

***Bad Bugs Whatcha Gonna Do:***  
Preparing for Emerging  
Infectious Diseases

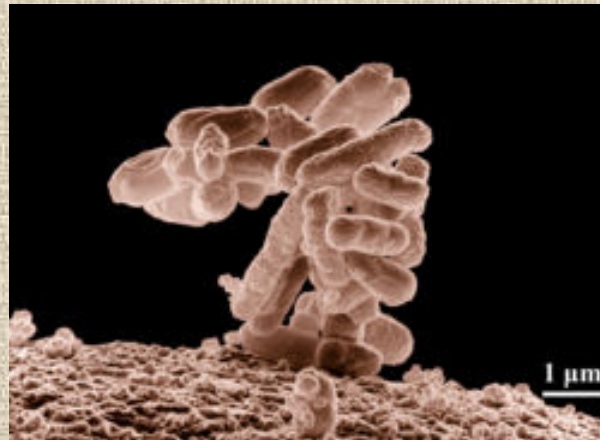
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# FOODBORNE ILLNESS

(WHAT YOU CAN'T SEE CAN HARM YOU)



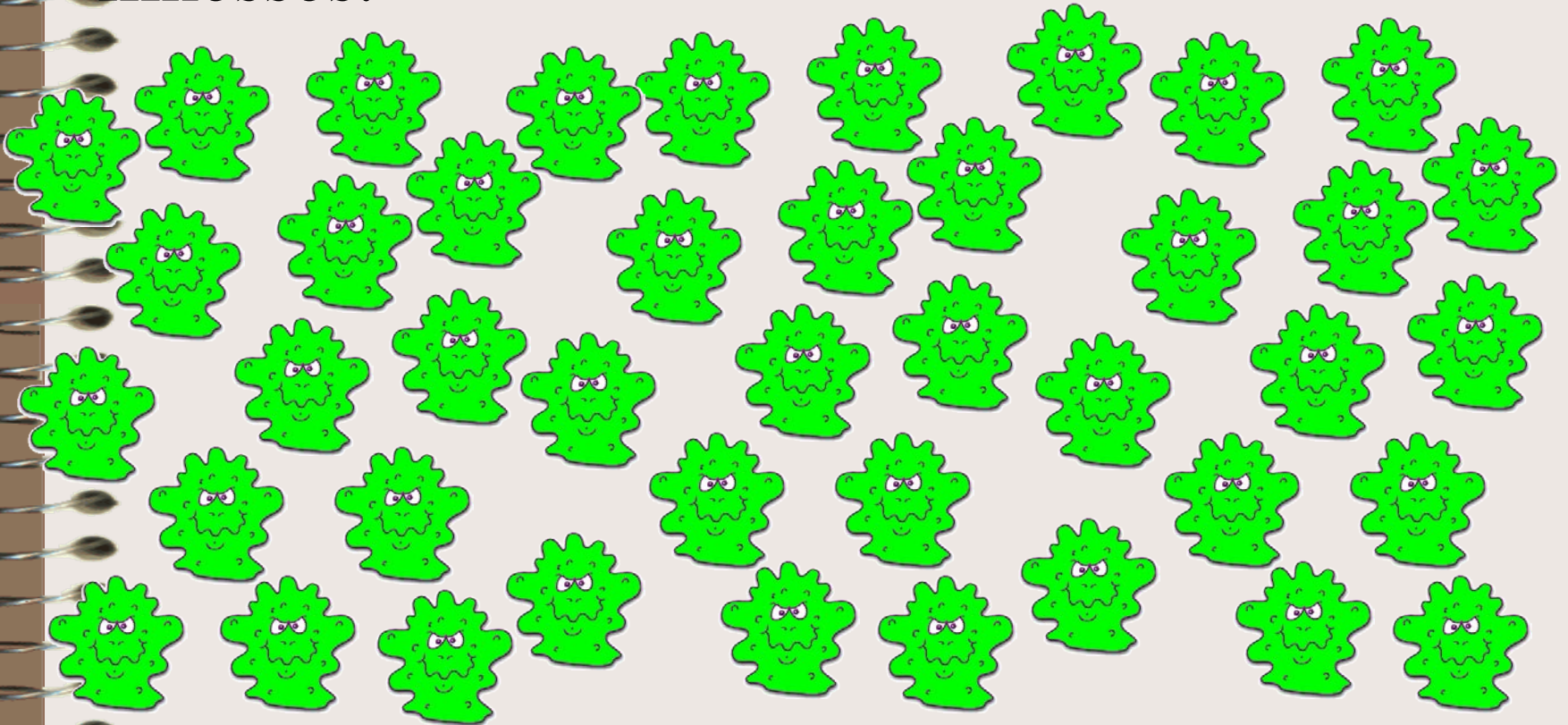
# Did you know? According to the Center for Disease Control:

