

Foodborne Facts & Fiction

Fiction 1: *If you take just a bite of something that is undercooked you'll be ok.*

Fact: It takes a very small amount of some microbes to make a person sick. The infectious dose of *E. coli* O157:H7, for instance, is thought to be as low as 10-100 organisms (bacteria). To put that in perspective, a few million bacteria fit on the head of a pin.

Fiction 2: *E. coli bacteria are found everywhere and we just shouldn't worry about them.*

Fact: While all mammals have some types of helpful and harmless *E. coli* in their digestive tracts, there are about 100 strains of *E. coli* known as shigatoxic *E. coli* that are found in the farm animals we consume and they can be very harmful to human health. They contaminate our food when farm animal fecal contamination spills into the meat at slaughter or contaminates irrigation water used for produce. The most well-known of these is *E. coli* O157:H7. When consumed in food or water, *E. coli* O157:H7 and other shigatoxic *E. coli* release a very potent toxin (a shigatoxin) which can cause bloody diarrhea and a host of other severe complications, kidney failure, and death. Once these bacteria are in our foods, the only way to kill them is by cooking them to 180 degrees. This doesn't is problematic for produce which is eaten fresh without a kill step.

Fiction 3: *Salmonella may be in some chicken and eggs, but it really is just a nuisance- nothing serious.*

Fact: All *Salmonella* are not created equal...there are close to 2,500 different strain types of *Salmonella*; some are found in very specific places and types of food while others are more general in their distribution. While most people recuperate after a *Salmonella* infection, it can cause very serious complications including a debilitating disease known as reactive arthritis or Reiter's Syndrome. The very young, the elderly and those with weakened immune systems are most likely to develop serious complications.

Fiction 4: *No one eats raw chicken, so why should I be concerned about Salmonella?*

Fact: More than 50% of all broiler chickens in the U.S. have been found to be contaminated with *Salmonella* bacteria. While cooking to 165 degrees will kill the bacteria, bringing a food product into our kitchens with that high a load of contamination is problematic. Juices from the raw chicken can cross-contaminate hands, utensils, counters, cutting boards, sinks, kitchen towels and anything else they come in contact with. These raw juices can make you just as sick as eating undercooked poultry.

Fiction 5: *It's ok to quickly grab up food that has dropped on floor or in the sink and use it.*

Fact: The 5-second rule is an urban myth...you cannot drop food on the floor or in the sink for any amount of time without it picking up whatever microbe it comes in contact with. In general, your kitchen sink is the dirtiest place in the house for harmful microbes.

Fiction 6: *You can wash whatever germs are present on your produce off under running water.*

Fact: While washing your fresh produce is highly recommended, washing it does not ensure its safety. Some microbes can get into produce at the time they germinate and be inside the leaves or fruit. In addition, any small cuts or holes in the skin or near the stem can allow microbes to penetrate the inside of your produce. (See public health section for specific recommendations on produce, [click here](#)).

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Fiction 7: *It's easy for public health officials to figure out what causes foodborne disease - that's why we see so many outbreaks in the press.*

Fact: Actually, the reported outbreaks that you hear and read about in the press are only the tip of the iceberg when it comes to foodborne disease. Only 4-6% of all cases of foodborne disease are being linked to outbreaks with the food vehicle identified. This is due many factors including when most people who fall ill they do not seek medical care, and only a small portion get diagnosed through stool culture tests. Then, only a small number of those diagnosed go on to be reported and investigated by health departments. Ultimately, very few cases link up with other cases who report eating similar foods.

Fiction 8: *When we hear about an outbreak we get accurate numbers for how many people were ill.*

Fact: For every 1 case of Salmonella that gets diagnosed there are 38 more cases out there that never find out what pathogen (the multiplier effect due to people not seeking medical care and not getting stool cultures, etc.). In the well-published summer 2008 national *Salmonella* Saintpaul outbreak, for instance, there were 1442 cases reported in the final analysis, but this is 1442 cases that had positive cultures for *Salmonella* Saintpaul. The actual number of people who fell ill in that outbreak was probably over 50,000.

Fiction 9: *Foodborne disease may be unpleasant to go through, but once it's over, it's over.*

Fact: While most people recover fully from foodborne disease, some people have gastrointestinal difficulties for months or years, and there are some who develop long-term consequences that are severe and life-threatening such as kidney failure, the need for kidney transplant, the development of diabetes, heart problems, seizures and strokes, paralysis needing long rehabilitation, reactive arthritis and joint problems, and irritable bowel syndrome, to name a few. The long-term consequences of foodborne disease are not well understood and have become a major area for program work in the years to come with the S.T.O.P. organization (see long-term consequences section, [click here](#)).

Fiction 10: *You can look at meat, poultry and seafood while they're cooking and tell when they're done and safe to eat.*

Fact: The message used to be to cook burgers until the meat was gray and juices ran clear and poultry until there was no more pink, but these messages were dangerous and have been replaced. The only way to accurately tell whether your meat and poultry have been cooked long enough to kill the microbes that may be present is to use a thermometer every time. See our cooking temperature section under Public Health ([click here](#)).

Fiction 11: *All doctors receive medical training in foodborne diseases.*

Fact: There is no specialty in foodborne diseases and medical school training in curriculum for the diagnosis and treatment of foodborne illness is variable and not standardized. Furthermore, every state has its own reporting laws and mechanisms regarding infectious diseases and foodborne illness, but local and state health departments do very little outreach to educate the medical professionals in their areas on these issues.

