Dairy (yogurt, milk & cheese)

1 serving of Grains (breads, rice, pastas, etc…)

1-2 servings of Fruits and Vegetable (1/2 cup serving size)

My Daily Food Plan

Based on the information you provided, this is your daily recommended amount for each food group.

GRAINS
6 ounces

Make half your grains whole

Aim for at least
3 ounces
of whole grains a day

VEGETABLES
2 1/2 cups

Vary your veggies

Aim for these amounts **each week:**

Dark green veggies
= 1 1/2 cups

Red & orange veggies
= 5 1/2 cups

Beans & peas
= 1 1/2 cups

Starchy veggies
= 5 cups

Other veggies
= 4 cups

FRUITS
2 cups

Focus on fruits

Eat a variety of fruit

Choose whole or cut-up fruits more often than fruit juice

DAIRY
3 cups

Get your calcium-rich foods

Drink fat-free or low-fat (1%) milk, for the same amount of calcium and other nutrients as whole milk, but less fat and Calories

Select fat-free or low-fat yogurt and cheese, or try calcium-fortified soy products

PROTEIN FOODS
5 1/2 ounces

Go lean with protein

Twice a week, make seafood the protein on your plate

Vary your protein routine—choose beans, peas, nuts, and seeds more often

Keep meat and poultry portions small and lean

Find your balance between food and physical activity

Be physically active for at least **150 minutes** each week.

Know your limits on fats, sugars, and sodium

Your allowance for oils is **6 teaspoons** a day.
Limit Calories from solid fats and added sugars to **260 Calories** a day.
Reduce sodium intake to less than **2300 mg** a day.

Your results are based on a 2000 Calorie pattern.

Name: _____

This Calorie level is only an estimate of your needs. Monitor your body weight to see if you need to adjust your Calorie intake.

Average Daily Menu

- Breakfast—egg, toast, cup of yogurt, pieces of fruit, OJ or V8
- Lunch—Ham and cheese sandwich, chips, fruit leather and water
- Snack—cheese stick and apple
- Dinner—Vegetable beef soup, crackers or garlic bread, and water

Food Labels


Nutrition Facts
Serving Size 1 cup (228g)
Servings Per Container about 2
Amount Per Serving
Calories 250
Calories from Fat 110
% Daily Value*
Total Fat 12g 18%
Saturated Fat 3g 15%
Trans Fat 3g
Cholesterol 30mg 10%
Sodium 470mg 20%
Total Carbohydrate 31g 10%
Dietary Fiber 0g 0%
Sugars 5g
Proteins 5g
Vitamin A 4%
Vitamin C 2%
Calcium 20%
Iron 4%
* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:
Calories: 2,000 2,500
Total Fat Less than 65g 80g
Saturated Fat Less than 20g 25g
Cholesterol Less than 300mg 300mg
Sodium Less than 2,400mg 2,400mg
Total Carbohydrate 300g 375g
Dietary Fiber 25g 30g
For educational purposes only. This label does not meet the labeling requirements described in 21 CFR 101.9.
1 Serving Size
2 Amount of Calories
3 Limit these Nutrients
4 Get Enough of these Nutrients
5 Percent (%) Daily Value
6 Footnote with Daily Values (DVs)

Common Cooking Methods

- Baking—in oven or Dutch ovens
- Boiling/simmering
- Steaming
- Deep Frying
- Pan Frying/Sautéing
- Microwaving
- Grilling—gas or charcoal

Career Opportunities

- Chef/Pastry Chef/Sous Chef
- Cafeteria Manager
- Nutritionist
- Cruise Ship Dining Service
- Hotel service
- Sommelier
- Personal Chef
- Caterer
- Critic/writer
- Food Scientist