- ✘ **76 million** become ill due to food / year
- ✘ **325,000** hospitalized  
**5000** die / year
- ✘ **> 250** known  
foodborne diseases



# How Many Are There?

- There are more than **250** known foodborne illnesses.



***Stomach Pain***

***Diarrhea***

***Vomiting***

***Not the flu!?***



**These are symptoms of a  
FOODBORNE ILLNESS**

# Food Poisoning and Foodborne Illness

Can be caused by eating food contaminated with:

- ***BACTERIA***
- ***VIRUS***
- ***TOXINS***
- ***CHEMICALS***

# **BACTERIA**

The Most Common  
Foodborne  
Bacterial Illnesses are  
Caused by:

- ✘ E-coli 0157:H7**
- ✘ Campylobacter**
- ✘ Salmonella**

# E-coli 0157:h7



- ✓ Lives in cattle & other similar animals.
- ✓ Found in raw meat, non-pasteurized milk, apple cider, sprouts.



# E-coli O157:h7

- ✘ Causes severe bloody diarrhea & cramps.**
- ✘ Causes hemolytic uremic syndrome (HUS).**
  - ✘ Kidneys fail**
  - ✘ Red blood cells are destroyed**
- ✘ Onset of illness 2-5 days.**
- ✘ Lasts 5-10 days.**

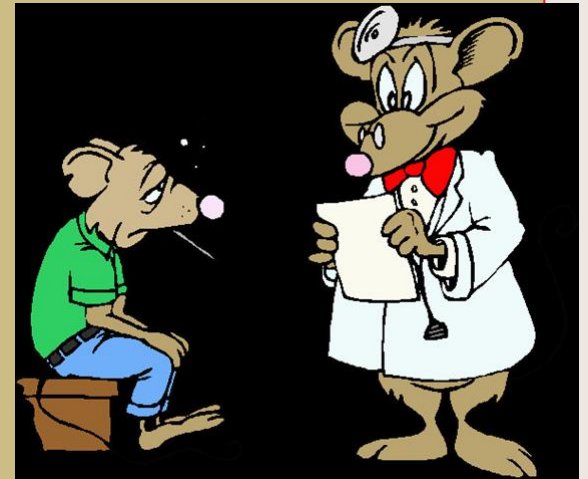
# Campylobacter

**Found in the intestinal tract of birds, sheep, cattle and on the surface of raw poultry.**



# Campylobacter

- ✘ **Causes abdominal cramps, diarrhea and fever**
- ✘ **Onset is 2-5 days**
- ✘ **Lasts 7-10 days**