Fiction 12: *The government quickly and efficiently removes/recalls foods they know to be harmful from the marketplace.*

Fact: Not only is it a difficult and lengthy process to actually find and identify the food products that are making people sick, but once they are found the government has no authority to actually initiate a recall.

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Precious time can be lost while consumers are still purchasing and eating foods with known harmful contaminants in them, when government officials are trying to convince the food company that a recall is necessary.

Fiction 13: *I can just buy organic foods such as fruits and vegetables to make sure my family stays safe.*

Fact: Organic processes and labels offer protection against pesticides and chemicals, but do not normally have any added value in terms of microbial contamination.

Fiction 14: *All fresh juices are pasteurized.*

Fact: All fresh juices that cross state lines (interstate shipment) are covered by laws that require pasteurization. However, juices that are produced and consumed within one state (intrastate shipment) are exempt from this rule. That means that roadside farm-fresh juices and ciders as well as those fresh-squeezed on site for smoothies and restaurant meals are not required to be pasteurized. Always ask before buying or ordering a juice product if you don't see a prominent pasteurization label.

Fiction 15: *All milk and dairy products are pasteurized.*

Fact: Several states still permit the sale of unpasteurized milk and unpasteurized cheeses are a delicacy and are very common. Soft cheeses such as blue cheese, feta, queso blanco, etc. are often unpasteurized. Pregnant women, young children, the elderly and those with weakened immune systems should avoid unpasteurized products. The Academy of Pediatrics in its December 12, 2008 newsletter, states "Raw or unpasteurized milk can transmit many serious infectious diseases to children. Furthermore, there are no documented health benefits associated with ingestion of unpasteurized milk or milk products. Therefore, the Academy advises that children should receive only pasteurized milk products.

Fiction 16: *Testing is being routinely done for BSE or mad cow disease in U.S. beef.*

Fact: It is difficult to test for the "prions" that cause "mad cow disease" until the cow has died and then it's brain and neurological tissue is analyzed. The USDA has cut back in recent years on the number of brain tissue samples it tests on cattle that have died from neurological disorders. As of 2006 less than .1% of slaughtered cattle slaughtered daily are subject to BSE or prion testing.

Fiction 17: *Pregnant woman should eat healthy lean meats and fresh fruits and vegetables without worry for their health.*

Fact: Pregnant women need to be very careful about what they eat since many microbes are especially harmful to the growing fetus. Listeriosis is extremely harmful for pregnant women and has a high rate of causing miscarriage or early delivery. *Listeria monocytogenes* is a bacteria found in many ready-to-eat foods including hot dogs, cold cuts, soft cheeses and pates. It grows at refrigeration temperatures and is killed by thorough heating. Fresh produce needs to be thoroughly cleaned and care should be given to only choose whole unbroken fruits and vegetables. (See special fact sheet for pregnant women in the Public Health section, [click here](#))

Fiction 18: *There is someone in charge of food safety in the U.S.*

Fact: There is not one person or even one federal agency in charge of food safety in the U.S. The USDA, FDA, CDC, EPA and other agencies all play a role in overseeing food production and regulating food products in the United States and often operate under differing rules with differing objectives. There is not

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one single federal agency with authority at the farm level for oversight of the farm animals that go into food production. In the case of large national outbreaks from foodborne diseases the lack of coordination between the agencies and not having any one person in charge often makes it difficult to protect public health.

Fiction 19: *All restaurants are inspected regularly.*

Fact: Restaurant inspections vary considerably in frequency and thoroughness based upon the county you live in and the funding available. Some restaurants are inspected 3-4 times a year, while others are inspected yearly or less. There is also considerable variation in what action will be triggered when food safety violations are found and how and when inspection information is shared with the public.

Fiction 20: *The United States has the safest food supply in the world.*

Fact: This statement is commonly heard from legislative and regulatory officials, but there are many ways to measure safety and the statistics backing up this statement are never mentioned. If measurements were done amongst industrialized countries based on rates of illness or deaths, or on effectiveness of food inspection, or on the efficiency of recall or identifying outbreaks, the results would be debatable at best.

Fiction 21: *You can only get a foodborne disease by eating or drinking a contaminated product.*

Fact: When people are sick (even with very mild symptoms), they can carry the foodborne disease and pass it on to others via the fecal-oral route. This is called secondary or person-to-person transmission and happens often in daycare, nursing home and hospital settings. It also is a common problem whereby sick food workers in restaurants and in the food service industry can contaminate the foods and products they handle. Farm animals can contaminate fresh water streams, ponds, and rivers with microbes that will make you sick if you swim in the water and ingest any of it. Young children who are ill and have diarrheal accidents in community pools or local ponds can cause the same problem.

You can also get a foodborne disease when raw juices from contaminated meat and poultry cross contaminate hands, utensils and so forth and pass the microbes on. In addition, children who visit petting zoos and fairs can get ill by handling/petting farm animals carrying the microbes and then putting their hands in their mouths. Pet foods and treats have also been known to pass on pathogens such as *Salmonella* to people who handle them and then eat without washing their hands. There have also been many documented cases of people getting ill from handling wild or exotic pets such as reptiles (turtles and lizards) and birds (baby chicks) who can harbor dangerous *Salmonella* strains.

