

Food Contamination

Food safety involves protecting people from pathogens and chemicals in our food supply and—if that fails—preventing contaminated food from making people sick. Food supplies are susceptible to many different types of contaminants, for example:

Pathogens: disease-causing organisms such as bacteria, viruses, and parasites.

Food can be contaminated by pathogens at multiple points along the supply chain, including during production, processing, transport, storage, preparation and handling.

- Grasses are the natural diet of cattle. Feeding them grain, which is a standard practice in industrial operations, changes their gut environment in ways that increase populations of certain pathogens.¹
- Poultry processing plants can legally operate at very high speeds—up to 140 birds moving down the line per minute—allowing just 0.43 seconds to identify and remove contaminated carcasses before they enter the food supply.²
- Industrial meat, dairy, and egg operations generate manure in such large quantities that it becomes difficult to safely manage. Pathogens in manure can contaminate food supplies, for example, if manure contaminates groundwater and that water is used to irrigate food crops.³
- Pathogens and biological toxins in food generally cause illness within hours or days of exposure. Symptoms may include cramps, nausea, and vomiting.

Chemicals: most originate from human activities, such as pesticide use in agriculture and heavy metals from coal-fired power plants.

- Industries such as mining, coal burning, and plastics manufacturing release chemicals into our environment. Many are known to be harmful, while the health effects of thousands of others are not yet understood. Because these chemicals are present in air, water, and soil, they can make their way into our food supply.
- Some potentially harmful chemicals, such as caramel color in soft drinks, are present in food or beverages because manufacturers add them directly to the product.⁴
- Agricultural pesticides give farmers some control over crop pests, such as weeds and certain insects, at least in the short term. Residues of these chemicals can remain on the fruits and vegetables we eat. Some pesticides persist in the environment and can accumulate in animals, contaminating meat and seafood.⁵
- In the U.S., growth hormones are given to cattle. It is unclear what effect these hormones may have for people who consume beef and dairy products, though some studies suggest a possible link to increased cancer risk.⁶
- Most chemical contaminants in food are associated with illnesses that develop gradually and persist over time, such as cancer, usually as a result of longer-term, repeated exposures.

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