



United States Department of Agriculture

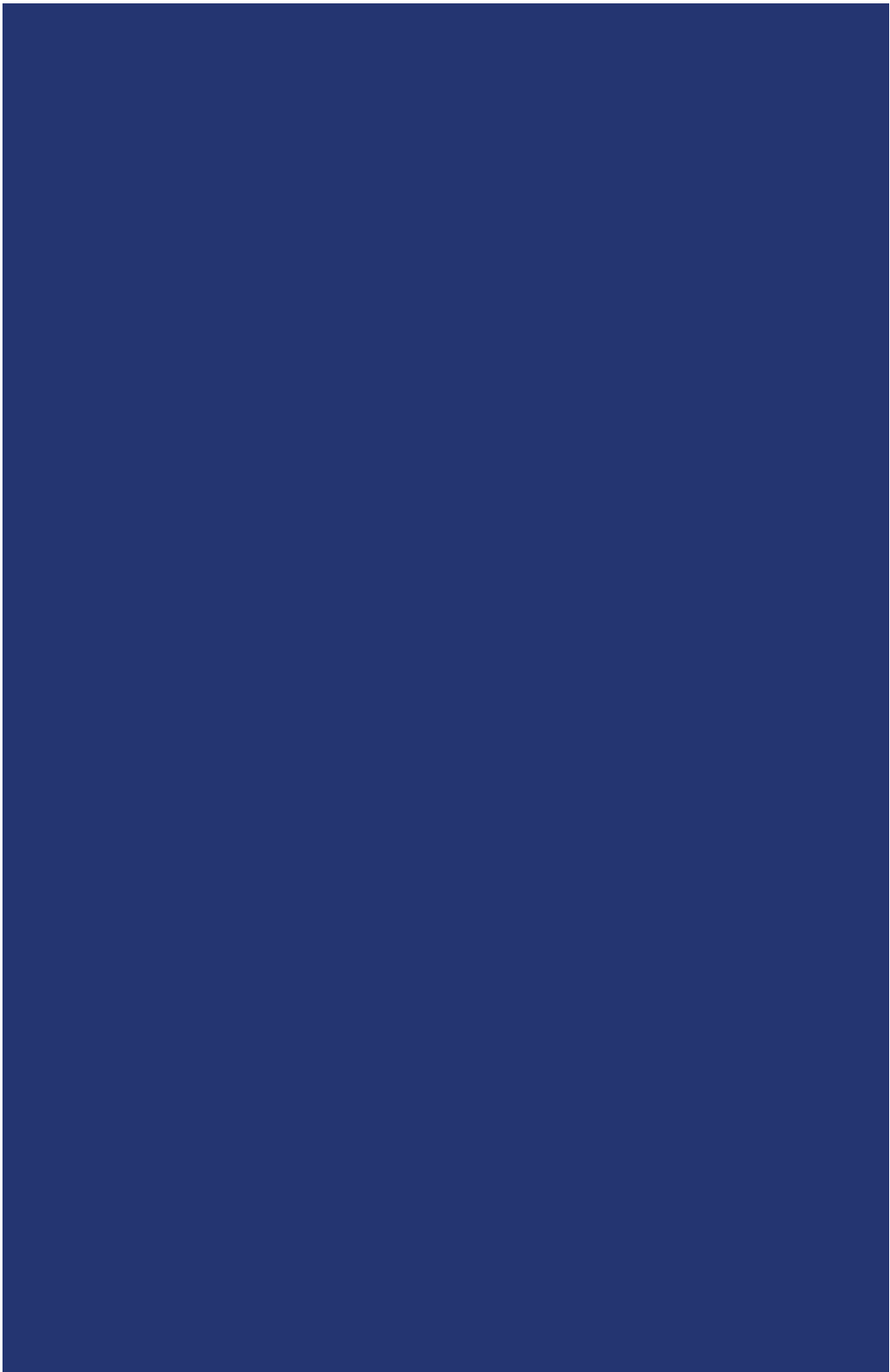
# Food Safety

A Need-to-Know Guide for Those at Risk

If You Check ANY of These Boxes, This Booklet Is Especially for You.

- Older Adults
- Children Under 5 Years
- Pregnant Women
- Transplant Recipients
- Cancer and Diabetes Patients
- People with Autoimmune Diseases and HIV/AIDS

Food Safety and Inspection Service





## **Food Safety A Need-To-Know Guide for Those at Risk**

Food safety is important for everyone—  
but it's especially important for you.

That's why the U.S. Department of Agriculture's  
Food Safety and Inspection Service (FSIS)  
has prepared this booklet.

It is designed to provide practical  
guidance on how to reduce your risk  
of foodborne illness.

In addition to following this practical guidance,  
we encourage you to check with your physician  
or healthcare provider to identify foods you  
should avoid.

We strongly encourage you to review these  
guidelines with your physician.



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## Foodborne Illness in the United States

When certain disease-causing bacteria, viruses, or parasites contaminate food, they can cause foodborne illness. Another word for illness-causing bacteria, viruses, or parasites is “pathogens.” Foodborne illness, often called food poisoning, is an illness that comes from a food you eat.

- The food supply in the United States is among the safest in the world — but it can still be a source of infection.
- According to the Centers for Disease Control and Prevention (CDC), foodborne pathogens cause up to 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths in the United States each year. Many of these people are children, older adults, or individuals with weakened immune systems who may not be able to fight infection normally.

Since foodborne illness can be serious—or even fatal—it is important for you to know and practice safe food-handling behaviors to help reduce your risk of getting sick from contaminated food.

## Who Is at Risk?

Certain groups of people are more susceptible to foodborne illness than others. They are more likely to get sick from contaminated food, and if they do get sick, the effects are often much more serious.

