



# Rabies,

a lick or a scratch is all it takes <sup>1</sup>



Kills 1 person every 9 minutes  
59,000 deaths per year worldwide <sup>1,11</sup>



Transmitted by the bite or scratch of a rabid animal, 99% by dogs, but also by other wildlife including foxes or bats <sup>1</sup>



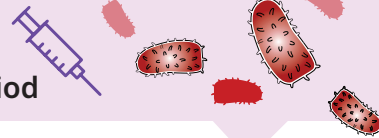
Can cause acute brain inflammation and can have furious or paralytic forms <sup>1</sup>



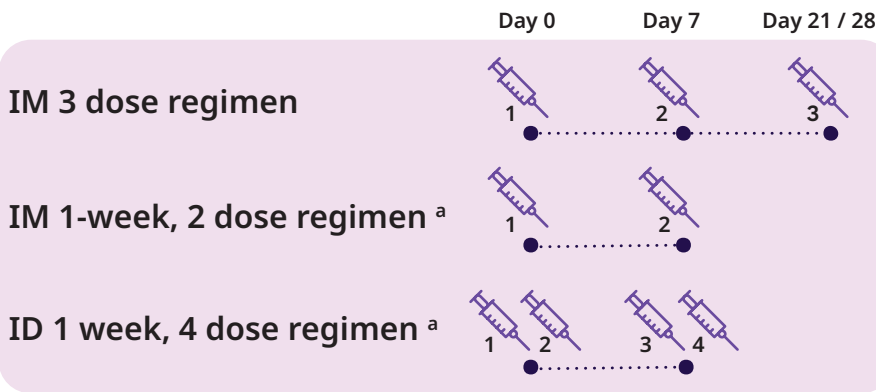
Nearly always fatal once symptoms appear <sup>1,5</sup>

But **can be** preventable **with vaccination** <sup>1</sup>

Pre-Exposure Prophylaxis (PrEP) = 2-4 doses over a 1-4 week period



## Verorab PrEP Schedules <sup>3,4</sup>



## After rabies exposure



**PROMPT** post-exposure intervention can prevent the disease

<sup>a</sup> 1-Week Regimens shouldn't be used for Immunocompromised individuals - see SmPC <sup>3,4</sup>



Previously immunized against rabies or not, **ANY** potential rabies exposure requires **immediate post-exposure prophylaxis (PEP)**:



**1**

**Extensive wound washing** <sup>2</sup>



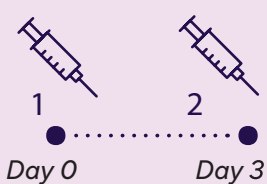
15 min minimum

**2**

## Vaccination

### Verorab schedule for fully immunized\*

people against rabies (PEP = 2 doses only) <sup>3,4</sup>

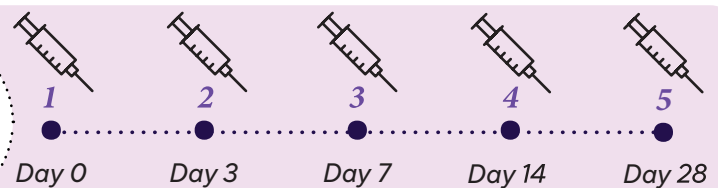


NO HRIG needed

1 injection per dose via IM (0.5mL) or ID (0.1mL) route <sup>3,4</sup>

Alternatively, 4 intradermal injections of 0.1mL may be administered in 4 separate sites on Day 0 <sup>3,4</sup>

+ HRIG if indicated



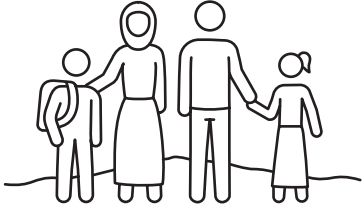
1 injection per dose IM (0.5mL) <sup>3,4</sup>

For ID PEP regimen please refer to Verorab SmPC

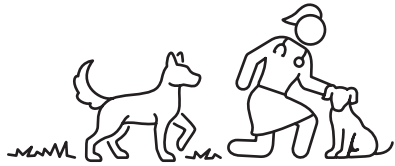
Where a regime has been started that is different to that used in the UK, specialist advice should be sought <sup>2</sup>

# PrEP is recommended for populations at high risk of rabies exposure

Populations in highly endemic settings with limited access to timely & adequate PEP<sup>1</sup>



