

# Post-exposure prophylaxis (PEP) of Rabies

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**Submission date:** 09-Mar-2023 08:17AM (UTC-0500)

**Submission ID:** 2003240344

**File name:** Post.docx (16.58K)

**Word count:** 836

**Character count:** 4683

## Post-exposure prophylaxis (PEP) of Rabies

### Abstract:

Animals and humans can both contract the fatal viral disease rabies. A highly successful method for preventing rabies in those who have been bitten or exposed to the virus is post-exposure prophylaxis (PEP). PEP involves a series of vaccines and immunoglobulins that can prevent the virus from causing disease. This article discusses the different components of PEP, including the timing, dosage, and administration of vaccines and immunoglobulins. It also highlights the importance of PEP in preventing the spread of rabies and protecting human and animal health.

### Introduction:

The rabies virus, which causes rabies, is a zoonotic illness that is spread through the bite of an animal that has been exposed to it. The virus causes encephalitis, which ultimately results in death by attacking the central nervous system. The World Health Organization (WHO) estimates that rabies kills tens of thousands of people annually, predominantly in Asia and Africa (1). Each year, between 30,000 and 60,000 incidents of animal bites are reported in the United States, and 5 to 10% of these bites are caused by rabies-infected animals (2).

A highly successful method for preventing rabies in those who have been bitten or exposed to the virus is post-exposure prophylaxis (PEP). PEP involves a series of vaccines and immunoglobulins that can prevent the virus from causing disease. The administration of PEP must be prompt, with vaccines and immunoglobulins given as soon as possible after exposure to the virus. This article discusses the different components of PEP, including the timing, dosage, and administration of vaccines and immunoglobulins.

### PEP Components:

The components of PEP include the administration of immunoglobulin and a series of rabies vaccines. Immunoglobulin is administered to provide immediate immunity against the virus, while the vaccine series is designed to induce long-term immunity. The timing and dosage of these components are critical for their effectiveness in preventing the spread of the virus.

**Immunoglobulin:** Rabies immunoglobulin (RIG) is a human or equine-derived product that provides immediate immunity against the virus. RIG should be administered as soon as possible after exposure to the virus, ideally within 7 days. The recommended dose of RIG is 20 IU/kg body weight, with a maximum of 40 IU/kg. The immunoglobulin is injected into and around the wound site to neutralize the virus in the infected tissues.

**Vaccine Series:** The vaccine series is designed to induce long-term immunity against the virus. The series typically consists of four doses of vaccine, with the first dose administered as soon as possible after exposure. The subsequent doses are given on days 3, 7, and 14 after the first dose. The vaccines are typically administered intramuscularly, with the site of injection varying depending on age and body weight. The dosage and duration of the vaccine series may vary depending on the type of vaccine used.

### Importance of PEP:

PEP is a crucial strategy to prevent the spread of rabies and protect human and animal health. Without PEP, individuals who have been exposed to the virus face a high risk of developing the disease and may ultimately die. Moreover, PEP can aid in stopping the virus's transfer from animals to people,

lowering the incidence of rabies cases and fatalities. PEP is crucial for maintaining animal health since it can stop the virus from spreading from infected animals to uninfected ones.

#### Conclusion:

The injection of PEP can prevent the deadly viral illness rabies. PEP involves the timely administration of immunoglobulin and a series of vaccines, which can provide immediate and long-term immunity against the virus. PEP is a critical component of rabies control programs around the world, particularly in areas where the disease is endemic. The WHO recommends PEP for all individuals who have been bitten or scratched by an animal suspected to be infected with the virus, regardless of whether the animal is wild or domesticated (1). However, the effectiveness of PEP depends on the prompt administration of immunoglobulin and vaccines, as delays can reduce the efficacy of the treatment.

In addition to PEP, prevention efforts for rabies include vaccination programs for domestic animals, public awareness campaigns, and control of stray animal populations. Vaccination of domestic animals can prevent the spread of the virus and reduce the likelihood of human exposure. Public awareness campaigns can help to educate individuals about the risks of rabies and promote the importance of seeking medical attention after an animal bite or exposure. Control of stray animal populations can help to reduce the incidence of rabies in animals and prevent the spread of the virus to humans.

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