Those at increased risk include:

- **Cancer patients**
- **Children under 5 years of age**
- **Diabetes patients**
- **HIV/AIDS patients**
- **Older adults**
- **People with autoimmune diseases**
- **Pregnant women**
- **Transplant recipients**



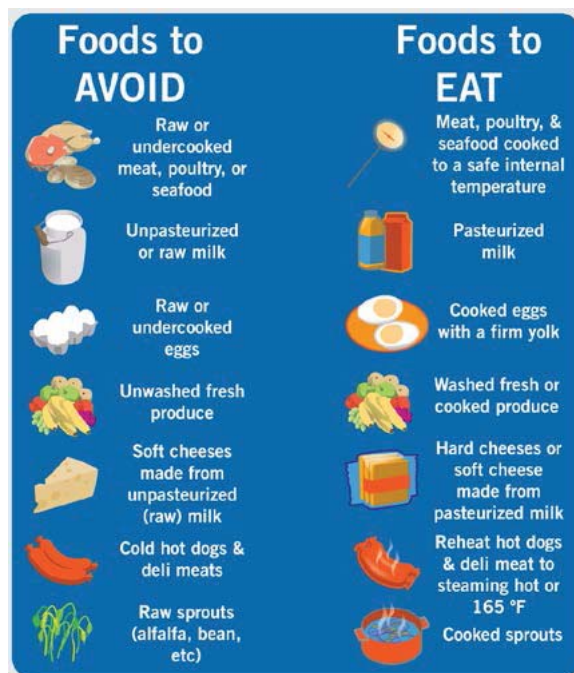
## Food Safety for Cancer Patients

If you are a cancer patient, your healthcare provider may have recommended that you receive chemotherapy, radiation, or other treatments to help fight your disease. A weakened immune system can be a side effect of these types of therapies.

A properly functioning immune system works to clear infection and other foreign agents from the body. However, cancer and its treatments can weaken your immune system, making you more susceptible to many types of infections. These infections include those that can be brought on by disease-causing bacteria and other pathogens that cause foodborne illness.

As a cancer patient, you are more likely to have a lengthier illness, undergo hospitalization, or even death if you contract a foodborne illness.

To avoid contracting a foodborne illness, you must be especially vigilant when handling, cooking, and consuming foods.



*Food safety is important for people with cancer because treatment can weaken the immune system.*



## Food Safety for Children Under 5 Years of Age

**HIGH-RISK FOODS FOR CHILDREN UNDER 5**

- Raw or undercooked**  
Foods including meat, poultry, and eggs
- Unpasteurized milk or juice**
- Raw or undercooked oysters and seafood**

**FOOD SAFETY FOR CHILDREN UNDER 5**

SOLIDS - opened or freshly made	Refrigerator	Freezer
Strained fruits and vegetables	2 to 3 days	6 to 8 months
Strained meats and eggs	1 day	1 to 2 months
Meat/vegetable combinations	1 to 2 days	1 to 2 months
Homemade baby foods	1 to 2 days	1 to 2 months

Children under the age of 5 are at an increased risk for foodborne illness and related health complications because their immune systems are still developing. Young children with developing immune systems cannot fight off infections as well as adults can. Additionally, young children produce less stomach acid that kills harmful bacteria, making it easier for them to get sick. Because of this, children under the age of 5 should only consume pasteurized dairy products and meats cooked to a safe temperature.

Food poisoning can be particularly dangerous for young children because one side effect of food poisoning is diarrhea. Because children's bodies are small, they can quickly lose a lot of fluid, causing dehydration. Other symptoms of foodborne illness may include nausea, vomiting, stomach pain and cramps, and fever and chills.

According to the CDC, children younger than 5 have the highest incidence rates of any age group for *Campylobacter*, *Cryptosporidium*, *E. coli*, *Salmonella*, *Shigella* and *Yersinia* infection.

In addition to hand washing and good hygiene, young children's food safety is tightly linked to the food safety behaviors of their parents and caregivers.



## Food Safety for Diabetes Patients

Complications from diabetes can cause cardiovascular and kidney disease, negatively affecting the immune system. These effects leave you more prone to infectious disease, such as foodborne illness. As a diabetes patient, your immune system may not immediately recognize harmful foodborne pathogens, increasing your risk for infection.



### Glucose Levels

High glucose levels suppress the function of white blood cells that fight off infection, increasing your risk of contracting a foodborne illness. If you have diabetes and contract a foodborne illness, your blood glucose levels may be affected because foodborne illness impacts what and how much you can eat.

### Gastrointestinal (GI) Tract

Diabetes may cause your stomach to produce low amounts of digestive acid. In addition, food may not move through the digestive tract as quickly as in non-diabetic persons. When the stomach holds on to food longer than necessary, bacteria start to multiply. If the amount of harmful bacteria in the stomach gets too high, it can lead to foodborne illness.



### Kidneys

Kidneys usually work to cleanse the body. For many diabetes patients, the kidneys may not function properly, giving harmful bacteria the opportunity to grow out of control.



## Food Safety for HIV/AIDS Patients

With recent advances in treatments, people with Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) are now living longer—and with a better quality of life—than ever before. If you or someone you care for is living with HIV/AIDS, it is important to make safe choices.

### EATING WELL IS KEY TO MAINTAINING STRENGTH, ENERGY, AND A HEALTHY IMMUNE SYSTEM



#### FOOD SAFETY TIPS

- ✓ Avoid eating raw eggs, meats, or seafood
- ✓ Wash fruits and vegetables thoroughly
- ✓ Use separate cutting board for raw meats
- ✓ Wash hands, utensils, and cutting boards with soap & water after each use

### HIV AND MANY OF ITS TREATMENTS CAN CHANGE YOUR BODY'S METABOLISM



#### WATER SAFETY TIPS

- ✓ Do not drink water from lakes, ponds, rivers, or streams
- ✓ Use a water filter at home
- ✓ You can significantly reduce risk of water-borne illness by using boiled water for drinking & cooking

Some conditions related to HIV/AIDS and its treatment (such as wasting, diarrhea and lipid abnormalities) increase your susceptibility to many types of infections. Individuals living with HIV/AIDS may be subject to lengthier illnesses and hospitalization. Safe food handling is crucial to prevent infections brought on by disease-causing bacteria and other pathogens in food and water.

