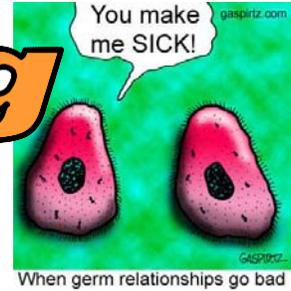




# Bad Bug Book



The following is a summary of the book from the Food and Drug Administration, the Bad Bug Book. For more details of any “bug” listed here, please refer to <http://vm.cfsan.fda.gov/~mow/intro.html>.



## Bacteria

### Bacillus cereus

#### Symptoms:

Bacillus cereus is known to cause two different types of illnesses.

The first is known as the Diarrheal illness with abdominal cramps and diarrhea within 6 to 15 hrs of eating contaminated food and may last for 24 hrs.

The second is called Emetic with nausea and vomiting within 3-6 hrs of eating contaminated food. This illness also lasts about 24 hrs.



#### Foods Associated with B cereus:

Rice and other grain products, dairy products such as milk, cream, custards and dried milk.



#### How to Prevent this Illness:

Keep hot food hot (>140°F) and cold foods cold (<40°F)

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# Campylobacter

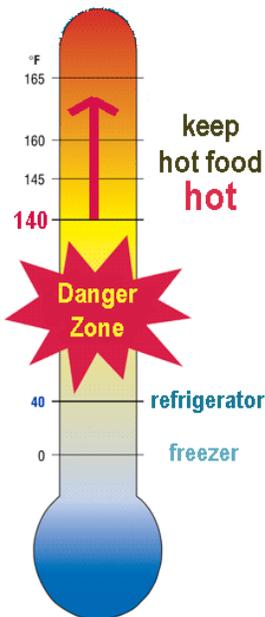
## Symptoms:

Diarrhea, often with a fever, abdominal pain, nausea, headache and muscle pain. Illness can appear very similar to Salmonellosis.

## Onset:

Illness can begin between 2-5 days after eating contaminated food.

**Duration:** Illness may last 7-10 days.



## Foods Associated with Campylobacter:

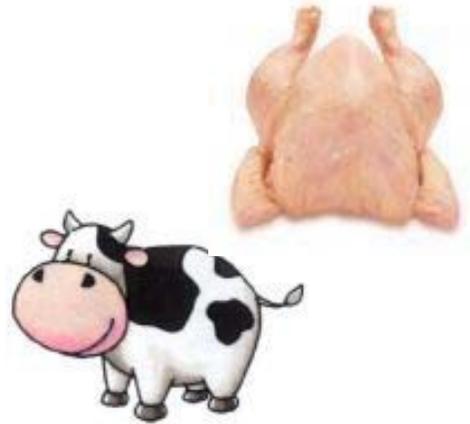
Raw Chicken and raw milk.

## How to Prevent the Illness:

Avoid cross-contamination of ready-to-eat foods with raw meats or their juices.

Cook meat and poultry thoroughly

Never drink unpasteurized milk.



# Clostridium botulinum

## Symptoms:

Symptoms include double vision, vertigo, inability to swallow, speech difficulty and progressive respiratory paralysis.

## Onset:

Symptoms may begin within 18 hrs to 2 days.

**Duration:** More than 65% of cases are fatal. In non-fatal botulism poisoning, recovery may take weeks to years, depending on the severity of the poisoning.



# Clostridium botulinum con't



## Foods Associated with Clostridium botulinum:

Improperly processed or damaged canned foods. Infant botulism may occur when infants eat honey containing C. botulinum spores.

## Illness Prevention:

Follow proper techniques when home canning.  
Do not eat from swollen, leaking or severely damaged cans.  
Keep foods which are supposed to be refrigerated below 40°F.  
Do not feed honey to infants under 1 year old.

