German Federal Institute for Risk Assessment

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Foot-and-mouth disease in cloven-hoofed animals: no hazard to humans through food consumption

Foot-and-mouth disease (FMD) is a highly contagious viral disease in cloven-hoofed animals (especially cattle, sheep, goats and pigs), which can also affect numerous zoo and wild animal species. Germany had been considered FMD-free since 1988, but in January 2025 the virus was detected in a water buffalo in Brandenburg. Human infections with the foot-and-mouth disease virus are very rare, have so far been mild, and were the result of direct and intensive contact with diseased animals. Neither infections and illnesses in humans through the consumption of food nor human-to-human transmission are known.

Consuming food derived from infected animals – for example in the form of pasteurised milk and products made from it such as yoghurt or ice cream or thoroughly cooked meat – is not likely to result in an FMD infection. However, the German Federal Institute for Risk Assessment (BfR) generally advises against consuming raw milk, as it has not been heated before consumption and may also be contaminated with other pathogenic agents.

Foot-and-mouth disease (FMD) is a highly contagious disease that affects cloven-hoofed animals such as cattle, sheep, goats, and pigs as well as various zoo and wild animals. Affected animals often have high fever and blisters in the mouth and hoof areas. The disease is caused by the FMD virus, which is mainly found in different countries in Africa and Asia. In Germany, FMD is a notifiable animal disease and when it occurs, it is combatted in accordance with the relevant legislation.

The FMD virus is largely harmless to humans. In the past, only very few individual cases following direct contact with infected animals have been described. These cases manifested as mild febrile general illnesses with subsequent blistering of the mouth, fingers and toes, which healed within a few days. Therefore, this disease should not be considered a classic zoonosis. Neither infections and subsequent diseases via the consumption of food nor human-to-human transmission are known to date. Between 1921 and 2007, only around 40 human cases of human infection with the FMD virus were reported worldwide. Even during

a major FMD outbreak in the UK in 2001, which encompassed over 2000 outbreaks in livestock, humans were not infected.

The Robert Koch Institute (RKI) points out that foot-and-mouth disease is often confused with hand-foot-and-mouth disease (HFMD) due to the similar symptoms. The latter is particularly common in small children. However, the diseases are in no way related to each other; the HFMD pathogen occurs exclusively in humans.

The FMD virus is highly resistant to desiccation, cold, and high salt concentrations. In raw or insufficiently heated milk as well as in frozen and cured pork, the virus can remain infectious for months under certain conditions. According to current scientific knowledge, indirect transmission of FMD to animals via feed cannot be ruled out.

Consumers should always follow the basic rules of kitchen hygiene, also with regard to other pathogens that may be present. This includes maintaining the cold chain and avoiding cross contamination. The latter refers to the transfer of pathogens from one foodstuff to another. In addition, meat should be heated thoroughly so that all parts of the piece of meat reach a temperature of at least 70 °C for a minimum of two minutes.

To date, no human cases of foot-and-mouth disease have been reported as a result of consuming pasteurised milk or dairy products. Raw milk, on the other hand, can generally be contaminated with pathogenic agents. Particularly sensitive population groups such as children, pregnant women, or elderly and sick persons should therefore generally refrain from consuming raw milk that has not been boiled. However, healthy adults are also at increased risk of infection with various pathogens if they consume raw milk that has not been boiled.

Further information on the BfR website on foodborne infections
https://www.bfr.bund.de/en/foodborne_infections-317029.html

Questions and answers about raw milk
https://www.bfr.bund.de/en/avoiding_infections___what_should_be_considered_when_consuming_raw_milk_-317046.html

Questions and answers about foodborne infections in private households
https://www.bfr.bund.de/en/foodborne_infections_in_private_households___identifying_sources_and_avoiding_risks-194152.html

About the BfR

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. The BfR advises the Federal Government and the States ('Laender') on questions of food, chemicals and product safety. The BfR conducts independent research on topics that are closely linked to its assessment tasks.

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