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Why Do Some People Get Food Poisoning (and Others Don't)?

Analysis by Dr. Joseph Mercola | May 27, 2025

STORY AT-A-GLANCE

- Your gut microbiome plays a central role in determining whether you get food poisoning, even if you eat the same contaminated meal as others who stay symptom-free
- Alcohol disrupts your gut's protective bacteria within hours, making you far more susceptible to foodborne pathogens, even after just one night of heavy drinking
- Eating more of a contaminated food increases your odds of getting sick, so the quantity you ingest is just as important as the type of bacteria present
- Cross-contamination in the kitchen — like using the same cutting board for raw meat and vegetables — is one of the fastest ways harmful bacteria get into your meals
- Reheating leftovers won't always destroy toxins already produced by bacteria, meaning improperly stored food could still make you sick even after it's cooked again

Roughly 48 million Americans get sick from contaminated food each year, and around 3,000 die from it.[1] You probably don't hear about most of these cases, but they happen all the time, and chances are, you've already experienced it before. But here's one strange fact — It's possible for you to eat the same food as everyone else, and yet be the only one to end up sick. The defining factor? Your gut health.

What Happens When You Get Food Poisoning?

Not all foodborne illnesses are the same. Some cases are technically food poisoning — meaning you've consumed food tainted by toxins like botulinum, the same substance behind botulism. Other cases involve bacteria like Salmonella, E. coli, or Listeria, which infect your body and trigger unpleasant symptoms.

When you get food poisoning, you experience vomiting, diarrhea, stomach cramps, and sometimes fever. These symptoms might kick in right after a meal, although there are also cases when they take days to appear.[2]

- **Foodborne illnesses are acquired from different types of food —** Some of the more common culprits include deli meats, raw fruits and vegetables, raw or undercooked meat, eggs and seafood, and uncooked dough. Harmful germs like bacteria, viruses, and parasites get into these foods through different methods, such as during preparation or processing.

- **You can't always rely on smell, taste, or appearance —** One of the most practical warnings was that contaminated food doesn't always look, taste, or smell spoiled.[3] Bacteria don't necessarily change the texture, color, or scent of food, especially in the early stages. That makes it easy to eat something dangerous without even knowing it.

- **The illness might not hit right away —** While some bacteria cause symptoms within hours, others take days or even weeks to produce noticeable illness. This delay makes it harder to identify the source of the problem and easier to keep eating something that's making you sick. If you've ever wondered why you got sick "out of nowhere," there's a good chance the contamination happened days earlier.

- **High-risk groups are far more vulnerable to complications —** Older adults, infants, pregnant women, and people with weakened immune systems are at far higher risk for serious illness and hospitalization. Even bacteria that cause only mild discomfort in healthy adults could lead to serious complications and even hospitalizations in these groups.[4]

Your Gut Health Predicts Whether You Get Sick or Stay Fine

An article published in HuffPost examined a common but puzzling phenomenon — Why one person who eats a contaminated meal ends up with food poisoning, while others who eat the same food walk away feeling fine.[5]

Dr. Justin Mazur, a board-certified emergency physician, explained that this isn't rare. Many ER patients wrongly assume they can't have food poisoning if they're the only ones affected. But that belief couldn't be more wrong.

- **Your gut microbiome could be the deciding factor —** Your body's internal ecosystem, specifically your gut microbiome, determines how well you handle exposure to foodborne bacteria or viruses. Made up of trillions of bacteria living in your digestive tract, it's responsible for more than digestion. It plays a central role in immune defense, inflammation, and even your ability to fight off pathogens in food.

  If your microbiome is unhealthy, meaning it has low bacterial diversity and too many harmful bacteria, you're more likely to get sick. As Mazur put it, "A person with an inadequate microbiome will experience food poisoning more often."

- **Certain lifestyle habits weaken your microbiome fast —** For example, drinking alcohol has an immediate effect on your gut's defense system. Mazur says that drinking heavily, even just for a day, disrupts your microbiome's balance and makes your system more susceptible to pathogens in food.

  "Alcohol intake damages the microbiome and is a lesser-known cause of dysbiosis — overgrowth of pathogenic bacteria — and is another risk factor for an inadequate microbiome," he warns.

  For more information on how alcohol harms your health, read "**What Does the Science Say About Alcohol Consumption?**"

- **The kind of food you eat affects your risk —** Consuming contaminated meat, undercooked seafood, and raw dairy products obviously puts you at risk, however, it's actually your baseline diet that plays a major role in your outcomes. Mazur says

that people who consume high levels of refined carbohydrates, processed junk foods, and refined sugar are more likely to damage their gut lining over time.

When your intestinal walls are inflamed, it's easier for bacteria to get through and trigger an infection. If you've got low microbial diversity and an inflamed gut, you're setting the stage for illness with every risky bite.

- **The amount you eat matters —** It's not just what you eat, but how much you eat. According to Mazur, eating more of a contaminated food increases your chances of getting sick, and is one of the biggest factors. In other words, if you had three bites of the bad sushi and your friend only had one, you're more likely to become ill. It's about microbial load; the more pathogens you ingest, the harder your body has to work to fight them off.

