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<td><strong>Botulism</strong></td>
<td>Symptoms begin 18-36 hours after eating contaminated food and include • diarrhea or constipation; • weakness; • dizziness; • double vision or blurred vision; • difficulty speaking, swallowing, breathing; and • paralysis.</td>
<td>• Home-canned foods • Improperly processed foods • Sausages and meats • Canned low-acid foods such as some vegetables • Untreated garlic in oil • Leftover, unrefrigerated foil-wrapped baked potatoes • Sautéed onions in butter sauce</td>
<td>• Discard damaged cans. • Do not use home-canned foods in a foodservice establishment. • Do not mix and then store oil and garlic. • Follow rules for time and temperature control. • Sauté onions as needed; do not sauté and then store unrefrigerated for later use. • Do not store leftover baked potatoes in foil wrapping. Unwrap and chill correctly. • Chill food properly.</td>
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<td><strong>Campylobacteriosis</strong></td>
<td>Symptoms begin 2-5 days after eating contaminated food, can last 7-10 days, and include • diarrhea (watery of bloody), • fever, • nausea and vomiting, • abdominal pain, • headache, and • muscle pain.</td>
<td>• Unpasteurized milk and dairy products • Raw poultry • Raw beef • Nonchlorinated or fecal-contaminated water • Birds and flies can carry and contaminate food with a thermometer.</td>
<td>• Practice good personal hygiene. • Follow hand washing guidelines. • Follow procedures to avoid cross-contamination. • Cook all poultry, meat, and other foods to appropriate internal temperature and test with a thermometer. • Maintain good pest control. • Use only pasteurized dairy products. • Use water from approved sources.</td>
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<tr>
<td><strong>Escherichia coli</strong></td>
<td>Symptoms begin 3-8 days after eating contaminated food, can last 2-9 days, and include • cramping, • diarrhea (watery or bloody), • vomiting, and • hemolytic uremic syndrome (hus).</td>
<td>• In intestinal tract of animals, particularly cattle and humans • Raw or undercooked ground beef • Raw milk or dairy products • Unpasteurized apple cider or juice • Imported cheeses • Dry salami • Uncooked fruits and vegetables</td>
<td>• Practice good personal hygiene. • Follow hand washing guidelines. • Follow procedures to avoid cross-contamination. • Cook all poultry and meat to correct internal temperature, and test with a thermometer. • Use only pasteurized milk, dairy products, or juices.</td>
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**Microorganisms**

- *Clostridium botulinum*
- *Campylobacter jejuni*
- *Escherichia coli O157:H7*
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<td><strong>Listeriosis</strong>&lt;br&gt; <em>Listeria monocytogenes</em></td>
<td>Symptoms begin 3-70 days after eating contaminated food; 21-day onset is most common. Symptoms include&lt;br&gt;- sudden onset of fever,&lt;br&gt;- muscle aches,&lt;br&gt;- diarrhea or vomiting,&lt;br&gt;- headaches,&lt;br&gt;- stiff neck,&lt;br&gt;- confusion,&lt;br&gt;- loss of balance, and&lt;br&gt;- convulsions.</td>
<td>- In soil, ground water, plants, and intestinal tracts of humans and animals&lt;br&gt;- Unpasteurized milk and cheese&lt;br&gt;- Ice cream&lt;br&gt;- Raw vegetables&lt;br&gt;- Raw and cooked poultry&lt;br&gt;- Raw meat and fish&lt;br&gt;- Prepared and chilled ready-to-eat foods&lt;br&gt;- Deli meats, luncheon meats, hot dogs&lt;br&gt;- Soft cheese such as feta, Brie, Mexican-style cheeses</td>
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<td><strong>Clostridium perfringens</strong></td>
<td>Symptoms begin 8-24 hours after eating contaminated food, last 24 hours, and include&lt;br&gt;- abdominal cramping and&lt;br&gt;- diarrhea.</td>
<td>- In intestinal tracts of humans and animals&lt;br&gt;- Cooked meat and poultry&lt;br&gt;- Gravy&lt;br&gt;- beans</td>
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<td><strong>Salmonellosis</strong>&lt;br&gt; <em>Salmonella spp.</em></td>
<td>Symptoms begin 6-48 hours after eating contaminated food, last 1-2 days, and include&lt;br&gt;- stomach cramps,&lt;br&gt;- headache,&lt;br&gt;- nausea,&lt;br&gt;- fever,&lt;br&gt;- diarrhea,&lt;br&gt;- vomiting, and&lt;br&gt;- severe dehydration (infants and elderly).</td>
<td>- Raw meats and poultry&lt;br&gt;- Milk and dairy products&lt;br&gt;- Fish, shrimp&lt;br&gt;- Sauces and salad dressing&lt;br&gt;- Cake mixes&lt;br&gt;- Cream-filled desserts and toppings&lt;br&gt;- Peanut butter&lt;br&gt;- Cocoa and chocolate&lt;br&gt;- Sliced fresh fruits and vegetables such as melons, strawberries, tomatoes&lt;br&gt;- Raw sprouts</td>
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<tr>
<td>Illness/VIRUS</td>
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| **Shigellosis**              | Symptoms begin 12-50 hours after eating contaminated food, last up to 2 weeks, and include  
| Shigella spp.                 | • abdominal pain,  
|                              | • diarrhea containing blood and mucus,  
|                              | • fever,  
|                              | • nausea,  
|                              | • vomiting,  
|                              | • chills,  
|                              | • fatigue, and  
|                              | • dehydration.  
