



Food-borne Zoonoses

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1. What are **zoonoses**?

Zoonoses are infections or diseases that can be transmitted directly or indirectly between animals and humans, for instance by consuming contaminated foodstuffs or through contact with **infected animals**.

About 75% of the new diseases that have affected humans over the past 10 years (such as the West Nile Virus) have originated from animals or products of animal origin.

Food-borne zoonoses are a significant and widespread public health threat. About 315,000 human cases are confirmed in the European Union each year, but the real number is likely to be much higher.

Research indicates that between one third and one half of all human infectious diseases have a zoonotic origin, that is, are transmitted from animals.

The European Food Safety Authority's independent scientific advice on the food safety and animal health-related aspects of zoonotic diseases, supported by data collected in Member States, helps European decision-makers in setting policies and making decisions to protect consumers from this public health threat.

2. What are **food-borne zoonoses**?

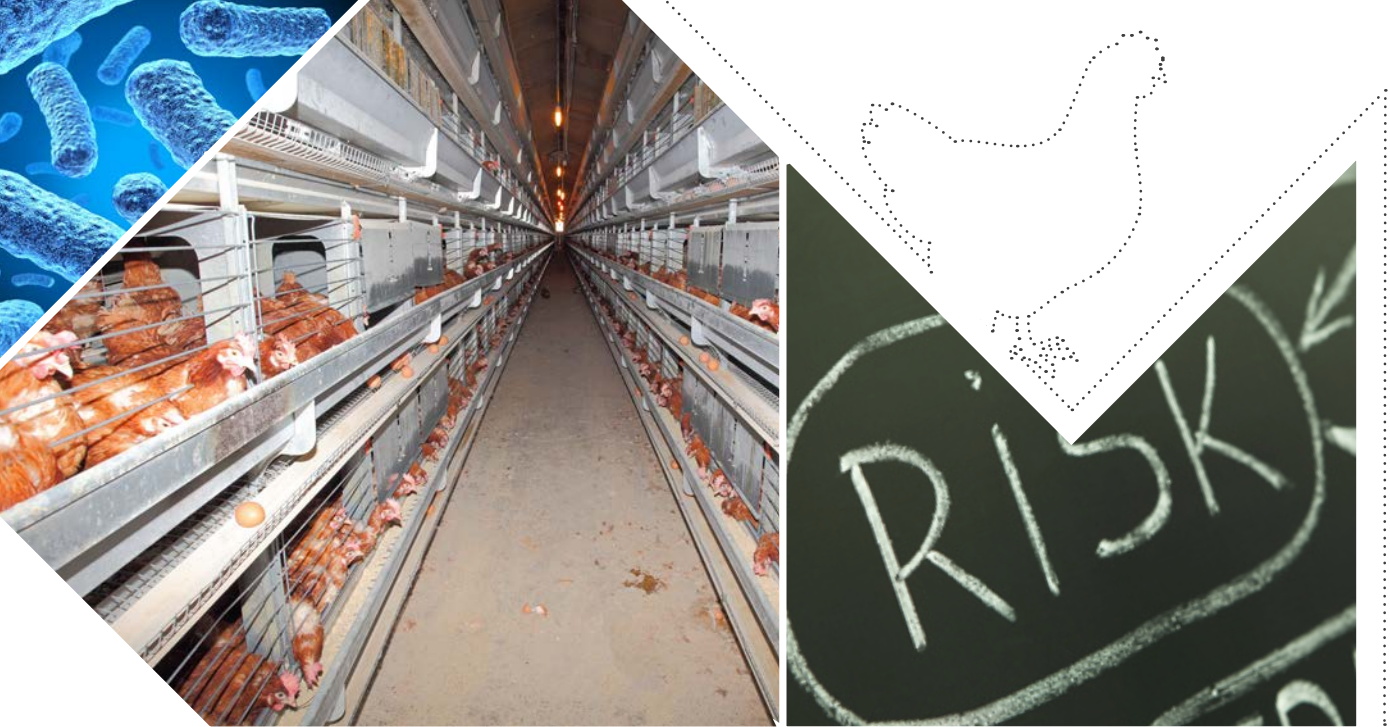
Food-borne zoonotic diseases are caused by consuming food or drinking water contaminated by pathogenic (disease-causing) micro-organisms such as bacteria and their toxins, viruses and parasites.

The most common micro-organisms in the European Union (EU) causing food-borne diseases are *Campylobacter*, *Salmonella* and *Escherichia Coli*.

Many of these micro-organisms are commonly found in the intestines of healthy food-producing animals. The risks of contamination are present from farm to fork and require prevention and control throughout the food chain.

The severity of these diseases in humans varies from mild symptoms to life-threatening conditions.

Safe handling of raw meat and other raw food ingredients, thorough cooking and good kitchen hygiene can prevent or reduce the risk posed by these micro-organisms.



3. What is **EFSA's role in the battle** against **food-borne zoonoses** in the EU?

Food-borne zoonotic diseases are a significant and widespread global public health threat. In the EU, about 315,000 human cases are reported each year, but the real number is likely to be much higher.

EFSA's scientific work and advice on zoonoses support the European Commission, European Parliament and EU Member States in making effective risk management decisions and provide a sound foundation for policies and legislation to protect consumers in the European Union.

EFSA's work includes:

- **Annual monitoring:** The occurrence of food-borne zoonoses in the EU is monitored and analysed in annual EU Summary Reports prepared by EFSA and the European Centre for Disease Prevention and Control (ECDC). The monitoring is based on comparable data collected by EU Member States on the prevalence of *Salmonella*, *Campylobacter* or other micro-organisms in humans, animals and food. The annual reports provide the Commission and the Member States with up-to-date information on the current situation.
- **Analysis of risk factors:** EFSA and its Scientific Panels identify risk factors that contribute to the prevalence of zoonotic micro-organisms in animal populations and in food based on Member State data and other relevant information.