- **A compromised immune system opens the door —** Dr. Elizabeth Sharp, a board-certified internal medicine physician, says that people with weakened immune systems — whether due to stress, poor diet, chronic illness, or medication — are far more likely to become infected after exposure. If your immune system is running low, you don't have the reserves to mount an effective response against the bacteria or virus in your food.

  Sharp also mentioned that if your gut is already inflamed from your lifestyle or environment, it's easier for pathogens to breach the intestinal wall and start causing symptoms.

- **A healthy microbiome acts like a shield —** A strong, well-balanced microbiome will stop harmful invaders before they ever take hold. "Entrenched healthy bacteria support each other preferentially," Mazur explained.

  That means your good bacteria create an environment that's hostile to pathogens. They outcompete the bad guys for space and resources, effectively locking them out. This microbial teamwork prevents invading bacteria from taking root and causing illness.

- **Pathogens have to fight for survival inside your gut —** Think of your gut as a battleground. When a foodborne pathogen enters, it has to survive stomach acid, compete with existing bacteria, and find a way to break through your intestinal barrier. If your system is already strong — with a balanced gut flora, strong mucus lining, and robust immune surveillance — most pathogens fail.

  But if those defenses are weakened, even a small amount of contaminated food could trigger symptoms of food infection.

Small Mistakes in the Kitchen Will Make You Seriously Sick

While foods could become contaminated through different methods, one of the most common sources is improper food handling and cooking. When food is prepared, cooked, or stored incorrectly, it provides opportunities for pathogenic bacteria to thrive, leading to serious health consequences.[6]

- **Cross-contamination spreads bacteria invisibly —** Cutting raw chicken on a board, then slicing your salad vegetables on the same board without washing it with soap in between? That's one of the fastest ways to contaminate your meal.

  Ideally, you should use different cutting boards for meat and produce to avoid cross-contamination. The same goes for kitchen knives — don't use a knife that's touched raw meat to chop fresh fruit. This mistake allows dangerous bacteria like Salmonella or E. coli to transfer to food that won't be cooked, giving bacteria a free pass straight into your gut.

- **One of the most overlooked risks is poor refrigeration —** If you leave perishable foods — like fresh meat, milk, or fish — out at room temperature for more than two hours uncooked, bacteria begin multiplying rapidly. At 90 degrees F (32 degrees C) or higher, that timeframe shrinks to just one hour.

- **Reheating contaminated leftovers doesn't always make them safe again —** Many people assume they're in the clear once they microwave their leftovers, but reheating food doesn't always kill all bacteria, especially if the food wasn't cooled or

stored properly in the first place. In fact, some bacteria produce toxins that aren't destroyed by heat. That means if you left your rice or meat out overnight and then reheated it the next day, you're still at risk.

- **Thawing food on the counter is a setup for sickness —** Letting frozen meat or poultry thaw on the counter seems harmless, but it actually allows the surface of the food to reach unsafe temperatures while the inside is still frozen. That outer layer becomes a playground for bacteria. The safest method is to thaw it in the refrigerator, in cold water (changed every 30 minutes).

- **Your hands are the No. 1 tool for either safety or risk —** Dirty hands are one of the most common causes of foodborne illness. Wash your hands with warm, soapy water for 20 seconds before and after handling food, especially raw meat, eggs, and seafood. Make sure to scrub under your fingernails and between skin creases to remove bacteria.

- **Cooking temperatures are your final line of defense —** When cooking, you must know what's the correct internal cooking temperature to kill bacteria effectively. For example, ground beef should be cooked to at least 160 degrees F (71 degrees C) and poultry to 165 degrees F (73 degrees C). Leftovers must be reheated to 165 degrees F as well. Use a food thermometer, especially since color alone isn't reliable, especially with ground meats or stuffed dishes.

- **Leftovers must be stored safely —** Refrigerate leftovers as soon as they have cooled, and make sure to eat them within three to four days. Don't rely on the "sniff test." Many bacteria don't alter the smell, taste, or look of food, meaning it could still make you sick even if it seems fine. When in doubt, throw it out.

Strategies to Optimize Your Gut Health

When it comes to foodborne illnesses, sometimes it's not always about the food; it could involve your gut, too. The way your body handles bacteria depends on the strength of

your gut, your immune system, and your habits in the kitchen. The good news? You have way more control over that than you might think.

If your microbiome isn't functioning well, it won't matter how clean your kitchen is. Your first job is to support the trillions of bacteria that protect you from invaders. That means cutting back on processed foods, avoiding or reducing your alcohol intake, and feeding your gut with real food. Here's what I recommend if you want to protect yourself from foodborne illness — especially if your gut has been compromised or your immune defenses feel off.

- **Eliminate vegetable oils from your diet —** Consuming excessive amounts of linoleic acid (LA) from vegetable oils disrupts your mitochondrial function and, in turn, how your cells make energy, which ultimately wrecks your gut environment. Switch to butter, ghee, or tallow instead. This will significantly improve your cellular energy production, which allows your gut to maintain a hospitable environment for beneficial bacteria.

