



FOOD POISONING: CAUSES AND PREVENTION

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Abstract. *This article examines the primary causes of foodborne illnesses, including bacterial, viral, parasitic, and chemical contamination. It also analyzes risk factors associated with improper food handling, storage, and preparation. The study emphasizes preventive strategies such as hygiene practices, food safety regulations, temperature control, and consumer education. By highlighting evidence-based prevention measures, the research aims to reduce the incidence of foodborne diseases, protect public health, and promote safe food consumption.¹*

Keywords: *Food poisoning; foodborne illness; bacteria; viruses; chemical contamination; food hygiene; prevention; public health; food safety; temperature control; consumer awareness.*

Introduction. Foodborne illnesses affect millions of people globally each year, leading to hospitalizations, economic losses, and in severe cases, death. Food poisoning occurs when pathogenic microorganisms, toxins, or chemical substances enter the human body through contaminated food. Common symptoms include nausea, vomiting, diarrhea, abdominal pain, and fever. Understanding the causes of food poisoning and implementing effective preventive measures are crucial for safeguarding public health. This research analyzes the main factors contributing to foodborne illnesses and provides strategies to minimize their occurrence.

Main Body. Causes of Food Poisoning. Food poisoning can arise from multiple sources. Bacterial contamination is among the leading causes, with pathogens such as *Salmonella*, *Escherichia coli*, *Listeria monocytogenes*, and



Clostridium perfringens. Improper cooking, cross-contamination, and inadequate storage contribute to bacterial proliferation. Viral contamination can occur through norovirus or hepatitis A, often transmitted by infected food handlers or contaminated water. Parasitic contamination, including *Giardia*, *Cryptosporidium*, and *Toxoplasma gondii*, can be transmitted via raw or undercooked meat, contaminated water, or unwashed produce. Chemical contamination from pesticides, heavy metals, or food additives beyond safe limits can also lead to acute or chronic poisoning.

Risk Factors. Several factors increase the likelihood of food poisoning. Poor personal hygiene of food handlers, inadequate cooking or reheating, improper food storage and refrigeration, cross-contamination between raw and cooked foods, and consumption of expired or spoiled food products are the most common contributors.

Prevention Strategies. Preventing foodborne illnesses requires an integrated approach. Proper hygiene practices, including regular hand washing, use of gloves, and sanitization of kitchen surfaces, reduce microbial contamination. Safe food storage and temperature control, such as refrigeration below 5°C and cooking foods to appropriate internal temperatures, prevent bacterial growth. Food safety regulations, inspections, and hazard analysis frameworks ensure compliance with standards. Consumer education through awareness campaigns about safe food handling, preparation, and storage is essential in reducing the incidence of food poisoning.

Emerging Technologies in Food Safety. Modern tools, including rapid microbial detection systems, blockchain for supply chain transparency, and IoT-enabled temperature monitoring, are increasingly applied to ensure food safety. These technologies allow early detection of contamination and real-time monitoring of storage and transportation conditions, thereby reducing the risk of foodborne illnesses.

Conclusion. Food poisoning remains a significant public health challenge worldwide. Bacterial, viral, parasitic, and chemical contaminants, combined with poor hygiene and improper food handling, are the primary causes. Preventive measures, such as proper sanitation, temperature control, regulatory compliance,



consumer education, and advanced monitoring technologies, are crucial for reducing foodborne illnesses. Ensuring food safety requires the joint efforts of food producers, regulatory authorities, and consumers to protect public health and promote safe dietary practices.

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