EFSA's main role is to assess risks associated with the EU food chain, ensuring a high level of consumer protection and animal health.

- **Risk assessments:** EFSA's Scientific Panels carry out assessments of the risks for public health from infected animals and give advice about how new mitigation and control options will impact on these bacteria.
- **Recommendations and advice on reduction measures:** EFSA's scientific advice helps EU decision-makers to understand the anticipated public health impacts of different control measures. The data collected by EU Member States serve as a basis for the EU to set targets for the reduction of these micro-organisms in food-producing animals and foodstuffs. The impact of the reduction programmes on the actual prevalence of zoonoses in animals and foods and related human health cases are then monitored and analysed in the annual EU Summary Reports.

4. Fighting *Salmonella* - cooperation in the EU

To protect consumers from food-borne zoonotic diseases, the EU has adopted an integrated approach to food safety from the farm to the fork. This approach consists of both risk assessment and risk management measures involving **all key actors**: EU Member States, European Commission, European Parliament, EFSA and ECDC. The approach is supported by timely and effective risk communication activities.

EU hygiene legislation sets out hygiene requirements for food producers and operators and provides rules for official controls of fresh meat, milk and other foods. This is an important regulatory basis for minimising the prevalence of food-borne diseases throughout the food chain.

In 2003, the EU set up an extended control programme for zoonoses, considering *Salmonella* as a priority. Enhanced *Salmonella* control programmes in poultry were implemented in all EU Member States. Targets were set for the reduction of *Salmonella* in poultry flocks (e.g. laying hens, broilers, turkeys) and pigs. Restrictions were also imposed on the trade of products from infected flocks.

EFSA's role in protecting consumers from this public health threat consists of providing independent scientific support and advice on the human health and food safety-related aspects of *Salmonella* as well as monitoring the impact of reduction targets and other control options.

In the EU Summary Report on zoonoses and food-borne outbreaks, ECDC and EFSA provide yearly updates on the progress made in meeting the reduction targets for *Salmonella*. These reports analyse the data from the monitoring of *Salmonella* in animals, food and humans collected by Member States. Between 2004 and 2012, the reports indicated a clear downward trend for *Salmonella* with respect to human cases, human outbreaks and its prevalence in poultry flocks.

A coordinated approach by the EU and Member States helped to reduce human *Salmonella* cases by almost one-half over a five-year period (2004-2009).

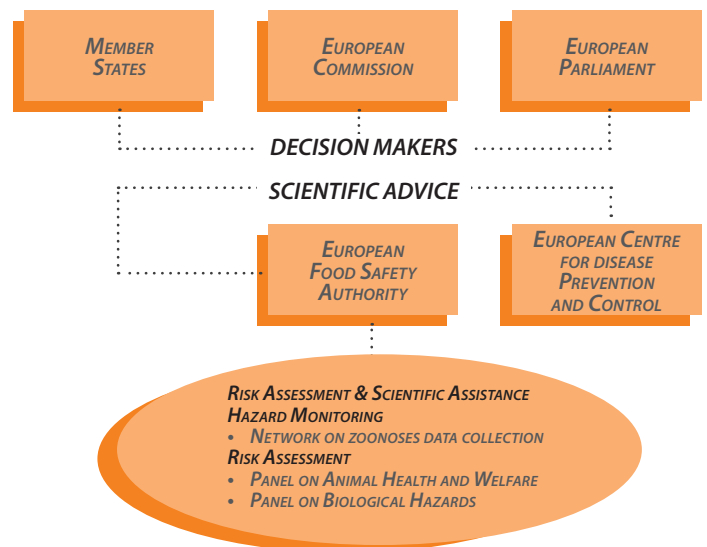


Diagram: EU actors dealing with zoonoses





5. EFSA cooperates with **key actors** on food-borne zoonoses

EFSA is assisted in its work in the area of food-borne zoonoses by the:

- **Network on zoonoses data collection:** a pan-European network of national representatives of EU Member States and other reporting countries, as well as the World Health Organisation (WHO) and World Organisation for Animal Health (OIE). Members of the Network assist EFSA by gathering and sharing information on zoonoses in their respective countries.
- **Panel on Biological Hazards and Panel on Animal Health and Welfare** composed of independent experts carrying out risk assessments and providing scientific advice to EU risk managers on zoonoses.

EFSA uses data collected by Member States to monitor and analyse the situation with regard to zoonoses, antimicrobial resistance, and food-borne outbreaks across Europe. The results are presented in annual EU Summary Reports on zoonoses, food-borne outbreaks and antimicrobial resistance, and in other reports on specific zoonoses issues. The annual EU Summary Reports are prepared in collaboration with ECDC.



6. Joint reporting on **antimicrobial resistance**

Since **2011**, EFSA and ECDC have been compiling **joint annual reports** on antimicrobial resistance in zoonotic bacteria affecting humans, animals and food.

Antimicrobial resistance refers to the ability of micro-organisms to withstand antimicrobial treatments. The overuse or misuse of antibiotics has been linked to the emergence and spread of micro-organisms which are resistant to them, rendering treatment ineffective and posing a serious risk to public health. Resistant bacteria can spread through many routes. When antimicrobial resistance occurs in zoonotic bacteria present in animals and food it can also compromise the effective treatment of infectious diseases in humans and in animals.

These reports make an important contribution to work being carried out at European level and assist the European Commission as it develops its proposals for action to fight antimicrobial resistance.

EFSA's Scientific Panel on Biological Hazards utilises this data along with other information to provide scientific advice on antimicrobial resistance. The Panel carried out a risk assessment on the role of food as a vehicle for transmitting antimicrobial resistant bacteria to humans.