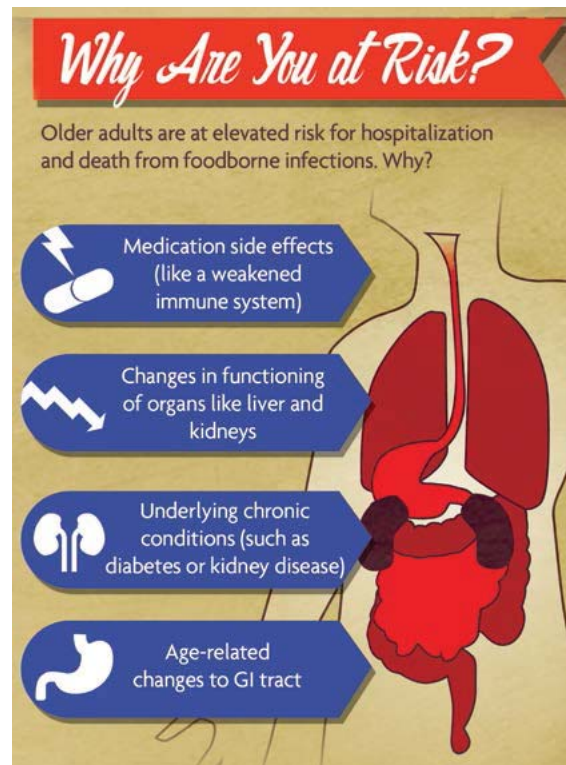
People living with HIV/AIDS are especially susceptible to the following foodborne pathogens: *Listeria monocytogenes*, *Salmonella*, *Campylobacter*, *Cryptosporidium parvum* and *Mycobacterium avium-complex*.

By being especially vigilant when handling, preparing, and consuming foods, you can reduce your risk of contracting these illnesses. In addition to maintaining a healthy lifestyle and medical regimen, handling food properly can help you to reduce your risk of foodborne illness.



## Food Safety for Older Adults

Adults 65 and older are at a higher risk for hospitalization and death from foodborne illness. This increased risk of foodborne illness is because our organs and body systems go through changes as we age. These changes include:



- The gastrointestinal tract holds on to food for a longer period of time, allowing bacteria to grow.
- The liver and kidneys may not properly rid our bodies of foreign bacteria and toxins.
- The stomach may not produce enough acid. The acidity helps to reduce the number of bacteria in our intestinal tract. Without proper amounts of acid, there is an increased risk of bacterial growth.

- Underlying chronic conditions, such as diabetes and kidney disease, may also increase a person's risk of foodborne illness.

*Make safe food handling a lifelong commitment to minimize your risk of foodborne illness. Be aware that as you age, your immunity to infection naturally is weakened.*



## Food Safety for People With Autoimmune Diseases

People with autoimmune diseases are at a higher risk of foodborne illnesses because their immune systems are compromised and may be unable to fight off infection. With an autoimmune disease, the immune system is compromised either by the disease or by medicine taken to manage the disease. No matter the reason, individuals with autoimmune disease are at an increased risk for contracting foodborne illnesses.

### Common Types of Autoimmune Diseases and Risk of Foodborne Illness



#### Multiple Sclerosis (MS)

As treatment for multiple sclerosis involves steroids and other immunosuppressive drugs, patients are at increased risk for foodborne infection.

#### Inflammatory Bowel Disease (IBD)

Treatment for IBD may include immunosuppressants, steroids, and biological therapies—all of which increase susceptibility to foodborne illness. Patients taking two or more drugs are at even higher risk of foodborne illness. Foodborne pathogens associated with immunosuppressant therapy in IBD patients include *Salmonella*, *Listeria monocytogenes*, and *Toxoplasma gondii*.

#### Lupus (SLE)

The use of corticosteroids and other immunosuppressive agents in the treatment of SLE increases the risk of contracting foodborne illness. Patients under immunosuppressive therapy have been shown to more easily contract foodborne illnesses from *Salmonella*, *Listeria monocytogenes*, *Toxoplasma gondii*, and *E. coli*. In SLE patients with severe infections, the most frequently identified pathogen was *E. coli*.

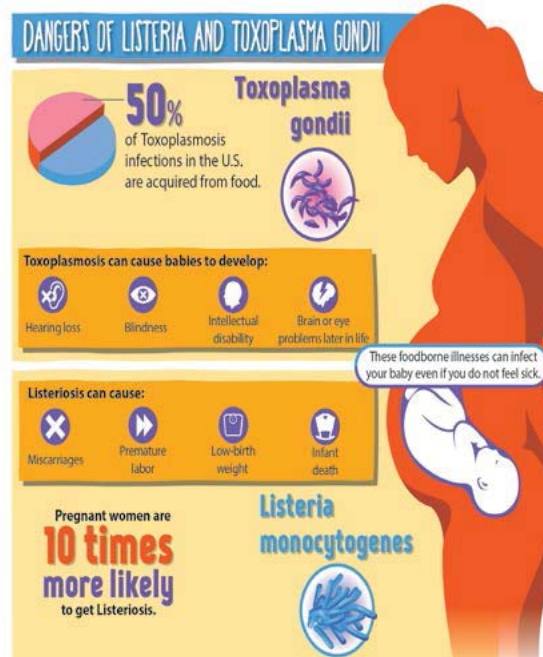


## Food Safety for Pregnant Women

When you become pregnant, your body naturally undergoes hormonal changes, some of which also affect your immune system. These changes make pregnant women more susceptible to contracting a foodborne illness.

You and your unborn child are particularly at risk for illnesses associated with *Listeria monocytogenes* and *Toxoplasma gondii*.

- *Listeria monocytogenes* is a harmful bacterium found in many foods. *Listeria monocytogenes* can lead to a disease called listeriosis. Listeriosis can cause miscarriage, premature delivery, and serious sickness or death of a newborn baby.
- *Toxoplasma gondii* is a parasite found in numerous food sources, as well as dirty cat litter boxes and other areas where cat feces can be found. Toxoplasmosis can cause hearing loss, mental retardation, and blindness in babies.
- These infections can pass to the fetus even if the mother shows no symptoms.



The good news is that you can make an effort to select and prepare foods to prevent contracting these and other foodborne diseases. This section is written especially for you to help show you how to protect yourself and your unborn baby from contracting a foodborne illness.



*Make safe food handling a priority while pregnant—  
and make it a lifelong commitment to help protect you  
and your family from foodborne illness.*

## What You Can Do During Pregnancy

### Choose Your Seafood Carefully

Fish and other seafood are excellent sources of protein and Omega-3 fatty acids that are important for fetus development. Fish can be part of a healthy diet, but pregnant women should avoid fish with high levels of mercury. High levels of mercury act as a neurotoxin that can be harmful to the nervous system. A fetus' developing nervous system is particularly vulnerable.



The following fish could potentially contain high levels of mercury that could harm the development of a baby's nervous system and should be avoided: swordfish, shark, king mackerel, and tilefish (Gulf of Mexico).

Talk with your doctor if you have any questions about how much, and which fish, you can eat.

