

What is rabies?

- Rabies virus, together with the European bat lyssaviruses 1 and 2, belongs to the genus *Lyssavirus*, family *Rhabdoviridae*.
- Rabies is a fatal zoonosis, and the cat is considered as a high-risk species for transmission to humans in some European countries.
- Rabies occurs worldwide, with niche exceptions. Large regions in Europe are now free of terrestrial rabies, as a result of wildlife vaccination programmes. The red fox is the main virus reservoir in Europe.
- Most recent cases in Western Europe could be traced to illegally imported, infected pets from rabies-endemic regions in Africa.
- The virus is readily inactivated by detergent-based disinfectants.

Infection

- Rabid animals are the only source of infection.
- Virus is shed in the saliva for some days before the onset of clinical signs.
- The average incubation period is two months, but may vary from 2 weeks to several months, depending upon the site of infection (bite, scratch). The greater the distance between the entry site and the central nervous system, the longer the incubation period; the greater the density of innervation of the inoculated tissue, the shorter the incubation period.
- Although cats can be infected with rabies virus or other lyssaviruses from bats, the risk is low.

Clinical signs

- Any unexplained aggressive behaviour or sudden behavioural change must be considered suspicious.
- The disease manifests itself as a furious and a dumb form. About 90% of rabid cats show the furious form.

- Due to the encephalitis, cranial nerve and forebrain involvement is seen: absent/reduced palpebral, corneal and pupillary reflexes, strabism, dropped jaw, salivation, seizures, twitching, tremors, disorientation, aimless pacing, exaggerated emotional responses (irritability, rage, fear, photophobia), as well as ataxia and paralysis, ultimately followed by coma and death from respiratory arrest.
- Cats often die after a clinical course of 3-4 days.

Diagnosis

- A definite rabies diagnosis is obtained by post-mortem laboratory investigation, preferably of brain tissue.
- In case of suspicion, the cat should be kept in isolation, and veterinary services should be contacted.
- Serological tests are used for post-vaccinal control, especially in the context of international travel.

Disease management

- Post-exposure vaccination depends on the national public health regulations and is forbidden in many countries.
- For public health reasons, treatment of rabid cats is not considered.
- In rabies-endemic areas, stray cats should be always approached with caution; handling and nursing of rescued animals should be considered hazardous, even if they appear healthy.

ABCD Vaccination recommendations

- Feline rabies is controlled mostly by inactivated, adjuvanted vaccines; a single vaccination induces a long-lasting immunity.
- Cats respond better than dogs, and more than 97% develop antibody titres ≥ 0.5 IU/ml after the first vaccination, a value correlating with protection.
- Kittens should be vaccinated at 12 to 16 weeks of age and be revaccinated one year later.
- Some vaccines protect against virulent rabies virus challenge for 3 years or longer, but national or local legislation may call for annual boosters.



Courtesy of ERZ-Afssa Nancy (France)

■ Anisocoria in a cat with rabies.



Courtesy of Malene Thyssen / Wikimedia

■ The red fox (*Vulpes vulpes*) is the main reservoir of rabies in Europe.



© Courtesy of ERZ-Afssa, Nancy, France

■ Any aggressive behaviour expressed by a cat must lead to a suspicion of rabies.



Courtesy of Artur Borkowski, Warsaw University

■ In the last phase of rabies, paralysis reaches also cranial nerves (note the anisocoria).



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■ Paralysis of facial nerves in end-stage feline rabies.