Travellers who may be at risk of exposure<sup>1</sup>

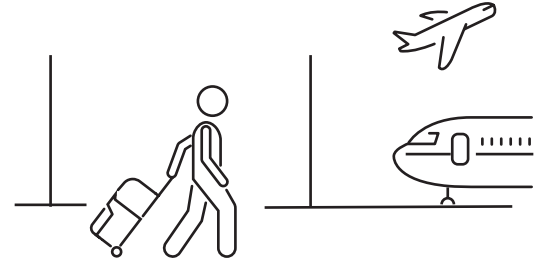
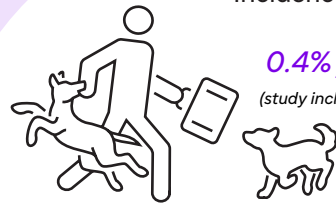


Individuals exposed to potentially infected animals (lab workers, vets, bat handlers etc)<sup>1,2</sup>

# Risk of rabies associated with travel

Incidence of animal bites from travelers =

0.4% / month of stay<sup>5</sup>  
(study including travellers from multiple countries)



Among travellers undertaking at risk activities only 2-11% perceived very high or high risk of rabies exposure & only 8% received PrEP vaccination<sup>6</sup>

(study of travellers from UK, Canada, Germany and Sweden)

## Prevention against rabies (PrEP) should be considered before travelling to at-risk areas for rabies:

1

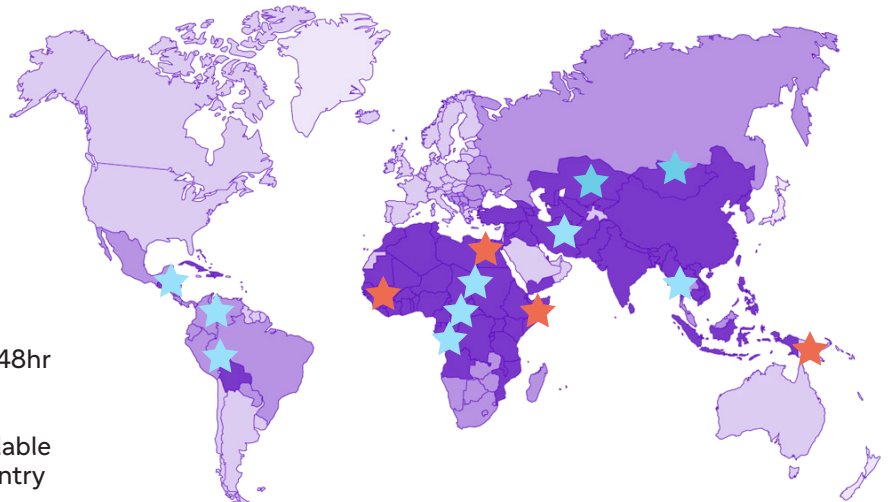
Because *rabies PrEP is highly recommended for international travelers* to high-risk areas for rabies by health bodies (WHO, US-ACIP)<sup>1,5</sup>, especially if engaged in *remote outdoor activities*<sup>1,7,8</sup>

2

Because *timely access to care and products (vaccine and RIG) are not guaranteed everywhere in the world*<sup>9</sup>, which could delay care and would result in premature end of trip

### RABIES RISK LEVELS for humans<sup>9\*</sup>

- No risk
- Low risk
- Moderate risk
- High risk
- RIG not readily available within 48hr throughout the country
- RIG+ vaccines not readily available within 48hr throughout the country



\* From WHO International Travel and Health. Distribution of risk levels for humans contracting rabies, worldwide, 2018<sup>10</sup>

HRIG: human rabies immunoglobulin RIG: rabies immunoglobulin

Infographic produced and funded by Sanofi

## References

1. World Health Organization- WHO Position paper on rabies vaccines Apr 2018. 93 (16): 201-20. 2. Public Health England. Rabies: The Green Book. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1159426/Rabies-green-book-chapter-27-May-2023.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1159426/Rabies-green-book-chapter-27-May-2023.pdf) Accessed March 2024. 3. Verorab Summary of Product Characteristics GB, May 2024. 4. Verorab Summary of Product Characteristics NI, July 2023. 5. Gautret P, et al. Rabies vaccination for international travelers. Vaccine, 2012. Vaccine 30: 126-133. 6. Marano C, et al. Perceptions of rabies risk: a survey of travellers and travel clinics from Canada, Germany, Sweden and the UK. J Trav Med. 2019; 26 (Suppl 1): S3-S9. 7. US Centers for Disease Control and Prevention. Advisory Committee on Immunization Practices (ACIP) recommendations. MMWR May 06, 2022. 71 (18):619-27. 8. World Health Organization. (2018). WHO expert consultation on rabies: third report. World Health Organization. <https://apps.who.int/iris/handle/10665/272364>. 9. Henry RE, et al. A country classification system to inform rabies prevention guidelines and regulations. J Travel Med. 2022. 1-9. 10. Alhassan SA, et al. A Case of Fatal Rabies in a Donkey in Dawakin Tofa, Kano State, Nigeria. J. Anim. 2020. Health Prod. 8(1): 40-4. 11. WHO. Zero by 30: the global strategic plan to end human deaths from dog-mediated rabies by 2030. <https://www.who.int/publications/i/item/WHO-UCN-NTD-VVE-20211> Accessed March 2024