### Avoid Raw Seafood

Raw seafood may contain parasites or bacteria, including *Listeria*, which can make pregnant women ill and could potentially harm their babies. All seafood dishes should be cooked to 145 °F. This means that you should avoid: sushi, sashimi, raw oysters, raw clams, raw scallops, and ceviche.

### Be Selective with Smoked Seafood

Refrigerated smoked seafood presents a very real threat of *Listeria*. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna, or mackerel are often labeled as: Nova-style, lox, kippered, smoked, or jerky.

Refrigerated smoked fish should be reheated to 165 °F before eating. It is okay to eat smoked seafood during pregnancy if it is canned, shelf stable, or an ingredient in a casserole or other cooked dish.



### Avoid Unpasteurized Juice or Cider

Unpasteurized juice, even fresh squeezed juice, and cider can cause foodborne illness. In particular, these beverages have been linked to outbreaks of *E. coli* O157:H7. This strain of *E. coli* can result in liver failure and death. Individuals with reduced immunity are particularly susceptible. To prevent *E. coli* infection, either choose a pasteurized version or bring unpasteurized juice or cider to a rolling boil and boil for at least 1 minute before drinking.



### Avoid Unpasteurized Milk

Milk that has not been pasteurized may contain bacteria such as *Campylobacter*, *E. coli*, *Listeria*, *Salmonella*, or *Mycobacterium tuberculosis*. To avoid foodborne illnesses, drink only pasteurized milk.

### Avoid Soft Cheeses and Cheese Made From Unpasteurized Milk

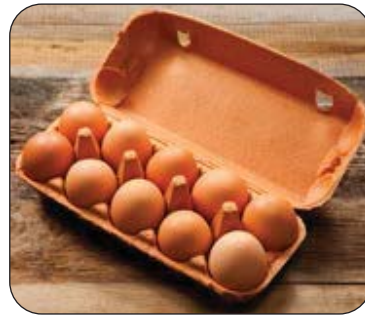
Soft cheeses in particular tend to be made with unpasteurized milk. When pregnant, a woman should avoid the following cheeses that tend to be made with unpasteurized milk: Brie, feta, Camembert, Roquefort, queso blanco, and queso fresco.

Instead of eating soft cheese, eat hard cheese such as Cheddar or Swiss. Pregnant women who want to continue to eat soft cheeses should make sure to check the label to ensure that the cheese is made from pasteurized milk. Pregnant women should pay particular attention at farmers markets to make sure that fresh and soft cheeses are pasteurized.



### Only Consume Cooked Eggs

Undercooked eggs may contain *Salmonella*. To safely consume eggs, cook them to 160 °F or until the yolks are firm to be sure any *Salmonella* that may be present has been destroyed. If you are making a casserole or other dish containing eggs, make sure the dish is cooked to a temperature of 160 °F. The following foods may contain raw eggs should be avoided: eggnog, raw batter, Caesar salad dressing, tiramisu, eggs benedict, homemade ice cream and hollandaise sauce.



Any batter that contains raw eggs, such as cookie, cake, or brownie batter, should not be consumed uncooked by pregnant women. The batter may contain *Salmonella*, which can make a pregnant woman very sick. To safely consume these products, bake them thoroughly. No matter how tempting, DO NOT lick the spoon.

### Avoid Premade Meat or Seafood Salad

Pregnant women should not consume premade ham salad, chicken salad, or seafood salad, which may contain *Listeria*. These items are commonly found in delis. Make these salads at home and follow the four steps of food safety: clean, separate, cook, and chill (see pages 20-22).

### Do Not Eat Raw Sprouts

Raw or undercooked sprouts, such as alfalfa, clover, mung bean, or radish sprouts may contain *E. coli* or *Salmonella*. For safety, cook them thoroughly.

### Avoid Undercooked Meat and Poultry

All meat and poultry should be thoroughly cooked before eating. A food thermometer should be used to ensure that the meat has reached the USDA-recommended safe minimum internal temperature. See the next page for the minimum safe cooking temperatures for specific details. Following the minimum recommended internal temperature is important because meat and poultry may contain *E. coli*, *Salmonella*, *Campylobacter*, or *Toxoplasma gondii*.



- Cook meat to the USDA recommended safe minimum internal temperature.
- Freeze meat for several days at sub-zero (0 °F) temperatures before cooking.
- Wash cutting boards, dishes, counters, utensils, and hands with hot soapy water after contact with raw meat, poultry, seafood, or unwashed fruits or vegetables.

### Reheat Hot Dogs and Luncheon Meats

While the label on these products may say “precooked or fully cooked,” pregnant women should reheat these meats to steaming hot or 165 °F before eating. These meat items may contain *Listeria* and are unsafe to eat if they have not been thoroughly reheated: hot dogs, luncheon meats, cold cuts, fermented or dry sausage, and any other deli-style meat and poultry.

### Be Selective With Meat Spreads or Pâté

Unpasteurized meat spreads or pâté may contain *Listeria*. To consume these products safely when pregnant, eat canned versions. Do not eat refrigerated pâtés or meat spreads as they have high likelihood of containing *Listeria*.





## Food Safety for Transplant Recipients

As a transplant recipient, you are probably familiar with the topic of transplant rejection. It's the body's natural reaction or immune system's response to "foreign invasion."

As a transplant recipient, you are more likely to have a lengthier illness, undergo hospitalization, or even die, should you contract a foodborne illness. To avoid this, you must be especially vigilant when handling, preparing, and consuming foods.

Some foods are more risky for you than others. In general, the foods that are most likely to contain harmful bacteria or viruses fall in two categories:

- Uncooked fresh fruits and vegetables.
- Some animal products, such as unpasteurized (raw) milk; soft cheeses made with raw milk; raw or undercooked eggs, raw meat, raw poultry, raw fish, raw shellfish and their juices; and luncheon meats and store-prepared deli-salads, such as chicken and seafood.



Interestingly, the risk these foods may pose depends on the origin or source of the food and how the food is processed, stored, and prepared.

### If You Have Questions

*...about safe food choices:*

Be sure to consult with your doctor or healthcare provider. He or she can answer any specific questions or help you with your choices.

*...about the safety of particular foods:*

If you are not sure about the safety of a food in your refrigerator, don't take the risk.