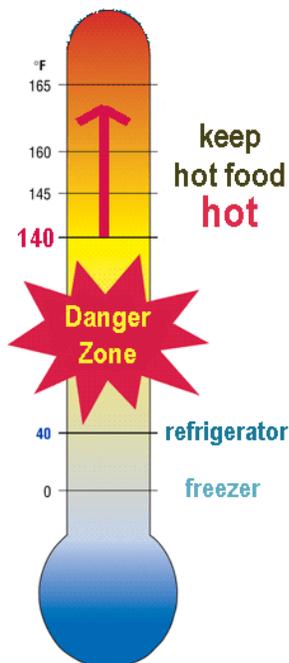
# Clostridium perfringens

## Symptoms:

Abdominal cramping and diarrhea

**Onset:** Illness may begin between 8 to 22 hrs after eating contaminated food.

**Duration:** Illness may last 1-2 days.



## Foods Associated with Clostridium perfringens:

Meat and/or gravy dishes are the most often affected. Generally, C. perfringens poisoning happens when such meat dishes are not cooked enough and are then allowed to sit out for too long.

## Illness Prevention:

Keep hot foods hot (>140°F) or refrigerate them rapidly in shallow containers (<40°F).



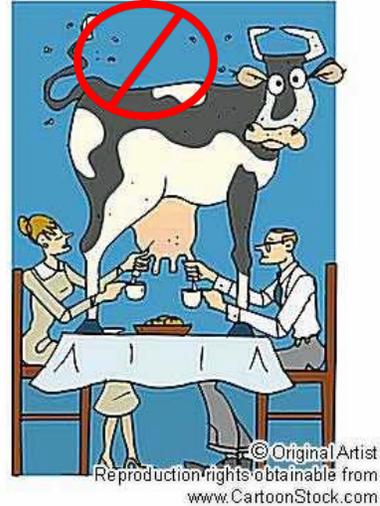
# E. coli O157:H7

## Symptoms:

Severe cramping and diarrhea that can become bloody. Young children are especially susceptible and sometimes lead to other complications.

## Onset:

Illness may occur anywhere between 1 to 10 days after eating contaminated food, but usually occurs between 3 to 4 days.



## Foods Associated with E. coli O157:H7:

Undercooked raw ground beef, unpasteurized apple cider, raw milk and raw produce.

## Illness Prevention:

Cook ground beef to an internal temperature of 160°F

Wash fresh fruits and vegetables thoroughly with running water.

Do not drink unpasteurized milk or apple cider.



# Listeria monocytogenes

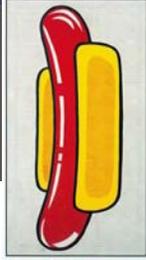
## Symptoms:

In healthy individuals this bacteria may result in diarrhea, vomiting and nausea. In persons with a weakened immune system (the very young, elderly, pregnant women, those with AIDS or undergoing cancer treatment) Listeriosis may appear like a mild flu, but may develop into much more serious conditions.

**Onset:** Illness may occur anywhere from 12 hrs to a few weeks after eating contaminated food.

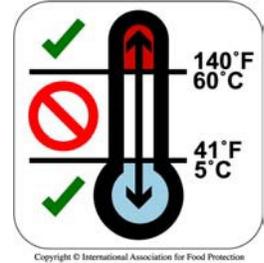
**Duration:** In otherwise healthy individuals, mild symptoms may disappear in a day or two, but those with weakened immune systems may need medical attention.

# Listeria monocytogenes con't



## Foods Associated with Listeria Monocytogenes:

Raw milk, raw meats and vegetables. Ice cream, soft-ripened cheese, smoked fish, lunch meats, hot dogs. This bacteria can even grow, slowly, at refrigerated temperatures.



## Illness Prevention:

Wash fresh fruits and vegetables well with running water.

Keep food in the refrigerator.

Keep raw meats and raw veggies separate. Pregnant women, elder and imuno-compromised (weakened immune systems) persons should avoid lunch meats and hotdogs.

# Norwalk Virus (Noro virus)

## Symptoms:

Nausea, vomiting, abdominal cramping

## Onset:

Illness may occur between 1 to 2 days.

**Duration:** Illness can last between 1 and 3 days.



## Foods Associated with Norwalk Virus:

Raw shellfish, raw vegetables, salads, prepared salads, water contaminated with human waste. It is commonly passed from unclean food handling or person to person.

