The disease

1. What is rabies?
Rabies is a viral disease that affects the central nervous system of warm-blooded animals, principally mammals, including humans. The virus is present in the saliva of infected animals. It is generally transmitted by the bite of an infected animal — most commonly dogs and other carnivores. The incubation period varies, from several weeks to several months, but once the symptoms appear the disease is always fatal, in animals as well as in humans.

2. What is the rabies virus?
The rabies virus belongs to the genus Lyssavirus, a group of viruses responsible for causing encephalitis. There are several strains of the classic rabies virus, each of which is generally confined to a major species as a reservoir. Rabies is most often found in domestic dogs, less often in cats, and — depending on the continent — may also be found in various other carnivore species (such as foxes and jackals, etc) or in chiroptera (bats).

3. Where is the disease found?
Rabies is present on all continents except Antarctica. Some countries have implemented stringent disease-control measures and have succeeded in eradicating the disease to meet the OIE requirements for rabies-free status. In other countries, the disease remains endemic with rabies being present either in dogs or in wild animal hosts (e.g. bats).

4. What is the extent of rabies worldwide?
Every ten minutes someone dies from rabies. Each year, rabies kills as many as 70 000 people worldwide. It especially strikes children in developing countries, with Africa and Asia being the worst hit regions. In countries where people are still dying from the disease, dogs are the main vector of rabies. Controlling the disease in dogs, and particularly in stray dogs, must therefore be the first priority to prevent lethal cases in humans.

5. How is rabies transmitted?
Rabies is transmitted through the saliva of an infected animal. Infection occurs primarily through bite wounds, or when infected saliva enters an open cut or wound or mucous membrane, such as those in the mouth, nasal cavity and eyes. More than 95% of human cases are due to bites by infected dogs.

6. What is the incubation period for rabies?
The period of time before clinical signs appear in an infected animal can vary from several weeks to six months, depending on the strain of the virus, the animal species, the individual and the point of entry in the body. The disease can therefore be transmitted to other animals and humans through the saliva of an infected animal, sometimes even before the infected animal shows any clinical signs of the disease, constituting an insidious threat to anyone coming into contact with that animal.

7. What are the clinical signs of rabies in animals?
The clinical signs of rabies vary, depending on the effect that the virus has on the brain. In its classical form, the disease is expressed by sudden behavioural changes. Infected animals, especially wild animals, can lose their natural fear of other animals and humans, allowing them to come into unusually close proximity and contact, especially in the case of humans. As the disease evolves, it causes progressive paralysis leading to death. In some cases, however, an animal may die rapidly without showing significant clinical signs.

8. What should you do if a domestic animal is bitten or scratched by another animal, whether wild or domestic?
Any bite or scratch by a domestic or wild animal must be investigated. The incident must be reported to a veterinarian, who will then take the appropriate measures.
The OIE’s strategy in the fight against rabies

9. What are the public health risks associated with this disease?

Rabies is regarded as one of the world’s most important zoonoses (diseases that are naturally transmissible from animals to humans). The occurrence of rabies in domestic dogs poses a threat to humans and this is still a major concern in many developing and in-transition countries. The disease can also have economic consequences in some countries, when it affects livestock (such as cattle, horses, small ruminants, etc.).

10. What are the OIE’s aims for rabies control?

The OIE’s aims are not only to encourage transparency among Member Countries in notifying the disease but also to encourage governments to invest in priority control programmes, such as rabies prevention programmes. Vaccinating dogs against rabies is particularly vital, since dogs are still the main reservoir and the main vector of this disease for humans.

11. Must cases of rabies be notified to the OIE?

Rabies is on the list of diseases in the OIE Terrestrial Animal Health Code. It is therefore compulsorily notifiable to the OIE by the veterinary authorities of the Member Country concerned, and comes under the responsibility of the Member Country’s Delegate to the OIE.

12. What are the prevention and control measures for rabies?

In countries where the disease is endemic, measures are taken to reduce the risk of infection in populations susceptible to the disease (such as wildlife, stray animals, and domestic animals under their owner’s control) and to create a buffer between the animal source of the disease and humans. These measures include:

- surveillance and reporting of suspected cases of rabies in susceptible animals
- research into the dynamics of the disease, suitable vaccines and vaccine delivery methods for target populations
- vaccination programmes for domestic animals, especially dogs, by injection
13. What is the purpose of rabies vaccination programmes?

Vaccination of dogs is the preferred method of controlling and eliminating rabies worldwide. For ethical, ecological and economic reasons, the culling of animals that are potential vectors cannot be considered as the priority measure for the control and eradication of rabies. All successful rabies eradication campaigns have included measures to control and reduce stray dog populations and to vaccinate all dogs kept under their owner’s control.

Vaccination campaigns are set up with the aim of achieving coverage of around 70% of the canine population in a zone where rabies is endemic.

