

Rabies 狂犬病

Rabies is a viral zoonotic disease that causes progressive and fatal inflammation of the brain and spinal cord. Clinically, it has two forms:

1. Furious rabies – characterized by hyperactivity and hallucinations.
2. Paralytic rabies – characterized by paralysis and coma.

Although fatal once clinical signs appear, rabies is entirely avoidable; vaccines, medicines and technologies have long been available to prevent death from rabies. Nevertheless, rabies still kills tens of thousands of people each year. Of these cases, approximately 99% are acquired from the bite of an infected dog.

Dog-mediated human rabies can be eliminated by tackling the disease at its source: infected dogs. Making people aware of how to avoid the bites of rabid dogs, to seek treatment when bitten and to vaccinate animals can successfully disrupt the rabies transmission cycle.

Rabies is estimated to cause 59 000 human deaths annually in over 150 countries, with 95% of cases occurring in Africa and Asia. Due to underreporting and uncertain estimates, this number is likely a gross underestimate. The burden of disease is disproportionately borne by rural poor populations, with approximately half of cases attributable to children under 15 years of age.

狂犬病是一種病毒性人畜共患病，可引起大腦和脊髓進行性和致命性炎症。臨床上，它有兩種形式：

1. 狂暴型狂犬病-以活動過度和幻覺為特徵。
2. 麻痺性狂犬病-以麻痺和昏迷為特徵。

雖然一旦出現臨床症狀就致死，但狂犬病卻是可以完全避免的。預防狂犬病死亡的疫苗，藥品和技術早已存在。儘管如此，狂犬病仍然每年殺死成千上萬的人。在這些情況下，大約99%是從被感染狗咬所感染的。

狗源性人類狂犬病(Dog-mediated human rabies)可以通過從源頭上預防該疾病：被感染的狗來消除。教育人們意識到如何避免被狂犬咬，被咬後要立刻尋求治療。此外給動物接種疫苗可以成功地中斷狂犬病的傳播。

據估計，狂犬病每年在 150 多個國家造成 59 000 人死亡，其中 95%的病例發生在非洲和亞洲。由於報告不足和不確定的估計，該數字可能被嚴重低估了。疾病主要發生於農村貧困地區，大約一半的病例發生於 15 歲以下的兒童。

(以上資料來自世界衛生組織 https://www.who.int/health-topics/rabies#tab=tab_1 下載日期 2020/6/25)

動物用狂犬病疫苗 Veterinary vaccines

Rabies is a 100% vaccine-preventable disease and the implementation of vaccination campaigns in reservoir species are a key part of any rabies control program. Current veterinary vaccine campaigns are largely focused on canine reservoirs, requiring vaccine coverage of more than 70% of the dog population to prevent rabies transmission. However, vaccines have also been developed and used in other domestic mammals and wildlife species.

狂犬病是一種 100%可使用疫苗做到完全預防的疾病，在保毒動物中實施疫苗接種是所有狂犬病控制計劃的關鍵作法。當前的獸醫疫苗主要集中在犬型狂犬病的防疫，要求疫苗覆蓋率超過70%的犬隻，以防止狂犬病傳播。此外，也有新開發出疫苗可用於其他家畜和野生動物物種。

Inactivated rabies vaccines are widely available for parenteral vaccination of dogs and have repeatedly been shown to result in a robust immune response in >95% of dogs. **Modified live-virus vaccines had been widely used for parenteral use, but are now discouraged as several of these products have been documented to induce rabies.** Nerve tissue vaccines are less immunogenic and

have more severe adverse events, and as such both WHO and OIE strongly recommend discontinuation of nerve tissue vaccines and recommend their replacement with modern cell culture vaccines.

狂犬病死毒疫苗可廣泛用於狗隻接種，並證明可對 95% 以上的狗產生有效的免疫反應。改良的活病毒疫苗已被廣泛用於注射使用，但現在已被勸阻，因為已證明其中一些產品可誘導狂犬病。神經組織疫苗的免疫原性較低，並且具有更嚴重的不良事件，因此，WHO 和 OIE 都強烈建議停止使用神經組織疫苗，並建議用現代細胞培養疫苗替代。

Oral rabies vaccines (ORV) are modified live-virus vaccines which have been successfully used to control rabies in wildlife reservoirs in Europe and the United States of America. Several field studies have been performed but further data are required to demonstrate the safety of ORV in target and non-target species before they are applied in wide scale dog vaccination campaigns. Parenteral vaccination should remain the primary method of immunization in accessible dogs, however ORV is a useful complementary measure in contexts where the presence of free-roaming dog populations compromise the ability of the program to reach 70% vaccination coverage.

口服狂犬病疫苗（ORV）是改良的活病毒疫苗，在歐美已成功用於控制野生動物保護區的狂犬病。目前雖然已經有了一些現場研究，但是仍需要進一步的數據來證明 ORV 的安全性，然後再考慮是否可以用於大規模的犬疫苗接種運動。注射型疫苗接種應仍然是犬隻的主要免疫接種方法，但是，在流浪犬群中若要達到 70% 疫苗接種率，口服疫苗也是另一種有用的選擇。

(以上資料來自世界衛生組織 https://www.who.int/rabies/veterinary_vaccines/en/ 下載日期 2020/6/25)