|                              | • In intestinal tract of humans and polluted water; spread by flies and food handlers  
|                              | • Meat salads  
|                              | • Potato and pasta salads  
|                              | • Lettuce and other raw vegetables  
|                              | • Milk and dairy products  
|                              | • Ready-to-eat foods  
|                              | • Practice good personal hygiene.  
|                              | • Follow hand washing guidelines.  
|                              | • Follow procedures to avoid cross-contamination.  
|                              | • Use water from approved sources.  
|                              | • Control flies.  
|                              | • Maintain storage temperatures.  
|                              | • Cook food properly.  
| **Staphylococcus aureus**    | Symptoms begin 1-4 hours after eating contaminated food, last 2-3 days, and include  
|                              | • nausea,  
|                              | • vomiting,  
|                              | • stomach cramping, and  
|                              | • exhaustion.  
|                              | • Humans and animals main carriers  
|                              | • Leftovers  
|                              | • Meat and poultry  
|                              | • Eggs and egg products  
|                              | • Milk and dairy products  
|                              | • Meat and potato salads  
|                              | • Salad dressings  
|                              | • Sandwich fillings  
|                              | • Practice good personal hygiene.  
|                              | • Cover burn, cut, or wound with waterproof bandage and wear disposable gloves.  
|                              | • Follow hand washing guidelines.  
|                              | • Follow procedures to avoid cross-contamination.  
|                              | • Cook all foods to correct internal temperature and test with a thermometer.  
|                              | • Hold food at 41°F or below or at 135°F or above.  
|                              | • Cool foods properly.  
| **Gastroenteritis**          | Symptoms begin 1-2 days after eating contaminated food or water, last for 1-3 days, and include  
| from Norovirus                | • nausea,  
|                              | • vomiting,  
|                              | • diarrhea,  
|                              | • abdominal pain,  
|                              | • headache, and  
|                              | • mild fever.  
|                              | • In intestinal tract of humans; transmitted through water or food  
|                              | • Contaminated drinking water  
|                              | • Shellfish from contaminated water  
|                              | • Foods contaminated by dirty hands, including raw vegetables, fresh fruits, and salads  
|                              | • Practice good personal hygiene.  
|                              | • Follow hand washing guidelines.  
|                              | • Follow procedures to avoid cross-contamination.  
|                              | • Wash all fresh produce that will be served whole, peeled, or cooked in cold, running water.  
|                              | • Use water from approved sources.  
|                              | • Cook all foods to correct internal temperature and test with a thermometer.  |
**Hepatitis A**

Symptoms appear 10 days-2 months after consuming contaminated food or water, begin with fever and also include
- fatigue,
- headache,
- nausea,
- loss of appetite,
- vomiting,
- stomach pain, and
- jaundice (yellow skin and eyes) in late stages.

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| Mold         | Toxins from mold can be dangerous to humans
- Toxins have been linked to cancer in animals and to rare, isolated incidents of foodborne illness
- Some molds cause serious infection and allergies
- Aflatoxin (produced by two specific molds) can cause liver disease | Mold can create spoilage in many product such as bread and cheese
- Mold can grow in almost any condition
  - moist or dry,
  - acidic or non-acidic,
  - salty or sweet,
  - cold or warm. | Food with mold on it should be discarded unless it is part of the natural food (such as brie, camembert, gorgonzola, or bleu cheese).
- **Never** just cut away the mold because toxins can permeate the food even though they are not visible to the eye. |
| Yeast        | Evidence of bubbles and an alcoholic smell or taste in food | Yeast loves sugar, and is associated with jellies, honey, syrup, and fruit juices.