# Salmonella

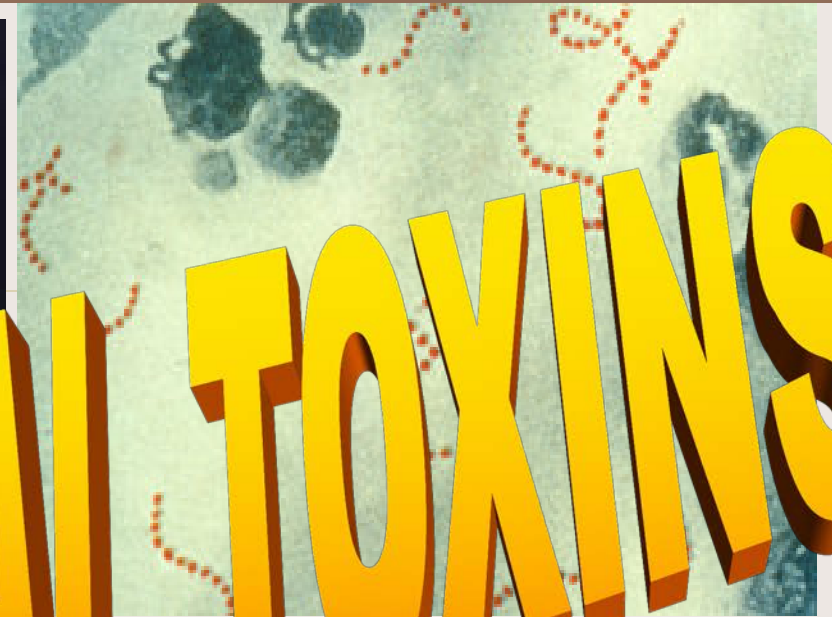
Found in the **intestines** of birds, reptiles, & mammals.



# Salmonella

- ✘ Causes fever, diarrhea & abdominal cramps.**
- ✘ Can cause severe dehydration in infants and elderly.**
- ✘ Onset is 6 hours - 2 days**
- ✘ Lasts 1- 3 days.**

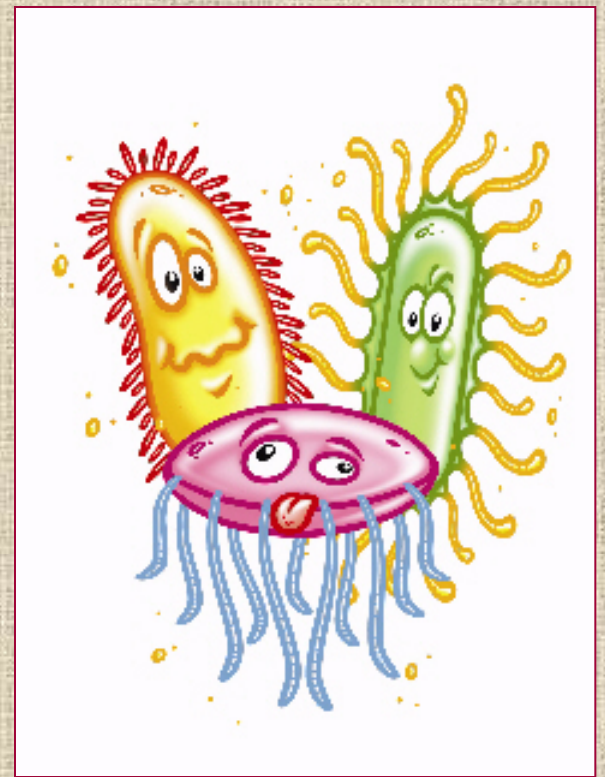
# BIOLOGICAL TOXINS



# Biological Toxins

Biological Toxins are produced by some pathogens found in food contamination.

They could also come from a plant or animal.