**GB Prescribing Information: Verorab, powder and solvent for suspension for injection**  
**Please refer to the Summary of Product Characteristics (SmPC) before prescribing**

**Presentation:** A single dose vial of powdered vaccine and pre-filled syringe of solvent for suspension for injection. After reconstitution with 0.5 mL solvent, 1 vial contains 3.25 International Units of rabies virus, WISTAR Rabies PM/WI38 1503-3M strain (inactivated).

**Indication:** Verorab is indicated for pre-exposure and post-exposure prophylaxis of rabies in all age groups. Verorab should be used according to official recommendations.

**Dosage and Administration:** The recommended dose is 0.5 mL of reconstituted vaccine intramuscularly (IM) or 0.1 mL of reconstituted vaccine intradermally (ID) in each injection site.

**Pre-exposure prophylaxis:** For primary pre-exposure immunisation, immunocompetent individuals can be vaccinated according to one of the vaccination schedules presented in below table and according to local official recommendations when available:

	D0	D7	D21 or D28
Intramuscular route (0.5 mL per dose)			
Three-dose regimen IM route - 0.5 mL	1 dose	1 dose	1 dose
One-week regimen <sup>a</sup> IM route - 0.5 mL	1 dose	1 dose	
Intradermal route (0.1 mL per dose)			
One-week regimen <sup>a</sup> ID route - 0.1 mL	2 doses <sup>b</sup>	2 doses <sup>b</sup>	

a - This regimen should not be used for immunocompromised individuals (see subsection "Immunocompromised individuals")

b - One injection in each arm (for adults and children) or each anterolateral thigh (infants and toddlers)

For individuals at continued risk, booster doses should be given in line with official recommendations. Please see SmPC for recommended official guidelines. **Post-exposure prophylaxis:** Post-exposure prophylaxis should be initiated as soon as possible after suspected exposure to rabies. In all cases, proper wound care (careful washing of all bites and scratches with soap or detergent and copious amounts of water and/or virucidal agents) must be performed immediately or as soon as possible after exposure. It must be performed before administration of vaccine or rabies immunoglobulins, when they are indicated. **Post-exposure prophylaxis of immunised and non-immunised individuals:** Post-exposure prophylaxis is recommended for both immunised and non-immunised individuals. Please see SmPC for recommended official guidelines. **Pre-exposure prophylaxis for immunocompromised individuals:** A 3-dose regimen should be used (see SmPC) and serology testing for neutralising antibodies should be performed 2 to 4 weeks following the last dose to assess the possible need for an additional dose of the vaccine.

**Special Populations:** **Paediatric population:** Children should receive the same dose as adults. Please see SmPC for full dosage instructions.

**Contraindications:** **Pre-exposure prophylaxis:** Hypersensitivity to the active substance(s) or to any of the excipients listed in SmPC, to polymyxin B, to streptomycin, to neomycin or to any antibiotic of the same class to a previous administration or to any vaccine containing the same components. Vaccination should be

postponed in case of febrile or acute diseases. **Post-exposure prophylaxis:** Given the always-fatal outcome of the declared rabies infection, there are no contraindications to post-exposure vaccination.