The main thing to remember: *When in doubt, throw it out.*



## Major Pathogens (Bacteria, Parasites, Viruses) that Cause Foodborne Illness

Pathogen	Methods of Transmission	Symptoms and Potential Impact
<b>Campylobacter jejuni</b>	<ul style="list-style-type: none"> <li>• Untreated or contaminated water</li> <li>• Unpasteurized (“raw”) milk</li> <li>• Raw or undercooked meat, poultry, or shellfish</li> </ul>	<ul style="list-style-type: none"> <li>• Fever, headache, and muscle pain followed by diarrhea (sometimes bloody), abdominal pain, and nausea. Symptoms appear 2 to 5 days after eating; may last 2 to 10 days. May spread to bloodstream and cause a serious life-threatening infection.</li> </ul>
<b>Clostridium botulinum</b>	<ul style="list-style-type: none"> <li>• Improperly canned foods</li> <li>• Garlic in oil</li> <li>• Vacuum-packed and tightly wrapped food</li> </ul>	<ul style="list-style-type: none"> <li>• Bacteria produce a nerve toxin that causes illness, affecting the nervous system. Symptoms usually appear in 18 to 36 hours, but sometimes in 6 hours to 10 days: double or blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness. If untreated, can lead to muscle paralysis and even death.</li> </ul>
<b>Clostridium perfringens</b>	<ul style="list-style-type: none"> <li>• Food left for long periods on steam tables or at room temperature, and time and/or temperature-abused food</li> <li>• Meats, meat products, poultry, poultry products, and gravy</li> </ul>	<ul style="list-style-type: none"> <li>• Onset of watery diarrhea and abdominal cramps within about 16 hours. The illness usually begins suddenly and lasts for 12 to 24 hours. In the elderly, symptoms may last 1 to 2 weeks.</li> <li>• Complications and/or death occur rarely.</li> </ul>
<b>Escherichia coli O157:H7</b> One of several strains of E. coli that can cause human illness	<ul style="list-style-type: none"> <li>• Undercooked beef, especially hamburger</li> <li>• Unpasteurized milk and juices, like fresh apple cider</li> <li>• Contaminated raw fruits and vegetables and water</li> <li>• Person-to-person contact</li> </ul>	<ul style="list-style-type: none"> <li>• Severe diarrhea that is often bloody, abdominal cramps, and vomiting. Usually little or no fever.</li> <li>• Can begin 1 to 9 days after contaminated food is eaten; lasts about 2 to 9 days.</li> <li>• Some, especially the very young, may develop hemolytic-uremic syndrome (HUS) that causes acute kidney failure and can lead to permanent kidney damage or even death.</li> </ul>
<b>Listeria monocytogenes</b> Can grow slowly	<ul style="list-style-type: none"> <li>• Hot dogs, luncheon meats, cold cuts, fermented or dry sausage, and other deli-style meat and poultry</li> </ul>	<ul style="list-style-type: none"> <li>• Fever, chills, headache, backache, sometimes upset stomach, abdominal pain, and diarrhea. May take up to 2 months to become ill. The duration varies.</li> </ul>

<p>at refrigerator temperatures</p>	<ul style="list-style-type: none"> <li>Unpasteurized (raw) milk and soft cheeses made with unpasteurized (raw) milk</li> </ul>	<ul style="list-style-type: none"> <li>Gastrointestinal symptoms may appear within a few hours to 2 to 3 days, and disease may appear 2 to 6 weeks after ingestion.</li> <li>Those at-risk patients (including pregnant women) may later develop more serious illness; death can result from this bacteria.</li> <li>Can cause problems with pregnancy, including miscarriage, fetal death, or severe illness or death in newborns.</li> </ul>
<p><b>Salmonella</b> (over 2,300 types)</p>	<ul style="list-style-type: none"> <li>Raw or undercooked eggs, poultry, and meat</li> <li>Unpasteurized (raw) milk or juice</li> <li>Cheese and seafood</li> <li>Fresh fruits and vegetables</li> </ul>	<ul style="list-style-type: none"> <li>Stomach pain, diarrhea (can be bloody), nausea, chills, fever, and/or headache usually appear 6 to 72 hours after eating; may last 4 to 7 days.</li> <li>In people with a weakened immune system, such as people with cancer, the infection may be more severe and lead to serious complications, including death.</li> </ul>
<p><b>Staphylococcus aureus</b></p>	<ul style="list-style-type: none"> <li>Contaminated milk and cheeses</li> <li>Salty foods; e.g., ham</li> <li>Sliced meat</li> <li>Foods made by hand that require no reheating; e.g., puddings, sandwiches</li> <li>Foodworkers who carry the bacteria and contaminate food</li> </ul>	<ul style="list-style-type: none"> <li>Nausea, vomiting, stomach cramps, and diarrhea usually occur within 30 minutes to 6 hours after eating contaminated food.</li> <li>Symptoms typically last 1 to 3 days; the young and the elderly may have a more severe illness.</li> </ul>
<p><b>Toxoplasma gondii</b></p>	<ul style="list-style-type: none"> <li>Accidental contact of cat feces through touching hands to mouth after gardening, handling cats, cleaning cat's litter box, or touching anything that has come in contact with cat feces</li> <li>Raw or undercooked meat</li> </ul>	<ul style="list-style-type: none"> <li>Flu-like illness usually appears 10 to 13 days after eating; may last months. Those with a weakened immune system, including people with cancer, may develop more serious illness.</li> <li>Can cause problems with pregnancy, including miscarriage and birth defects.</li> </ul>
<p><b>Trichinella spiralis</b></p>	<ul style="list-style-type: none"> <li>People get trichinellosis (trichinosis) by consuming raw or undercooked meats such as pork, wild boar, bear, bobcat, cougar, fox, wolf, seal or walrus infected with <i>Trichinella</i> larvae</li> </ul>	<ul style="list-style-type: none"> <li>Abdominal symptoms may appear within 1 to 2 days after eating contaminated meat. The first symptoms are nausea, diarrhea, vomiting, fever, fatigue, and abdominal pain, followed by headaches, eye swelling, aching joints (eye swelling, aching muscles, and joints); may begin 2 to 8 weeks after infection.</li> </ul>

