

Anthrax

Susceptible species

Anthrax is a contagious and often fatal animal disease. It is transmissible to humans (zoonosis). Anthrax can affect herbivorous animals particular cattle, sheep, goats, pigs and horses are frequently affected. Wild carnivores can become infected by eating infected carcasses. Domestic and wild ruminants are highly sensitive to anthrax. Pigs, carnivores and humans are rather moderately susceptible and birds (exception ostrich) are known to be as almost insensitive to anthrax.

Distribution area

Anthrax occurs worldwide, preferably in warmer climates (Southeast Europe, South America, Africa, Southeast Asia). Infected ruminants are usually found in cattle farms close to burial sites and former tannery sites. Anthrax is very rare in industrialised countries. In Germany anthrax occurs only sporadically and predominantly in river plains affected by frequent flooding. The number of cases of anthrax has fallen considerably in recent decades because animals affected by anthrax are destroyed in rendering plants, the import of hides and bones is monitored and the import of bone, meat and animal meal is banned. Between 1960 and 1990 there were 911 cases reported, but by September 2019 only 9 cases had been reported. The last outbreak took place in Saxony-Anhalt in 2014.

Causative agent

The disease is caused by the spore- and toxin-forming bacterium *Bacillus anthracis*. The pathogen forms permanent spores, which can survive for decades in the soil capable of infection. Anthrax spores are not destroyed by rotting, drying or tanning of skins.

Transmission

Infection usually does not occur directly from animal to animal, but via food containing pathogens, which is contaminated with spores from the soil. Anthrax can still be introduced by importing raw animal products from outbreak areas. In particular, hides or skins and the hair, wool or bristles obtained from animals can be contaminated with the pathogen. Humans are an extremely rare source of infection. Only in the advanced stage of the disease is infection possible via nasal and pharyngeal secretions, sputum, vomit, lung ejection, stool and tissue, e.g. scab.

Clinical pictures

Anthrax is rarely detected with certainty in live animals. The animals develop intestinal anthrax mainly after ingestion of food containing the pathogen, which quickly leads to death under the picture of sepsis. Similar to poisoning, dark, poorly coagulating blood can escape from the body orifices. In isolated cases, breathing difficulties due to pharyngitis as well as discoloration and swelling in the area of the larynx can be observed. The symptoms in

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humans are also dependent on the location where the pathogen enters the body. A distinction is made between skin, lung and intestinal anthrax.

Further information can be found under:
["RKI-Ratgeber"](#) (in German language only)

Diagnostics

The isolation and identification of the pathogen by molecular biological detection of two *B. anthracis*-specific virulence plasmids is carried out in the responsible competent state testing laboratory. The samples are sent to the National Reference Laboratory at the FLI for confirmatory testing.

Similar disease pictures

Pasteurellosis, intoxication, Black-leg, Clostridium septicum infection

Control

In Germany, control is carried out in accordance with the Regulation on protection against anthrax and intoxication. Strict control measures apply worldwide. As a rule, animals are not treated. If an outbreak or suspicion of an outbreak of anthrax is officially established in an animal population, the competent authority may order the killing and destruction of the animals infected or suspected of being infected. These animals must not be killed by withdrawal of blood. The skinning of dead or killed animals shall be prohibited. In humans, antibiotic therapy shall be started as soon as possible if there are reasonable grounds for suspecting infection. The decision on this and on the dosage and duration is made by the attending physician.