

# Rabies prophylaxis

Prevention with this disease means avoiding contact with an infected animal. The main theme is therefore **prophylaxis**.

## Indication

Rabies vaccine is meant for post-exposure prophylaxis in people who have been in contact with an animal that's suspected to have been infected. It is also used in pre-exposure prophylaxis (preventative vaccination) in people with a higher risk of exposition to this virus, eg. lab workers, veterinarians, hunters, zoologists, forest workers, but also tourists planning to stay in places with an increased rabies incidence.

## Dosage

### *Pre-exposure prophylaxis (prevention)*

one dose if the vaccine is usually 0.5-1.0ml. It can be administered no sooner than 2 months of age. The main vaccination schedule comprises **three doses**, with the interval between each being **0, 7, and 21 or 28 days**. Administering the **booster** depends on manufacturer recommendation, in some vaccines one year after the basic vaccination, another booster can be applied every 5 years.

### *Post-exposure prophylaxis*

It is recommended to **not delay** it; even though the incubation period can be up to a year, it is an urgent situation. Post-exposure prophylaxis with manifested symptoms is ineffective. One dose of the vaccine is usually 0.1-1.0ml. The main vaccination comprises 5 doses – the Essen regimen (newly 4 doses) with the intervals being **0, 3, 7, 14, and 30 days**. In older people or patients with immune deficiency, **5th dose is recommended on the 90th day**. In serious cases it is possible to vaccinate **on the 0th day with two doses, one on each side of the body**. The number of doses is therefore lowered to 4 (2 on the 0th day, next ones on the 7th and 21st day) – Zagreb regimen. In some cases it is followed by the parallel administering of immunoglobulin (anti-rabies serum), which works synergistically with the vaccine and aids the vaccine immune response. The anti-rabies serum, made from the plasma of immunised human donors, is usually administered around the area of injury in the amount 20IU/kg, 7 days after commencing post-exposure prophylaxis at the latest.

## Route of administration

The vaccine is most commonly administered intramuscularly or subcutaneously. Intradermal application has the advantage of rapid anti-rabies antibody production, and is most suitable for prevention or booster immunisation. **The vaccine must not be administered intravenously.**

## Vaccine effectiveness

Post-exposure prophylactic vaccination is **the only way** to prevent fatal manifestation of rabies. The presence of antibodies is already detected on the 7th day and on the 14th day 100% seroconversion is achieved. The minimal protective level of antibodies is 0.5 IU/ml.

## Contraindications

### *Pre-exposure prophylaxis (prevention)*

Individuals who have recovered from a febrile illness must not be vaccinated earlier than 2 weeks after recovery. In persons with **active untreated tuberculosis**, patients treated by **corticosteroids**, patients with **neoplasms** affecting the bone marrow or lymphatic system, and people with serious **immune disorders** this immunisation can be contraindicated. **Known allergic reactions** to any component of the vaccine are contraindication for vaccination. If complications arise after immunisation, then administering the next dose of the vaccine is contraindicated until such time as the reason for the complication has been clarified. Even though the effect of this vaccine on a fetus has not been proven, pregnancy is a contraindication for the rabies vaccine.

### *Post-exposure prophylaxis*

In this case there are **no contraindications**. If the lab result of the animal in question is uncertain or positive, already-started prophylaxis should not be interrupted or postponed. In the case of adverse effects, local or system reactions are relieved by analgesics, antipyretics, antiphlogistics, antihistamines, etc.

## Links

## Related articles

- Rabies

## Bibliography

- HAVLÍK, Jiří. *Infektologie*. 2. edition. Avicenum, 1990. ISBN 80-201-0062-8.
- KARGER-DECKER, Bernt. *Unsichtbare Feinde*. 1. edition. Koehler & Amelang, 1968.
- TAKAYAMA, Naohide. Rabies: a preventable but incurable disease. *Journal of Infection and Chemotherapy* [online]. 2008, vol. 14, no. 1, p. 8-14, Available from <<https://link.springer.com/article/10.1007%2Fs10156-007-0573-0>>. ISSN 1341-321X (print), 1437-7780 (electronic).