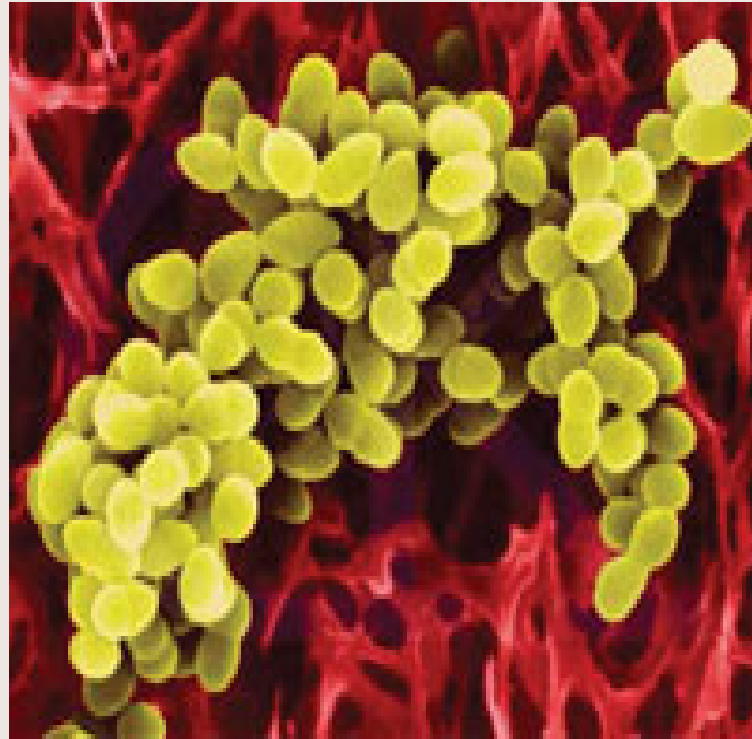
# Bacterial Toxins

**Some bacteria produce  
poisons or toxins that cause:**

**FOODBORNE ILLNESS**  
(sometimes intentional)



# Staphylococcus aureus




Commonly associated with  
food service.

# Staphylococcus Aureus

- If **toxin** - onset of illness is as quickly as **30 minutes**
- If **infectious** - onset can take **6 hours** or longer to appear.

# **Staphylococcus Aureus**

**produces a toxin that causes**



**serious vomiting and  
stomach cramps.**

# Clostridium Botulinum

- ✘ Toxin producing bacteria**
- ✘ Causes botulism**
- ✘ Symptoms are nerve related and can cause muscle paralysis**
- ✘ Symptoms typically occur**
  - ✘ 8 to 36 hours after**
  - ✘ or as late as 10 days**
- ✘ Lasts several days to 1 year**

# NOROVIRUS



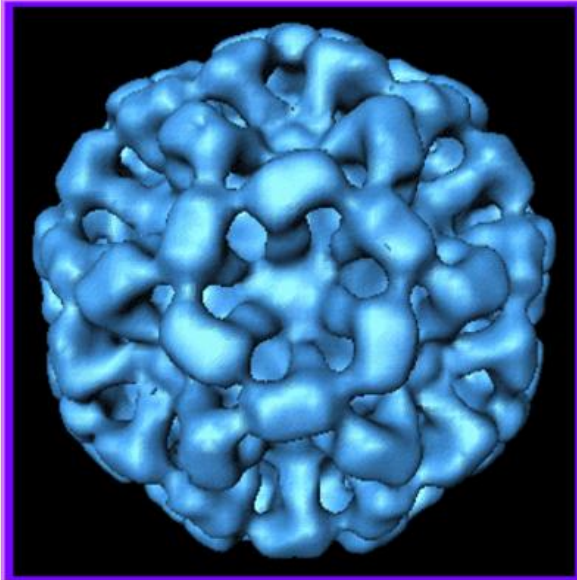
# Norovirus

- ✘ The cause of HALF of all foodborne illness.
- ✘ Spread by
  - ✘ hand contact with food
  - ✘ food placed on a surface that is contaminated by the virus
  - ✘ or when virus is airborne.

**Cold foods such as sandwiches & salads are often associated with Norovirus.**



# Norovirus



- ✘ Starts suddenly.
- ✘ Causes diarrhea, vomiting, abdominal cramps, headache, low-grade fever, chills & muscle aches.
- ✘ Often called the flu.
- ✘ Symptoms begin **12 to 48 hours** after ingestion of the virus.
- ✘ Recovery in **2-3 days** but may remain ill for up to **2 weeks**.

# Another Foodborne Illness Virus

# Hepatitis A

- ✘ Possible sources include by shellfish, salads, deli meats fruits, milk and milk products**
- ✘ Symptoms include sudden onset of fever, general discomfort, fatigue, headache, nausea, loss of appetite, vomiting, abdominal pain & jaundice after several days.**
- ✘ Lasts 1 to 2 weeks (severe cases up to several months).**



