

Bats

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Species protection and rabies in Europe

Information leaflet



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Bats are protected animals. At least 32 different bat species have been found in Europe. All of our indigenous bats are exclusively insectivorous and, thus, are completely harmless. All flying mammals are severely endangered or threatened with extinction and, therefore, are strictly protected according to the **Flora, Fauna, Habitat Guidelines of the European Union (92/43/EEC) and EUROBATS agreements.** They live in houses, trees or underground dwellings, such as caves (both, natural and man-made) and cellars. In buildings, they often live in attics, casings and behind shutters. With their adaptation to buildings as a habitat, contacts with humans have become unavoidable. During their initial flights young bats repeatedly happen to enter buildings, where normally they are not to be found.

Bats, too, suffer from infectious diseases. Thus, it may happen that bats are found in the vicinity of houses and are taken to a care centre for treatment or care. If, in spite of the treatment, the animals die within a short time, sometimes **rabies** is found to be the cause of death.

What is so special about this? Let us recall the times when rabies still was prevalent in Europe. Although foxes were the actual reservoir, animals of various species contracted the disease, among them certainly in isolated cases also bats. However, the situation in bats is completely different to that in other animal species. To explain this, a brief historical excursion is required.

In Europe, rabies first was detected in a bat in 1954 in Hamburg, Germany. Rabies in bats used to be a rare finding and occurred only sporadically until 1985.

➤ When in 1970 a person died in South Africa due to an injury caused by a bat, it was found out that the causative virus was **not** identical with the so far known rabies viruses.

The detected virus was designated Duvenhage-type. Two further virus types which were also distinguishable from the classical rabies virus were already known. The first viruses isolated from bats in Germany were also very similar to the Duvenhage-type. Only by means of improved diagnostic methods it was possible to show that they were independent virus types, which were then designated **European Bat Lyssavirus 1 and 2 (EBLV-1, -2 or European Bat Rabies**

Viruses). **Thus, bat rabies in Europe is an independent disease clearly distinct from fox rabies.**

Recently, West Caucasian Bat Lyssavirus (WCBV), a new putative member of the Lyssavirus genus has been isolated from a bat in the Caucasian region.

The term “rabies-like viruses” is also used. However, this term is misleading, as it does not stipulate the true danger of these viruses.

➤ In October 1985 a Swiss biologist died after being ill for 21 days. 51 days before he became ill, he had been bitten by a bat (*Myotis daubentonii*). Post mortem a rabies virus related to the Duvenhage-type was detected, which later on was identified as EBLV-2.



➤ So far, only 5 cases of bat rabies in humans have been reported in Europe, which were either caused by variant 1 or 2 of the EBL viruses. The most recent case occurred in a wildlife biologist from Scotland, who died from an infection with EBLV-2 in November 2002.

In farmed and domestic animals a rabies infection transmitted by bats only was reported in sheep (1998, 2002) in Denmark. In 2002, a case of EBLV-1 infection in a wild stone marten was reported in Germany. In 2007 a cat was tested EBLV-1 positive in France.

How common is bat rabies? Rabies in flying mammals (chiroptera) occurs worldwide, however, it is neither transmitted by the same species nor caused by the same virus in all parts of the world. Rabies is known in blood-licking bats (vampires) in South America, in molasses in Central America, Africa and Asia, and in insect-eating bats in Europe and North America. Recently, rabies also has been detected in flying foxes in Australia and in bats from Asia. From 1977 to 2007, 856 cases of bat rabies were detected in Europe. More than 90 percent of these findings came from Denmark, the Netherlands, Germany and Poland. Only 50 cases were detected in other European countries, the majority of them in France and Spain. So far, only isolated cases have been reported in countries like Switzerland, Great Britain, the Czech Republic, Slovakia, Hungary, the Ukraine and Russia. In other European regions bat rabies has not been detected so far. However, the extent of bat rabies surveillance is often not comparable between countries or sometimes no examinations are carried out.

What do we really know? Our overall knowledge on the occurrence of bat rabies is only fragmentary. This is due to the fact that in the past examinations were usually only carried out in association with injuries of humans caused by grounded bats. Bat rabies in Europe is often reported in the common serotine bat (*Eptesicus serotinus*). This bat species mostly lives in buildings and therefore is also the most frequently examined one.

What needs to be done? On one hand it is necessary to gather more information on the occurrence and epidemiology of bat rabies. On the other hand, we have to observe the requirements of species protection. In close collaboration with biologists and bat friends the knowledge on bat rabies must be increased. Research programmes which, if possible, should include the examination results of all animals found dead, have already been launched successfully.

Information is necessary i) to reduce unfounded fears and, thus, actively contribute to the protection of these species, ii) to be able to recommend preventive measures for

persons with an increased risk of infection.

What are the signs of a rabies infection in a bat? Bats suffering from rabies mostly lie on the ground, where they are an easy prey for cats and dogs, which, however, in most cases will not eat them. They show abnormal behaviour patterns such as attacking of close-by objects, orientation difficulties, difficulties in swallowing and paralysis resulting in an inability to fly. As a general rule, all bats which are found during daytime (although usually nocturnal animals) or which show some kind of abnormal behaviour presumably are ill or enfeebled. However, neither grounded young animals nor faeces nor hibernating animals represent a threat.

How great is the danger for humans? A certain risk only exists when persons who are inexperienced in handling bats, touch an animal and are bitten due to its defensive instinct. An increased health risk is only present for persons who frequently come in contact with bats, either professionally or in their spare time. The risk for the occupiers of premises inhabited by bats is not increased, if direct contact with the animals is avoided. Spreading of **panic** from bat rabies would be **unfounded** and would be counterproductive with regard to the protection of these endangered animal species.

What should you do when you find a suspect bat? First of all, keep calm. Do not touch the bat with bare hands. Use thick gloves to put the animal in a cardboard box with small holes. Close the box tightly and store it in a cool place. Notify a bat official or the responsible veterinary agency. They will know how to handle the animal. Should you be bitten, rinse the bite thoroughly with water and soap and disinfect it. **In any case: contact your physician or a rabies information centre, even if you are unsure whether you have been bitten or not!** For further questions please contact the local health departments and veterinary agencies or a public health officer.

WHO recommends:

All persons who are exposed to bats should be vaccinated preventively against rabies. If this has not been done, a *post exposure prophylaxis (PEP)* is possible or even mandatory

after a bite or after exposure to bats.

The rabies vaccines available today are well tolerated and provide a reliable protection from an infection with rabies. Only few vaccinations are required. **Please bear the following in mind!** Bats are fascinating fellow creatures and are an important element of a functioning ecosystem. Only exceptionally they can transmit rabies. And still, with a little knowledge and respect for the environment, a coexistence of bats and humans is possible. Taking a little caution you will not only protect yourself, but you will also contribute actively to the protection of an endangered species.

Important contacts:

- Ministries for Health
 - Ministries for the Environment
 - Nature Conservation Agencies
 - Voluntary regional bat representatives
 - Environmental protection organisations
 - EUROBATS
 - Local health and veterinary agencies
 - Local public health officers
 - Local rabies information and vaccination centres
 - Local veterinary diagnostic laboratories
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- WHO Collaborating Centre for Rabies Surveillance and Research, Federal Research Institute for Animal Health, Wusterhausen, Germany
 - WHO Collaborating Centre for the Characterization of Rabies and Rabies-Related Viruses, Veterinary Laboratories Agency, New Haw, Addlestone, Surrey, UK
 - WHO Collaborating Centre for Management and Control of Zoonosis, AFSSA Nancy, Malzeville, France.

Photos/Source: Institute of Zoology, University of Erlangen