**Precautions and Warnings:** **Special warnings:** As with all vaccines, Verorab may not protect 100% of vaccinated individuals. Use with caution in people with known allergies to polymyxin B, to streptomycin, to neomycin (present as traces in the vaccine) or to any antibiotic of the same class. **Precautions for use:** Injection-schedule recommendations should be followed scrupulously. The need for serological tests (to assess seroconversion in individuals) should be determined in accordance with official recommendations. When the vaccine is administered in individuals with known immunodeficiency, due to an immunosuppressive disease or a concomitant immunosuppressive treatment (including corticosteroids), blood tests must be performed 2 to 4 weeks after vaccination to ensure that a protective immunising response was obtained. In case of post-exposure vaccination, a complete vaccination regimen must be administered. Rabies immunoglobulin must also be administered concomitantly with the vaccine in case of any category II or III exposure (see SmPC for full details). Do not inject via the intravascular route: make sure the needle does not penetrate a blood vessel. As with all injectable vaccines, appropriate medical treatment and supervision must be readily available in case of a rare anaphylactic reaction after vaccine administration, particularly in case of post-exposure in individuals with a known hypersensitivity to polymyxin B, to streptomycin, to neomycin or to any antibiotic of the same class. As with all injectable vaccines, Verorab should be administered with caution in individuals with thrombocytopenia or coagulation disorders as intramuscular injection may induce bleeding in these individuals. Anxiety-related reactions, including vasovagal reactions (syncope), hyperventilation or stress-related reactions can occur following, or even before, any vaccination as a psychogenic response to the needle injection. This can be accompanied by several neurological signs, such as transient visual disturbance and paraesthesia. It is important that procedures are in place to avoid injury from faints. Verorab contains 4.1 micrograms phenylalanine per 0.5 mL dose which is equivalent to 0.068 microgram/kg for a 60 kg person. Phenylalanine may be harmful for people with phenylketonuria (PKU), a rare genetic disorder in which phenylalanine builds up because the body cannot remove it properly. Verorab contains less than 1 mmol of potassium (39 mg) and less than 1 mmol of sodium (23 mg) per dose, that is to say essentially 'potassium-free' and 'sodium-free'. **Paediatric population:** The potential risk of apnoea with the need for respiratory monitoring for 48-72 h must be carefully taken into account when administering the primary vaccination doses in very premature infants (born at 28 weeks' gestation or less) and particularly in those with a history of respiratory immaturity.

**Interactions:** Immunosuppressive treatments, including long-term systemic corticosteroid therapy, may interfere with the production of antibodies and lead to vaccination failure. It is therefore recommended to perform a serological test 2 to 4 weeks after vaccination (see SmPC). Verorab may be administered concomitantly with

a Vi polysaccharide typhoid vaccine during the same vaccination visit, using two different injection sites.

Rabies immunoglobulins or any other product and the rabies vaccine must never be combined in the same syringe or injected into the same site (see SmPC). Given that rabies immunoglobulins interfere with the development of the immune response to the rabies vaccine, the recommendations for administration of rabies immunoglobulins should be strictly followed.

**Pregnancy:** Data on the use of Verorab in pregnant women are limited. Animal developmental and reproductive toxicity studies have not been conducted with this vaccine. **Pre-exposure prophylaxis:** Given the seriousness of the disease, vaccination should be given to pregnant women only if clearly needed and following an assessment of the risks and benefits, in compliance with the usual vaccination schedule **Post-exposure prophylaxis:** Given the seriousness of the disease, the vaccine can be administered during pregnancy.

**Lactation:** It is unknown whether Verorab is excreted in human milk. No risk has been identified and is anticipated for infants receiving breast milk. Verorab can be administered to breast-feeding women following an assessment of the risks and benefits.

**Fertility:** Verorab has not been evaluated in fertility studies.

**Adverse Reactions:** Very common (Adults): headache, myalgia, injection site pain (IM & ID use), injection site erythema (ID use), malaise. (Paediatric population): headache, irritability & somnolence (in infants/young children), myalgia, injection site pain (IM & ID use), injection site erythema (ID use), injection site swelling (ID use), malaise, inconsolable crying (in infants/young children). Common (Adults): lymphadenopathy, injection site erythema (IM use), injection site pruritus (IM & ID use), injection site swelling (IM & ID use), injection site induration (IM use), influenza-like syndrome, fever. (Paediatric population): lymphadenopathy, insomnia (in infants/young children), injection site erythema (IM use), injection site swelling (IM use), fever. Prescribers should consult the SmPC in relation to other adverse reactions.

**List price:** £75.00

**Legal Category:** POM

**Marketing Authorisation Number:** PLGB 46602/0029

**Marketing Authorisation Holder:** Sanofi Pasteur, 14 Espace Henry Vallée, 69007 Lyon, France.

**Further information is available from:** Sanofi, 410 Thames Valley Park Drive, Reading, Berkshire, RG6 1PT. [uk-medicalinformation@sanofi.com](mailto:uk-medicalinformation@sanofi.com)

**Date of preparation:** May 2024

**Document Number:** MAT-XU-2401774 (v1.0)

Adverse events should be reported. Reporting forms and information can be found at [www.mhra.gov.uk/yellowcard](http://www.mhra.gov.uk/yellowcard) or search for MHRA Yellow Card in the Google Play or Apple App Store.

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