# CHEMICAL POISONING



# CHEMICAL POISONING



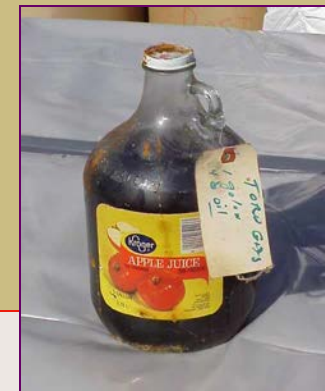
- ✘ Careless or improper storage of chemicals
- ✘ Improper use of chemicals
- ✘ Improper labeling
- ✘ Sometimes intentional addition of poison

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# CHEMICAL POISONING

**✘ Always store cleaners and chemicals below your food or food surfaces.**



**✘ Choose pesticides that are approved for use in the kitchen.**

# Protecting Yourself !



# What Can I Do?

- Follow these simple guidelines:
  - CLEAN
  - COOK
  - CHILL
  - LEFTOVERS



# WASH YOUR HANDS



# WASH YOUR HANDS *OFTEN*

Especially:

- ✘ **When preparing food.**
- ✘ **After using the bathroom.**
- ✘ **Avoid direct contact with public restroom doorknobs. (use paper towel to open door)**



# WHEN WASHING YOUR HANDS

- ✘ Use warm, soapy running water.
- ✘ Rub your hands thoroughly, scrubbing between fingers, and nails for:



10-15 SECONDS.



# Safe Preparation of Fruits & Vegetables



***Clean any items that  
come into contact with fresh foods:***

- ✘** knives
- ✘** cutting boards
- ✘** hands

# Fruits & Vegetables

## Do's & Don'ts

- ✘ Do wash your hands with soap and water before preparing food.
- ✘ Do **rinse** fresh fruits & vegetables **with cold water**.
- ✘ Do **refrigerate** at a temperature of 40° F or less.
- ✘ Do **throw away** items that have come into contact with **raw meat or chemicals**.

- ✘ Do not prepare food for others if you yourself have **diarrhea**.
- ✘ Do not use **bleach or soap** on fruits & vegetables.
- ✘ Do NOT eat fresh cut items left **un-refrigerated** for > 2 hours.
- ✘ Do not eat **bruised or damaged** fruits & vegetables.

# Safe Preparation of Raw Meats

*A few simple precautions can reduce  
the risk of foodborne diseases:*

- ☉ **COOK**
- ☉ **SEPARATE**
- ☉ **CHILL**
- ☉ **REPORT**

# It's Getting Hot in here....

## COOK:

- ✘ **Meat, poultry, and eggs thoroughly.**
- ✘ **Use a thermometer to measure the internal temperature of meat to be sure that it is cooked sufficiently to kill bacteria.**

*For example:*

*Ground beef should be cooked to an internal temperature of 160° F.*

*Eggs should be cooked until the yolk is firm.*



# SEPARATE:

**Don't cross-contaminate one food with another.**



**Avoid cross-contaminating foods by washing hands, utensils, and cutting boards after they have been in contact with raw meat or poultry.**

**Put cooked meat on a clean platter rather than back on one that held the raw meat.**

# CHILL OUT.....

**Refrigerate leftovers promptly:**

**Bacteria grows quickly at room temperature, so refrigerate leftover foods within 2 hours.**



**Food will cool more quickly if divided into several shallow containers for refrigeration.**

If in doubt as  
to the safety  
of your food,



**THROW IT OUT!!**

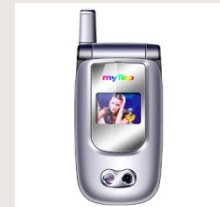


I'm Telling....

REPORT:



**Foodborne illnesses to your  
LOCAL HEALTH DEPARTMENT.**



**Your local health department  
works hard to track down the  
causes of the foodborne illness.**



# Prevent Food Poisoning

## *The Bottom Line*

- **Keep Hot Food Hot**
- **Cold Food Cold**
- **Keep Everything Clean**
- Especially: *Wash Your Hands*
- **Don't go to work sick.**

**What you can't see can harm you**

# Assemble a Team Everyone Has a Role in the Safety of Food



# National Coalition for Food Safe Schools Action Guide and Tool Kit



[www.foodsafeschools.org](http://www.foodsafeschools.org)

[www.neha.org](http://www.neha.org)

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# Credits

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