## Common Foods: Select the Lower Risk Options

Type of Food	Higher Risk	Lower Risk
<b>Meat and Poultry</b>	<ul style="list-style-type: none"> <li>Raw or undercooked meat or poultry</li> </ul>	<ul style="list-style-type: none"> <li>Meat or poultry cooked to a safe minimum internal temperature</li> </ul>
<p>TIP: Use a food thermometer to check the internal temperature of meat, poultry, eggs, and seafood. See the chart on page 22 for specific safe minimum internal cooking temperatures.</p>		
<b>Seafood</b>	<ul style="list-style-type: none"> <li>Any raw or uncooked fish or shellfish or food containing raw or undercooked seafood; (e.g., sashimi, sushi or ceviche). Refrigerated smoked fish</li> <li>Partially cooked seafood, such as shrimp and crab</li> </ul>	<ul style="list-style-type: none"> <li>Previously cooked seafood heated to 165 °F</li> <li>Canned fish and seafood</li> <li>Seafood cooked to 145 °F</li> </ul>
<b>Milk</b>	<ul style="list-style-type: none"> <li>Unpasteurized (raw) milk</li> </ul>	<ul style="list-style-type: none"> <li>Pasteurized milk</li> </ul>
<b>Eggs</b>	<p>Foods that contain raw/undercooked eggs, such as:</p> <ul style="list-style-type: none"> <li>Homemade Caesar salad dressings</li> <li>Homemade raw cookie dough</li> <li>Homemade eggnog</li> </ul>	<p><i>At home:</i></p> <ul style="list-style-type: none"> <li>Use pasteurized eggs/egg products when preparing recipes that call for raw or undercooked eggs</li> </ul> <p><i>When eating out:</i></p> <ul style="list-style-type: none"> <li>Ask if pasteurized eggs were used</li> </ul>
<p>TIP: Most premade foods from grocery stores, such as Caesar salad dressing, premade cookie dough, or packaged eggnog are made with pasteurized eggs.</p>		
<b>Sprouts</b>	<ul style="list-style-type: none"> <li>Raw sprouts (alfalfa, bean, or other sprouts)</li> </ul>	<ul style="list-style-type: none"> <li>Cooked sprouts</li> </ul>
<b>Vegetables</b>	<ul style="list-style-type: none"> <li>Unwashed fresh vegetables, including lettuce/salads</li> </ul>	<ul style="list-style-type: none"> <li>Washed fresh vegetables, including salads</li> <li>Cooked vegetables</li> </ul>
<b>Cheese</b>	<ul style="list-style-type: none"> <li>Soft cheeses made from unpasteurized (raw) milk, such as:               <ul style="list-style-type: none"> <li>Feta</li> <li>Brie</li> <li>Camembert</li> <li>Blue-veined</li> <li>Queso fresco</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Hard cheeses</li> <li>Processed cheeses</li> <li>Cream cheese</li> <li>Mozzarella</li> <li>Soft cheeses that are clearly labeled "made from pasteurized milk"</li> </ul>
<b>Hot Dogs and Deli Meats</b>	<ul style="list-style-type: none"> <li>Hot dogs, deli meats, and luncheon meats that have not been reheated</li> </ul>	<ul style="list-style-type: none"> <li>Hot dogs, luncheon meats, and deli meats reheated to steaming hot or 165 °F</li> </ul>
<b>Pâtés</b>	<ul style="list-style-type: none"> <li>Unpasteurized, refrigerated pâtés or meat spreads</li> </ul>	<ul style="list-style-type: none"> <li>Canned or shelf-stable pâtés or meat spreads</li> </ul>

TIP: You need to reheat hot dogs, deli meats, and luncheon meats before eating because *Listeria monocytogenes* grows at refrigerated temperatures (40°F or below). This bacterium may cause severe illness, hospitalization, or even death. Reheating these foods until steaming hot destroys this dangerous bacterium and makes these foods safe for you to eat.



## Taking Care

### Handling and Preparing Food Safely

Foodborne pathogens are sneaky. You cannot tell by looking, smelling, or even tasting food whether it contains pathogens. But these pathogens—like disease causing bacteria, viruses, or parasites—can make you sick. You should never taste food to determine if it is safe to eat.

It is especially important that you—or those preparing your food—are always careful with food handling and preparation. The easiest way to do this is to Check Your Steps: Clean, Separate, Cook, and Chill.

### Four Basic Steps for Food Safety



## 1. CLEAN: *Wash hands and surfaces often*



Bacteria can spread throughout the kitchen and get onto cutting boards, utensils, countertops, and food.

**To ensure that your hands and surfaces are clean, be sure to:**

- Wash hands in warm soapy water for at least 20 seconds before and after handling food and after changing diapers, handling pets, or using the bathroom.
- Wash cutting boards, dishes, utensils, and counter tops with hot soapy water between the preparation of raw meat, poultry, and seafood products and preparation of any other food that will not be cooked. As an added precaution, sanitize cutting boards and countertops by rinsing them in a solution made of 1 tablespoon of unscented liquid chlorine bleach per gallon of water. Alternatively, run the plastic board through the wash cycle in your automatic dishwasher.
- Use paper towels to clean up kitchen surfaces. If using cloth towels, wash them often on the hot cycle of the washing machine.
- Wash produce. Rinse fruits and vegetables and rub firm-skin fruits and vegetables under running tap water, including those with skins and rinds that are not eaten.
- Remember to clean the lids of canned goods before opening.

## 2. SEPARATE: *Don't cross-contaminate*



Cross-contamination occurs when bacteria are spread from one food product to another. This is especially common when handling raw meat, poultry, seafood, and eggs. The key is to keep these foods and their juices away from ready-to-eat foods.

**To prevent cross-contamination, remember to:**

- Separate raw meat, poultry, seafood, and eggs from other foods in your grocery shopping cart, grocery bags, and refrigerator.



- Never place cooked food on a plate that previously held raw meat, poultry, seafood, or eggs. If you have to use the same plate, wash it with hot soapy water first before using it to hold cooked food.
- Don't reuse marinades used on raw foods unless you bring them to a boil first.
- Consider using one cutting board only for raw foods and another only for ready-to-eat foods, such as bread, fresh fruits and vegetables, and cooked meat.

### 3. COOK: Cook to safe temperatures



Foods are safely cooked when they are heated to the recommended safe minimum internal temperatures, as shown on the "Is It Done Yet?" chart (see next page).

