

# FACTFILE: GCE NUTRITION & FOOD SCIENCE

## FOOD SAFETY



## Food Safety

### Learning outcome

- Demonstrate knowledge and understanding of food safety as a public health priority as defined by the World Health Organisation (WHO).

### Course content

#### **Food safety: a public health priority**

Access to sufficient and safe food is a basic human necessity, essential for creating a world without hunger and reducing poverty worldwide. While everyone is exposed to foodborne health risks, it is the poor who are most exposed and vulnerable to these risks. Foodborne and waterborne diarrhoea diseases kill an estimated 2.2 million people annually, most of whom are children. Diarrhoea is the most common foodborne illness caused by pathogens, but other serious consequences include organ failure, brain and neural disorders, reactive arthritis and death. Chemical food contamination may cause non-communicable diseases, in particular cancer, and can also affect reproductive health and the immune system.

Serious outbreaks of foodborne disease have been documented on every continent in the past decade, illustrating the significance of these diseases. They also have negative economic consequences by imposing a substantial burden on healthcare systems, markedly reducing economic productivity and threatening livelihoods.

Traditionally, the term “foodborne disease” has been used for illnesses caused by microorganisms. However in order to address the full scope of causative agents, of a bacterial, viral, prionic, parasitic or chemical nature, the term foodborne disease is used by the World Health Organisation (WHO) in a wide all-encompassing sense. It includes foodborne zoonosis (disease transmitted to humans from animals) and other risks associated with food along the entire food chain, as well as new and emerging health issues associated with food.





## Food Safety Challenges

- **Poverty:** people living in poverty are the most exposed to foodborne health risks.
- **Demographic and environmental developments:** an ageing population, increasing migration, emergencies, climate change and extreme weather events are putting more people at risk.
- **Changing lifestyles:** urbanisation, travel, eating more food outside the home and new food trends are also increasing exposure to the risk of foodborne disease.
- **Globalisation:** allows for a wider variety of food available to consumers, and offers opportunities for exporting countries. However the food chain becomes longer and more complex, creating an environment where known and new foodborne diseases, hazards and risks may spread more easily, and facilitates the long-distance transmission of pathogens.
- **Antimicrobial resistance:** The high volume of antibiotics in food producing animals contributes to the development of antimicrobial resistant bacteria, particularly in settings of intensive animal production. Antimicrobial resistant infections in humans can cause longer illnesses, increased frequency of hospitalisation, and treatment failures that can result in death.
- **Population growth:** As the world's population grows, the intensification and industrialisation of agriculture and animal production to meet increasing demand for food creates both opportunities and challenges for food safety.
- **Climate change:** changes in weather patterns and temperature are predicted to impact negatively on the safety of food production, storage and distribution.
- **Food integrity:** globalisation of the food supply chains has increased fraudulent practices such as waste diversion and food adulteration. These

crimes can be seriously harmful to the food industry.

- **Environmental pollution:** Pollutants can reduce food safety. For example, microplastics and microbeads polluting the world's seas can be consumed by fish and get into the food chain.
- **Global inequality:** there are still many countries where food is produced in a high-risk environment. For example, where unsafe water is used for the cleaning and processing of food; where there is unsafe use of agricultural chemicals or where there is poorly enforced regulatory standards around food production.



These challenges put greater responsibility on food producers and handlers to ensure food safety. Local incidents can quickly evolve into international emergencies due to the speed and range of product distribution.

The provision of a safe and sufficient food supply are important in the broader context of health security. Health security, i.e. the protection of people from urgent threats to their health, has been identified by WHO as one of the five core areas of their work. Ensuring that the food we eat is safe and protected from contamination is an essential element of health security. Food safety is a critical component for sustainable development. Safer food contributes to less illness, and hence increased productivity and income.



## Global Situation

Unsafe food poses global health threats, endangering everyone. Where food supplies are insecure, people tend to shift to less healthy diets and consume more unsafe foods in which chemical, microbiological and other hazards pose health risks. WHO wants governments to make food safety a public health priority to ensure that food producers and suppliers, along the whole food chain, operate responsibly and supply safe food to consumers.

### Everyone can contribute to making food safe

#### Policy-makers can:

- respond to and manage food safety risks along the entire food chain, including during emergencies
- think globally and act locally to ensure the food produced domestically is safe internationally

#### Food handlers and consumers can:

- be aware of the food they use by reading labels on food packages, making informed choices and becoming familiar with common food hazards
- handle and prepare food safely



### The WHO response

WHO aims to facilitate global prevention, detection and response to public health threats associated with unsafe food. They have adopted a 'farm to fork' approach in order to identify and focus efforts on those points of the food production chain where contamination of food is most likely to occur or most likely to be prevented. To reduce the burden of foodborne diseases, WHO is working with countries to build and strengthen national food safety systems in order to effectively manage their food supply.

### Food safety in Europe

Over the last few decades a succession of high profile food scares has shaken consumer confidence in the safety of food products. In the EU these food scares were the major driving force for the establishment of food safety legislation in order to restore confidence in the food supply chain.

The EU's food safety policy covers food from farm to fork. It is designed to guarantee:

- safe, nutritious food and animal feed
- high standards of animal health and welfare and plant protection
- clear information on the origin, content/labelling and use of food

### EU strategies

#### • Early warning system

The EU operates a rapid early warning system (RASFF) to protect people from food that does not comply with European food safety rules. When a threat is spotted, alerts go out across the EU.

#### • Traceability and risk management

Whenever significant outbreaks of animal disease or food poisoning affect European consumers, EU authorities can trace the movement of food products all the way up the production chain.



#### • Basing decisions on sound science

Science underpins EU food safety policy. The European Food Safety Authority (EFSA) provides the European Commission with independent scientific advice when dealing with a food safety scare.

### What is being done in the UK?

The Food Standards Agency (FSA), an independent Government Department, is responsible for food safety in the UK. The FSA uses its expertise and

influence so that consumers can trust that the food they buy and eat is safe and honest. They provide local authorities with guidance and frameworks to ensure they are consistent when enforcing the relevant laws for food and animal feed.

The Northern Ireland Food Advisory Committee acts as an independent advisory board to the FSA. Its role is to advise the Agency on food safety and standards issues, with emphasis on Northern Ireland.



## Conclusion

Food safety is only ensured by the shared responsibility of everybody involved with food from the professional to the consumer. All along the food chain, various procedures and control mechanisms are implemented to assure that the food which reaches the consumer's table is fit for consumption and that the risks of contamination are minimised so that everyone benefits from safe food. However, zero risk within food is difficult to implement and it is also important to be aware that the best legislation and control systems cannot fully protect consumers against those with criminal intentions.

### Summary of key facts

- Access to sufficient amounts of safe and nutritious food is key to sustaining life and promoting good health.
- Unsafe food containing harmful bacteria, viruses,

parasites or chemical substances, causes more than 200 illnesses, ranging from diarrhoea to cancers.

- Foodborne and waterborne diarrhoeal diseases kill an estimated 2.2 million people annually, including many children.
- Food safety, nutrition and food security are inextricably linked. Unsafe food creates a vicious cycle of disease and malnutrition, particularly affecting infants, young children, elderly and the sick.
- Foodborne diseases impede socioeconomic development by straining health care systems and harming national economies, tourism and trade.
- Food supply chains now cross multiple national borders. Good collaboration between governments, producers and consumers helps ensure food safety.



## Revision Questions

- 1 Explain why The World Health Organisation considers food safety to be an important health priority.
- 2 Discuss four challenges to global food safety.