- **Optimize your carbohydrate intake —** Your body needs around 200 to 250 grams of carbohydrates daily to maintain optimal cellular energy production. It's best to start with easily digestible carbohydrates, particularly if your gut health is compromised.

- **If you have severe gut issues, start with dextrose water —** Sip it slowly throughout the day as a temporary rescue strategy to help heal your gut (take note that this is not a long-term solution). One or two weeks is typically sufficient. As your gut heals, gradually add in whole fruit, white rice or juice with pulp before heavier starches or fibrous vegetables.

- **Once your gut feels better, eat more fiber —** This is the primary fuel for your beneficial gut microbes, allowing them to produce short-chain fatty acids (SCFAs) like butyrate that strengthen your gut barrier. Also, eat more resistant starches like cooked-then-cooled potatoes or green bananas, as they fuel butyrate production.

- **Introduce Akkermansia supplements wisely —** Akkermansia muciniphila is a key bacterium that strengthens your gut barrier, but most people have very low levels.

After you eliminate vegetable oils for at least half a year, consider taking a timed-release Akkermansia supplement. A time-released delivery system ensures more of the bacteria survive and reach your colon.

More Tips to Avoid Getting Food Poisoning

Remember that safety starts in the kitchen, and practicing safe habits will help prevent contamination and reduce your risk of getting sick. This is in fact one reason why I recommend cooking your own meals as opposed to eating out in restaurants — Aside from their excessive use of vegetable oils, you don't see your food being prepared, so you cannot be 100% sure that the establishment practices safe cooking methods.

- **The small things matter —** Never let leftovers sit out for more than two hours, use separate cutting boards for meat and vegetables, and wash your hands with soap for 20 full seconds before touching food. Always check your fridge temperature — it needs to stay below 40 degrees F. These strategies will cut off bacteria from the environment before it ever reaches your plate.

  For more information on keeping your kitchen clean, read "**What's the Most Germ-Ridden Object in Your Kitchen? It's Not the Sponge**."

- **Don't trust your nose — trust the temperature —** If you've ever sniffed a piece of chicken and thought, "Seems fine," that's not enough. Bacteria don't always smell. They don't change the color or taste of your food. That's why when cooking, it's best to use a meat thermometer. Once you make this a habit, it's fast, easy, and it gives you peace of mind every single meal.

- **Eat smart when your defenses are down —** If you just finished antibiotics, are recovering from illness, or have been under major stress, your gut and immune system are weaker. During these times, avoid higher-risk foods like deli meat, sushi, raw dairy, and other foods that easily spoil left at room temperature.

  I also advise avoiding buying products from **confined animal feeding operations (CAFOs)** in general, even if you're in optimal health, because pathogenic bacteria

are rampant in these settings, further increasing your chances of bacterial contamination.

- **Prepare for group meals with safety in mind —** Bulk-cooked food at weddings, potlucks, or parties is a major source of foodborne illness. If you're cooking for a group, divide large dishes into shallow containers and refrigerate them right away; don't leave them to cool on the counter.

  If you're eating food someone else made, choose items that were cooked fresh and kept hot. Skip anything that's been sitting at room temperature for hours, especially rice, casseroles, or meat trays.

Taking these steps puts you back in charge. Instead of fearing food poisoning, you'll know you've got your bases covered, from the inside out.

Frequently Asked Questions (FAQs) About Food Poisoning

Q: Why do some people get food poisoning while others who eat the same meal don't?

A: The difference often lies in the strength of your gut microbiome. If your gut is imbalanced or inflamed, harmful bacteria from food will more easily break through your intestinal lining and trigger symptoms. A healthy gut filled with diverse, protective bacteria acts as a shield, stopping many pathogens before they cause harm.

Q: Can I tell if food is contaminated just by smelling or tasting it?

A: No. Many dangerous bacteria don't alter the smell, taste, or appearance of food — especially in the early stages. This means food that looks and smells fine could still make you sick, so following proper food handling and storage guidelines is more reliable than relying on your senses.

Q: What lifestyle habits increase my risk of food poisoning?

A: Heavy alcohol use and consuming a diet high in processed foods, refined sugar, and refined carbs damage your gut microbiome and immune system. These habits reduce your body's ability to defend against foodborne pathogens, even if you're exposed to the same bacteria as someone who stays healthy.

Q: How can I make my kitchen safer and lower my risk?

A: Use separate cutting boards for raw meat and produce, wash your hands thoroughly, store leftovers quickly in shallow containers, and use a thermometer to check that food reaches safe internal temperatures. These simple habits significantly reduce bacterial contamination in your home.

Q: What should I eat or avoid if I've recently been sick or stressed?

A: If your gut is compromised, avoid risky foods like deli meat, raw seafood, and soft cheeses. Focus on slowly sipping dextrose water or juice with pulp, and introduce whole fruits before starches. Supporting your gut first gives your body the backup it needs to handle microbial threats in food.

Sources and References

- [1, 2, 3, 4] UCLA, March 31, 2025
- [5] HuffPost, June 18, 2024
- [6] Lackawanna-Susquehanna Counties, April 30, 2024