In wild animals, oral immunisation, using vaccine-containing baits, has produced excellent results in some animal species (foxes, raccoons, skunks, etc.) and has proved an effective solution for controlling or even eradicating rabies in foxes in Western Europe.

14. What is the OIE doing?

The OIE develops science-based standards, guidelines and recommendations to control the disease in animals and prevent its spread. The OIE also publishes standards for diagnosing the disease and the production of high-quality veterinary vaccines, as well as advising on stray dog population control.

The OIE’s standards on rabies are regularly revised, as for example in September 2013. The aim is to develop an approach that will allow the disease to be controlled in stages, placing the emphasis on the epidemiological importance of the animal species most frequently linked to human cases (generally dogs).

The OIE, in collaboration with WHO and FAO, also supports the organisation of international conferences on rabies, such as the Global Conference on Rabies Control, held in Seoul in September 2011.

Programmes and support for OIE rabies control

15. Do we have the means to eliminate canine rabies?

Analysts have estimated that just 10% of the financial resources currently used for the emergency treatment of people bitten by potentially rabid dogs (i.e. post-exposure prophylaxis) would be enough to enable national Veterinary Services throughout the world to eradicate rabies at its source in domestic animals; namely, in dogs; and so prevent almost all human cases worldwide (currently around 70,000 deaths per year).

16. What support can the OIE rely on in the fight against rabies?

A rabies control strategy cannot be effective without the support of coordinated partners using the same strategies.

First of all, the OIE relies on the Veterinary Services of its 178 Member Countries. In cooperation with FAO, WHO and the Global Alliance for Rabies Control, the OIE develops recommendations aimed at ensuring effective collaboration between sectors and worldwide implementation of the most appropriate strategies.

The Member Countries themselves are responsible for implementing the control methods advocated by the OIE, through their Veterinary Services, Public Health Services, local authorities and police force. They can also receive support from non-governmental organisations.
17. Who are the OIE’s experts?
The OIE has seven Reference Laboratories designated for their scientific excellence in the field of rabies. The reference experts are responsible to the OIE and all its Member Countries for scientific matters falling within their remit. They are internationally renowned researchers who actively help their Reference Laboratories to provide technical and scientific assistance and to give advice on rabies surveillance and control. They also offer scientific and technical training for Member Countries and coordinate scientific and technical studies in collaboration with other laboratories or organisations.

18. Does the OIE provide support for rabies vaccination?
The OIE’s first regional rabies vaccine bank was launched in 2012. To date, nearly 1.8 million doses of rabies vaccine have already been distributed in Asia, as a result of the financial support of the European Union for this programme, which could serve as a model for the establishment of other rabies vaccine banks for other regions of the world. This could help to ensure that high-quality vaccines, produced in accordance with the OIE’s international quality standards, are available and that, in an emergency, they can be delivered to developing countries to meet their actual requirements in the field. Vaccine banks of this kind can also help to achieve economies of scale and facilitate the implementation of regional and national rabies control programmes.

A part of the budget for the OIE vaccine bank is earmarked for experimental studies of oral rabies vaccines for stray dogs.

tribute

Fernando Crespo León
Passed away on 24 October 2013

Dr Fernando Crespo León has passed away at the age of 64.
An expert on the aetiology and epidemiology of brucellosis, Fernando Crespo initiated and was the main author of a book on ovine and caprine brucellosis, entitled Brucelosis ovina y caprina, published by the OIE in 1994. This work was the first complete and comprehensive monograph on brucellosis of small ruminants, which is caused by the aetiologic agent Brucella melitensis.

Between 2000 and 2001, Fernando Crespo worked as Chargé de mission in the OIE Scientific and Technical Department and participated in a number of OIE Specialist Commissions, working groups and ad hoc groups. In 2003, he began to vigorously promote the proper use of the Spanish language in OIE publications through various projects funded by the Spanish government.

A Doctor of Veterinary Medicine, Fernando Crespo was a researcher in the Animal Production Department of the Institute of Agrifood Research and Development of Murcia, in south-eastern Spain. His other official positions included Vice-President of the College of Veterinarians of the Murcia Region and Academician of the Royal Academy of Medicine and Surgery of Murcia.

Very much attached to the city and heritage of Murcia, our colleague founded and chaired the Friends’ Association for Endangered Murcia Native Breeds, focusing heavily on the conservation of the Murcia-Levantine cattle breed.

Fernando was held in great affection by his colleagues at the OIE. During his tenure with our Organisation, he laid the foundations for a collaboration between the OIE and Spain that has grown stronger through the years.

We wish to extend our deepest condolences to Fernando’s friends and family, as a mark of our acknowledgement and appreciation for Fernando’s legacy of collaboration with Spain, particularly in promoting the proper use of the Spanish language.