## Illness Prevention:

Only eat shellfish from safe places (restaurant or store vs. off the street).

Wash fresh fruits and vegetables well with running water.

Wash hands well after using the bathroom.

# Salmonella

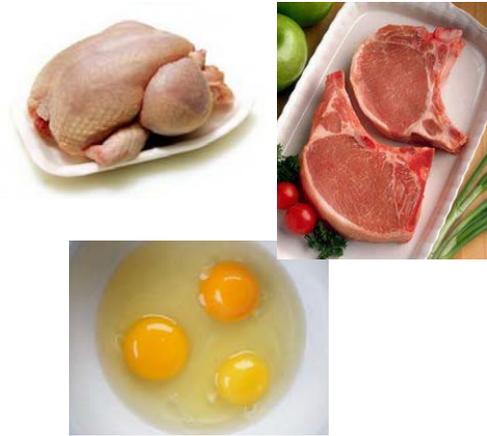
## Symptoms:

Fever, cramps, diarrhea, and sometimes vomiting

## Onset:

Illness may begin between 7 hrs to 3 days after eating contaminated food.

**Duration:** Illness may last 2-3 days.



**Foods Associated with Salmonella:** Raw poultry products, eggs, pork, processed meats. Occasionally, Salmonella has been found in raw fruits and vegetables.

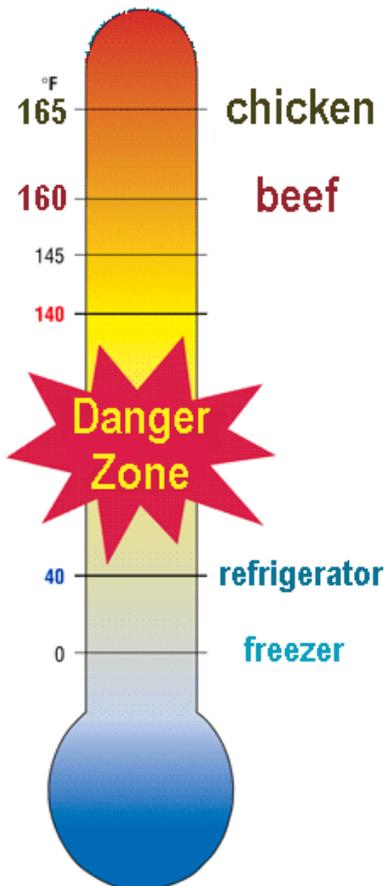
## Illness Prevention:

Avoid cross-contamination of ready-to-eat foods with raw meats or their juices.

Thoroughly cook meat and poultry. Cook eggs well and never eat raw eggs. Always refrigerate processed meat products.

Wash fruits and vegetables well with running water.

Elderly and persons with weakened immune systems need to cook eggs well or use pasteurized eggs.



# Shigella

## Symptoms:

Severe watery diarrhea, fever and cramping

## Onset:

Illness may begin between 12 hrs and 2 days

**Duration:** Illness may last 4-7 days.



## Foods Associated with Shigella:

Salads, raw produce, milk and dairy products. Often caused from contaminated water and unsanitary handling of food.



## Illness Prevention:

Wash fruits and vegetables well with running water.

Wash hands well when preparing food.

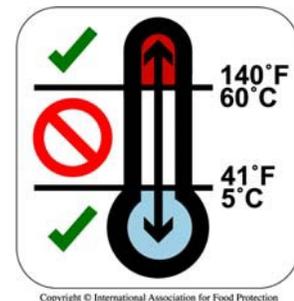
# Staphylococcus aureus

## Symptoms:

Vomiting, diarrhea, and abdominal cramps.

**Onset:** Illness may begin within 3-8 hrs.

**Duration:** Illness usually lasts about 2 days.



## Foods Associated with Staphylococcus:

Staphylococcus is associated with a wide range of foods and is commonly spread through the improper or unclean handling of food.



## Illness Prevention:

Wash hands well before preparing food.

Keep foods refrigerated.

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505-314-0310. [www.bernco.gov](http://www.bernco.gov)