- Yeast causes food to spoil (for example, mixing a new can of canned fruit, such as peaches, with an old can of fruit already on a salad bar) | Discard any food where you detect evidence of bubbles and an alcoholic smell or taste. |
Parasites

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<td><strong>Cyclosporiasis</strong>&lt;br&gt; <em>Cyclospora cayetanensis</em></td>
<td>Symptoms usually begin about 1 week after becoming infected, and if untreated, could last from a few days to a month or longer; relapses could occur. Especially for those recently traveling to an area where risk is endemic, symptoms include watery diarrhea with frequent explosive bowel movements as well as&lt;br&gt;• Loss of appetite&lt;br&gt;• Weight loss&lt;br&gt;• Stomach cramps/pain&lt;br&gt;• Bloating&lt;br&gt;• Increased gas&lt;br&gt;• Nausea&lt;br&gt;• Fatigue&lt;br&gt;• Some experience no symptoms</td>
<td>• The tiny parasites can be transmitted by ingestion of food or water contaminated by infected fecal matter containing the parasite.&lt;br&gt;• Recent outbreaks have involved&lt;br&gt;  • raspberries from outside the United States,&lt;br&gt;  • snow peas,&lt;br&gt;  • mixed lettuce products, and&lt;br&gt;  • fresh herbs.</td>
<td>• Practice good personal hygiene.&lt;br&gt;• Follow proper hand washing procedures.&lt;br&gt;• Use water from approved sources.&lt;br&gt;• Purchase food from reputable sources.&lt;br&gt;• Wash all fresh produce&lt;br&gt;• Serve only pasteurized dairy products and juices.&lt;br&gt;• Cook foods to proper internal temperatures and test with a thermometer.&lt;br&gt;• Follow practices that minimize cross-contamination.</td>
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<tr>
<td><strong>Giardiasis</strong>&lt;br&gt; <em>Giardia spp.</em></td>
<td>Symptoms usually begin about 9-15 days after becoming infected, and if untreated could persist for months. Travelers experience protracted diarrhea, intestinal uneasiness followed by nausea, anorexia, possible low grade fever and chills, followed by 3-4 days of&lt;br&gt;• Watery, foul-smelling, explosive diarrhea&lt;br&gt;• Abdominal pain&lt;br&gt;• Flatulence&lt;br&gt;• Belching.&lt;br&gt;• Bloating&lt;br&gt;• Vomiting&lt;br&gt;• Weight loss</td>
<td>• May be in unfiltered or poorly chlorinated and/or contaminated water, or in or on anything that has touched the stool of a person or animal with giardiasis; can be the cause of recreational water outbreaks of gastroenteritis (swimming pools, water parks, hot tubs and spas)&lt;br&gt;• Adults and children in daycare centers are at risk for giardiasis&lt;br&gt;• Food outbreaks have been attributed to infected foods linked to an infected handler</td>
<td>• Practice good personal hygiene.&lt;br&gt;• Follow proper hand washing procedures.&lt;br&gt;• Use water from approved sources&lt;br&gt;• Follow practices that minimize cross-contamination.&lt;br&gt;• Avoid feces of an infected person&lt;br&gt;• Wash children with soap and water after diaper changes.&lt;br&gt;• When traveling in areas where giardiasis is common, use only bottled water and avoid consumption of raw fruits and vegetables.</td>
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| Trichinosis | Gastrointestinal symptoms usually occur 1-2 days after a person consumes infected raw or undercooked meat and include nausea, diarrhea, vomiting and abdominal pain. 2 weeks after eating contaminated meat and up to 8 weeks, symptoms seen include:  
- Muscle pain  
- Fever  
- Swelling of the face, particularly the eyes  
- Weakness or fatigue  
- Chills  
- Itchy skin or rash  
- Cough  
- Diarrhea  
- Constipation  
Severity of symptoms is dependent upon the number of infectious worms consumed in the meat. | The *Trichinella* parasite can be found in raw or undercooked meat, particularly wild game meat (particularly bear meat) or pork.  
- Even tasting very small amounts of undercooked meat during preparation or cooking puts one at risk for infection.  
- The most common (*Trichinella spiralis*) is commonly found in pigs and is associated with raw or undercooked pork or pork sausages, and may occur by contamination with meat grinders. | Cook meat to correct internal temperature and test with a thermometer.  
- Do not sample meat until it is cooked.  
- Practice good personal hygiene.  
- Follow proper hand washing procedures.  
- Clean meat grinders thoroughly after each use.  
- Follow practices that minimize cross-contamination. |