What is rabies?

- Rabies virus, together with the European bat lyssaviruses 1 and 2, belongs to the genus *Lyssavirus*, family *Rhabdoviridae*. There is increasing evidence that lyssaviruses can circulate within bat populations without causing disease.
- 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. However, 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 and from South-East Europe.
- The virus is readily inactivated by most of disinfectants.

Infection

- Rabid animals are the only source of infection (bite, scratch).
- Virus is shed in the saliva for some days before the onset of clinical signs.
- The average incubation period is 2 months, but may vary from 2 weeks to several months, depending on the viral dose and the site of infection.
- Although cats can be infected with lyssaviruses from bats, the risk of infection is very low.

Clinical signs

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

- Due to the encephalitis, signs of cranial nerve and forebrain involvement are 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 can only be obtained by post-mortem laboratory investigation, preferably of brain tissue.
- Where rabies is suspected, the cat must be kept in isolation and the case reported to the veterinary services.
- In the context of international travel, antibody tests are used for post-vaccinal control.

Disease management

- Post-exposure vaccination depends on the national regulations but is usually not performed in cats due to public health risk.
- For public health reasons, treatment of rabid cats is not allowed.
- 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.
Rabies in cats

Vaccination

■ Rabies is controlled by vaccination of cats at risk (with outdoor access, especially in endemic areas). Non-adjuvanted vaccines are preferred to reduce the risk of injection-site sarcomas.

■ Cats have a better immune response to rabies vaccination than dogs. After a single vaccination more than 97% of cats develop antibody titres ≥0.5 IU/ml, the internationally accepted threshold for protective antibody titres.

■ Kittens should be vaccinated at 12 to 16 weeks of age, followed by a booster one year later.

■ Although some vaccines protect against virulent rabies virus challenge for 3 years or longer, national or local legislation may call for annual boosters.

■ Anisocoria in a cat with rabies.

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

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

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

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