**To ensure that your foods are cooked safely, always:**

- Use a food thermometer to measure the internal temperature of cooked foods. Check the internal temperature in several places to make sure that the meat, poultry, seafood, or egg products are cooked to safe minimum internal temperatures.
- Cook **ground beef** to at least 160 °F and **ground poultry** to a safe minimum internal temperature of 165 °F. Color of food is not a reliable indicator of safety or doneness.
- Reheat **fully cooked hams** packaged at a USDA-inspected plant to 140 °F. For fully cooked ham that has been repackaged in any other location or for leftover fully cooked ham, heat to 165 °F.
- Cook **seafood** to 145 °F. Cook **shrimp, lobster, and crab** until the shells turn red and the flesh is pearly opaque. Cook **clams, mussels, and oysters** until the shells open. If the shells do not open, do not eat the oyster inside.
- Cook **eggs** until the yolks and whites are firm. Use only recipes in which the eggs are cooked or heated to 160 °F.
- Cook all raw **beef, lamb, pork, and veal steaks, roasts, and chops** to 145 °F with a 3-minute rest time after removal from the heat source.
- Bring **saucés, soups, and gravy** to a boil when reheating. Heat other leftovers to 165 °F.



- Reheat **hot dogs, luncheon meats, bologna, and other deli meats** until steaming hot or 165 °F.
- When cooking in a microwave oven, cover food, stir, and rotate for even cooking. If there is no turntable, rotate the dish by hand once or twice during cooking. Always allow standing time, which completes the cooking, before checking the internal temperature with a food thermometer. Food is done when it reaches the USDA and the Food and Drug Administration recommended safe minimum internal temperature.

Use a food thermometer to be most accurate. You can't always tell by looking.

USDA Recommended Safe Minimum Internal Temperatures				
145°F	145°F	160°F	160°F	165°F
with a 3-minute rest time				
				
Beef, Pork, Veal & Lamb Steaks, Roasts & Chops	Fish	Beef, Pork, Veal & Lamb Ground	Egg Dishes	Turkey, Chicken & Duck Whole, Pieces & Ground

#### 4. CHILL: *Refrigerate promptly*



Cold temperatures slow the growth of harmful bacteria. Keeping a constant refrigerator temperature of 40 °F or below is one of the most effective ways to reduce risk of foodborne illness. Use an appliance thermometer to be sure the refrigerator temperature is consistently 40 °F or below and the freezer temperature is 0 °F or below.

#### To chill foods properly:

- Refrigerate or freeze meat, poultry, eggs, seafood, and other perishables within 2 hours of cooking or purchasing. Refrigerate within 1 hour if the temperature outside is above 90 °F.
- Raw or cooked meat, poultry or egg products, as any perishable foods, must be kept at a safe temperature during thawing. Never thaw food at room temperature, such as on the countertop. It is safe to thaw food in the refrigerator, in cold water, or in the microwave. If you thaw food in cold water or in the microwave, you should cook it immediately.
- Divide large amounts of food into shallow containers for quicker cooling in the refrigerator.





## Be in the Know

### Becoming a Better Shopper

Follow these safe food-handling practices while you shop.



- Carefully read food labels while in the store to make sure food is not past its “sell-by” date. (See Food Product Dating on the next page.)
- Put raw packaged meat, poultry, or seafood into a plastic bag before placing it in the shopping cart, so that its juices will not drip on and contaminate other foods.
- If the meat counter does not offer plastic bags, pick some up from the produce section before you select your meat, poultry, and seafood.
- Buy only **pasteurized** milk, cheese, and other dairy products from the refrigerated section. When buying fruit juice from the refrigerated section of the store, be sure that the juice label says it is pasteurized.
- Purchase eggs in the shell from the refrigerated section of the store. (NOTE: Store the eggs in their original carton in the main part of your refrigerator once you are home.) For recipes that call for eggs that are raw or undercooked when the dish is served, use either shell eggs that have been treated to destroy *Salmonella* by pasteurization or pasteurized egg products.
- **Never** buy food that is displayed in unsafe or unclean conditions.
- When purchasing canned goods, make sure that they are free of dents, cracks, or bulging lids. Once you are home, remember to clean each lid before opening the can.
- Purchase produce that is not bruised or damaged.

*When shopping for food, it is important to read the label carefully.*



## Food Product Dating

Read the label for food safety information on raw foods.

### Types of Open Dates

Open dating is found on most foods including meat, poultry, egg, and dairy products.

- A **“Sell-By”** date tells the store how long to display the product for sale for inventory management. It is not a safety date
- A **“Best If Used By” (or Before)** date indicates when a product will be of best flavor or quality. It is not a purchase or safety date.
- A **“Use-By”** date is the last date recommended for the use of the product while at peak quality. The date has been determined by the manufacturer of the product.



### Closed or Coded Dates

**Closed or coded dates** are packing numbers for use by the manufacturer. Closed or coded dating might appear on shelf-stable products such as cans and boxes of food.

It is best to follow recommended storage guidelines (see page 25) or “keep times” as dates or packages are not primarily safety dates. See the FoodKeeper App at [www.foodsafety.gov/foodkeeper](http://www.foodsafety.gov/foodkeeper).



# Cold Food Storage

These storage guidelines for home-refrigerated foods will keep them from spoiling or becoming dangerous to eat. The guidelines for freezer storage are for quality only. Frozen foods remain safe indefinitely.

Product	Refrigerator (40 °F)	Freezer (0 °F)
<b>Eggs</b>		
Fresh, in shell	3 to 5 weeks	Don't freeze
Hard cooked	1 week	Don't freeze well
<b>Liquid Pasteurized Eggs, Egg Substitute</b>		
Opened	3 days	Don't freeze well
Unopened	10 days	1 year
<b>Deli and Vacuum-Packed Products</b>		
Egg, chicken, ham, tuna & macaroni salads	3 to 5 days	Don't freeze well
<b>Hot Dogs</b>		
Opened package	1 week	1 to 2 months
Unopened package	2 weeks	1 to 2 months
<b>Luncheon Meat</b>		
Opened package or deli sliced	3 to 5 days	1 to 2 months
Unopened package	2 weeks	1 to 2 months
<b>Bacon &amp; Sausage</b>		
Bacon	7 days	1 month
Sausage, raw — from chicken, turkey, pork, beef	1 to 2 days	1 to 2 months
<b>Hamburger &amp; Other Ground Meats</b>		
Hamburger, ground beef, turkey, veal, pork, lamb, & mixtures of them	1 to 2 days	3 to 4 months
<b>Fresh Beef, Veal, Lamb &amp; Pork</b>		
Steaks	3 to 5 days	6 to 12 months
Chops	3 to 5 days	4 to 6 months
Roasts	3 to 5 days	4 to 12 months
<b>Fresh Poultry</b>		
Chicken or turkey, whole	1 to 2 days	1 year
Chicken or turkey, pieces	1 to 2 days	9 months
<b>Seafood</b>		
Lean fish (flounder, haddock, halibut, etc.)	1 to 2 days	6 to 8 months
Fatty fish (salmon, tuna, etc.)	1 to 2 days	2 to 3 months
<b>Soups &amp; Stews</b>		
Vegetable or meat added	3 to 4 days	2 to 3 months
<b>Leftovers</b>		
Cooked meat or poultry	3 to 4 days	2 to 6 months
Chicken nuggets or patties	3 to 4 days	1 to 3 months
Pizza	3 to 4 days	1 to 2 months



