

## Chemical Contamination in Food

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### Introduction

Food contamination is a major problem since the high concentration of toxins in food offers severe health concerns. Protecting the population against the varying degrees of toxicity of tainted foods has become a difficult challenge. This article discusses the origins, forms, and health consequences of chemical contamination in food. Food contamination might be caused by naturally existing pollutants in the environment or by contaminants introduced purposefully by humans. Food contamination is also caused through the stages of food manufacturing, packaging, transportation, and storage. These chemical pollutants have serious consequences for human health, ranging from mild gastroenteritis to deadly instances of hepatic, renal, and neurological disorders. Chemical pollution is a clear indicator of the presence of chemicals where they should not be or are present in a higher quantity than that which is assigned as safe. Chemical risks are one of the leading sources of food contamination and foodborne illness outbreaks. Chemical pollutants come from a variety of sources, including soil, the environment, disinfection byproducts, personal care products, air, water, and packaging material. Almost all mass-produced daily items, such as disinfectants, plastics, detergents, deodorants, insecticides, and so on, are inhibited by chemical pollutants. Even the food we eat and the water we drink are vulnerable to the intrusion of pollutants in dangerous amounts. Food contamination, whether unintentional or deliberate, is an unpleasant act that has several negative consequences for human health. The symptoms of chemical contamination in food range from minor gastroenteritis to deadly instances of hepatic, renal, and neurological disorders. Food contamination frequently makes news in this context as a result of its negative repercussions. Food contamination frequently makes news in this context as a result of its negative repercussions. A total of 1527 outbreaks of foodborne diseases were witnessed in the United States between 2009 and 2010, resulted in 29,444 illness cases and 23 deaths.

### Reasons for Contamination

Environmental pollutants, food processing contaminants, prohibited adulterants and food additives, and migrants from packing materials are all examples of food contaminants. Environmental pollutants are impurities in water, air, or soil that are either introduced by humans or occur naturally. Unwanted chemicals produced in food during baking, roasting, canning, heating, fermentation, or hydrolysis is examples of food processing pollutants. Direct food contact with packing materials can result in chemical contamination as some hazardous chemicals migrate into meals. Furthermore, the use of unauthorized or incorrect additives may lead to food contamination.

### Chemicals Contamination

Contaminants may be found in raw foods as a result of contamination sources in the environment. Common causes of contamination during food transportation include diesel and gasoline vehicle exhausts, as well as cross-contamination in the vehicle being utilized for food delivery. Long-distance cargo ships are frequently polluted by chemicals used for disinfection or other sources. High barriers used to safeguard food during long-distance transit are not routinely evaluated for barrier qualities, making them a source of infection. Contaminants can enter during the cleaning phase of food production and preparation owing to residues left on the surface of food handling equipment from disinfectants and cleaning agents. Another source of impurities in the manufacturing process is heating treatment. The use of high cooking temperatures in homes and enterprises is a common food processing practice. The use of high temperatures for cooking, when combined with external variables, can result in the production of hazardous chemicals that have an influence on food safety and quality. During food processing procedures such as heating, roasting, grilling, baking, canning, fermentation, or hydrolysis, toxic chemicals such as nitrosamines, chloropropanols, acrylamide, furans, or PAHs are produced. Food packing has

numerous advantages, including as physical protection and improved food safety; yet, it can still represent a hazard. To improve the characteristics of packing materials, packaging procedures utilize a variety of additives such as stabilizers, antioxidants, plasticizers, and sliding agents. However, any direct or indirect interaction between the food and the packing material may result in the transfer of these chemicals from the container into the meal. This is referred to as migration. Corrosion is a risk of food contamination when metallic cans are used in packaging owing to the migration of metallic ions to food.

#### **REFERENCES**

1. Schafer K (2002) Persistent toxic chemicals in the US food supply. *J. Epidemiol. Commun. Health* 56:813-817.
2. Schantz S, Gardiner J, Gasior D, McCaffrey R, Sweeney A, et al. (2004) Much ado about something: The weight of evidence for PCB effects on neuropsychological function. *Psychol. Schools* 41:669-679.
3. Shi P, Zhou S, Xiao H, Qiu J, Li A, et al. (2018) Toxicological and chemical insights into representative source and drinking water in eastern China. *Environ. Pollut* 233:35-44.
4. Vogt R, Bennett D, Cassady D, Frost J, Ritz B, et al. (2012) Cancer and non-cancer health effects from food contaminant exposures for children and adults in California: a risk assessment. *Environ. Health* 11:83.
5. Zheng N, Wang Q, Zhang X, Zheng D, Zhang Z, et al. (2007) Population health risk due to dietary intake of heavy metals in the industrial area of Huludao city, China. *Sci. Total Environ* 387:96-104.