[www.fsis.usda.gov/apps](http://www.fsis.usda.gov/apps)

**Have more questions about storage timelines?**

Download our Foodkeeper app! It has information on 400+ food and beverage items.



## Transporting Your Groceries

Follow these tips for safe transporting of your groceries:



- Pick up perishable foods last, and plan to go directly home from the grocery store.
- Always refrigerate perishable foods within 2 hours.
- Refrigerate within 1 hour if the temperature outside is above 90 °F.
- In hot weather, take a cooler with ice or another cold source to transport foods safely.

## Tips for Transporting Food

- Keep cold food cold, at 40 °F or below. To be safest, place cold food in a cooler with ice or frozen gel packs. Use plenty of ice or frozen gel packs. Cold food should be at 40 °F or below the entire time you are transporting it.
- Hot food should be kept hot at 140 °F or above. Wrap the food well and place in an insulated container.



## Stay “Food Safe” When Traveling Internationally

Discuss your travel plans with your physician before traveling to other countries. Your physician may have specific recommendations for the places you are visiting and may suggest extra precautions or medications to take on your travels.

For more information about safe food and water while traveling abroad, access the Centers for Disease Control and Prevention website at [www.cdc.gov/travel](http://www.cdc.gov/travel).



## Foodborne Illness

### Know the Symptoms

Despite your best efforts, you may find yourself in a situation where you suspect you have a foodborne illness. Foodborne illness often presents itself with flu-like symptoms.

These symptoms include:

- Nausea
- Vomiting
- Diarrhea
- Fever

If you suspect that you could have a foodborne illness, there are four key steps that you should take.



## Foodborne Illness Action Plan

If you suspect you have a foodborne illness, follow these general guidelines:

### 1. Consult your physician or healthcare provider, or seek medical treatment as appropriate.

- Contact your physician immediately if you develop symptoms or think you may be at risk.
- If you develop signs of infection as discussed with your physician, seek out medical advice and/or treatment immediately.

### 2. Preserve the food.

- If a portion of the suspect food is available, wrap it securely, label it to say "DANGER," and freeze it.
- The remaining food may be used in diagnosing your illness and in preventing others from becoming ill.



### 3. Save all the packaging materials, such as cans, labels, and cartons.

- Write down the food type, the date and time consumed, and when the onset of symptoms occurred. Write down as many foods and beverages you can recall consuming in the past week (or longer), because the onset times for various foodborne illnesses differ.
- Save any identical unopened products.
- If the suspect food is a USDA-inspected meat, poultry, or egg product, call the USDA Meat and Poultry Hotline, **1-888-MPHotline (1-888-674-6854)**. For all other foods, call the FDA Office of Emergency Operations at 1-866-300-4374 or (301) 796-8240.

### 4. Call your local health department if you believe you became ill from food you ate in a restaurant or other food establishment.

- The health department staff will be able to assist you in determining whether any further investigation is warranted.
- To locate your local health department, visit [www.foodsafety.gov](http://www.foodsafety.gov).



## For More Information on Food Safety

You may contact the USDA Food Safety and Inspection Service and the Health and Human Services (HHS) Food and Drug Administration (FDA) to obtain additional food safety information in both English and Spanish.

### Online:

Information can be accessed on the FSIS website: [www.fsis.usda.gov](http://www.fsis.usda.gov), FDA website: [www.fda.gov/food](http://www.fda.gov/food) or at [www.foodsafety.gov](http://www.foodsafety.gov).

- **Food Safety Questions? "Ask USDA"**  
*AskUSDA* is an automated response system available 24/7 at [www.Ask.USDA.gov](http://www.Ask.USDA.gov).
- Send email inquiries to [mphotonline@usda.gov](mailto:mphotonline@usda.gov) or via FDA's webpage <http://cfsan.force.com/InquiryPage>.
- Need information about a food recall? Visit [www.foodsafety.gov](http://www.foodsafety.gov).

### By Phone:

Call the USDA Meat and Poultry Hotline at **1-888-MPHotline (1-888-674-6854)**.

- This is year-round, toll-free Hotline is available Monday through Friday from 10 a.m. to 6 p.m. Eastern Time.
- An extensive selection of timely food safety messages is also available at these same numbers, 24 hours a day.



## Additional Food Safety Resources

Gateway to Government Food Safety Information, including all recalls and alerts [www.foodsafety.gov](http://www.foodsafety.gov).

### Centers for Disease Control and Prevention

1-800-232-4636 (24-hour recorded information)

[www.cdc.gov/foodsafety](http://www.cdc.gov/foodsafety)

- National Center for Infectious Diseases  
<http://www.nc.cdc.gov/travel>
- National Center for Infectious Diseases/Water-Related Diseases  
<http://www.cdc.gov/healthywater/disease/type.html>

### U.S. Environmental Protection Agency, Office of Water

<http://water.epa.gov>

### Partnership for Food Safety Education (Fight BAC!®)

<http://www.fightbac.org>





## Food Safety Questions

To order this booklet, contact:

USDA Meat and Poultry Hotline  
**1-888-MPHOTLINE**  
**(1-888-674-6854)**

E-mail: [mph hotline@usda.gov](mailto:mph hotline@usda.gov)  
or [fsis.outreach@usda.gov](mailto:fsis.outreach@usda.gov)

To chat with our food safety representatives, contact "Ask USDA"  
– USDA's Web-based automated response system, available 24/7.

[www.Ask.USDA.gov](http://www.Ask.USDA.gov)

Food Safety and Inspection Service

[www.fsis.usda.gov](http://www.fsis.usda.gov)





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To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

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