Rabies Vaccine

Vaccine Description	**Brand: Imovax®** • Inactivated human diploid cell vaccine (HDCV) • Contains human albumin, neomycin, phenol, and trace amounts of beta-propiolactone (See package insert for full ingredients)
	Brand: RabAvert® • Inactivated purified chick embryo cell vaccine (PCEC) • Contains bovine gelatin, human albumin, potassium glutamate, sodium EDTA, chicken protein (ovalbumin), neomycin, chlortetracycline, and amphotericin B. (See package insert for full ingredients)
Dose & Route	• Dose: 1 mL • Route: IM (IM precaution: hemophilia, thrombocytopenia, and anticoagulation therapy)
Indications	All ages with a suspected or confirmed rabies exposure, or who fall into at least one of 5 risk categories: 1. Work with live rabies virus or perform testing for rabies in diagnostic laboratories. 2. Frequent contact with bats or high-density bat environments; perform animal necropsies. 3. At risk to or interact with other potentially rabid animals for > 3 years after PrEP (e.g., veterinarians and vet techs, animal control, wildlife control and biologists, spelunkers, and travelers to areas where rabies is endemic and immediate access to safe PEP is not readily available). 4. Same as category 3 but for ≤ 3 years after PrEP. 5. General U.S. population.
Pre-exposure Prophylaxis (PrEP)	• Primary series: 2 vaccine doses (0, 7 days) • Booster dose and/or titer: based on risk category (see Table 1 or current ACIP recommendations) • PrEP does not eliminate the need for additional medical attention after a rabies exposure, but it simplifies PEP.
Post-exposure Prophylaxis (PEP)	**Previously received PrEP:** 2 vaccine doses (0, 3 days), no rabies immune globulin (RIG)
	No prior rabies vaccine: 4 vaccine doses (0, 3, 7, 14 days) and RIG with first dose. If immunocompromised give a 5th vaccine dose on day 28 (see Table 2)

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Contraindications	• **PrEP:** History of a serious reaction (e.g., anaphylaxis) after vaccination or to any vaccine component, to include neomycin. • **PEP:** As rabies is virtually 100% fatal once symptoms appear, there are no contraindications to PEP (including pregnancy). Patients with a history of hypersensitivity who require PEP may be given antihistamines or NSAIDs and vaccinated under observation by an Allergist. Equipment and medications to manage a medical emergency should be readily available. If a local or mild systemic reaction occurs, consider switching to the alternative vaccine for the remainder of the series.
Precautions	• **PrEP:** Moderate or severe acute illness with or without fever • Individuals should postpone PrEP and avoid activities with risk for rabies exposure during any periods of expected immune compromise. • Syncope (fainting) can occur in association with administration of injectable vaccines. Have procedures in place to avoid a falling injury (e.g., observation after administration) and to restore cerebral perfusion following syncope.
Special Considerations	• See Storage and Handling Section
Additional Information: www.health.mil/rabies MMWR: https://www.cdc.gov/mmwr/volumes/71/wr/mm7118a2.htm VIS: https://www.cdc.gov/vaccines/hcp/vis/vis-statements/rabies.html	

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Table 1. ACIP Rabies Pre-Exposure Prophylaxis (PrEP) Recommendations

Risk Category	Typical Population	Primary Series (2 doses)	Titer/Booster (1 dose)
1. Elevated risk for unrecognized† or recognized†† exposures, including unusual or high-risk exposures	Work with live rabies virus in research or vaccine production facilities; perform rabies testing in diagnostic laboratories	Vaccine on days 0 and 7	Titer: every 6 months Booster: if titer < 0.5 IU/mL§‖
2. Elevated risk for unrecognized† or recognized†† exposures	Frequently handle or have contact with bats; enter high-density bat environments; perform animal necropsies (e.g., biologists who frequently enter bat roosts or who collect suspected rabies samples)	Vaccine on days 0 and 7	Titer: every 2 years Booster: if titer < 0.5 IU/mL§‖
3. Elevated risk for recognized†† exposures, sustained risk¶	Interact with animals that could be rabid# (e.g., veterinarians, vet techs, animal control officers; wildlife biologists, rehabilitators, and trappers); spelunkers	Vaccine on days 0 and 7	Titer: once, 1–3 years after PrEP and booster if titer < 0.5 IU/mL§‖ OR Booster 3 weeks-3 years after PrEP‖
	Travelers with increased risk for exposure to potentially rabid animals (particularly dogs) who might not have prompt access to safe PEP (e.g., rural area, far from closest PEP clinic)		
4. Elevated risk for recognized†† exposures, risk not sustained¶	Same as Risk Category 3, but risk duration ≤ 3 years (e.g., short-term animal care, no expected high-risk travel > 3 years after PrEP)	Vaccine on days 0 and 7	None
5. Low risk for exposure	Typical person living in the United States	None	None

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Rabies Vaccine

ACIP Recommendations 2022 (Continued)

Adapted from CDC MMWR 71(18), 619-627 (06 May 2022): https://www.cdc.gov/mmwr/volumes/71/wr/mm7118a2.htm.
Abbreviations: IU: international units; PEP: post-exposure prophylaxis
* Nature of exposure is the most important variable to consider when determining risk category. Examples provided are only a guide; categorizations should be done on a case-by-case basis. If an individual falls into more than one category, follow guidance for the highest-risk category. Risk categories may change over an individual's lifetime.
† Example: a small scratch during an inconspicuous personal protective equipment breach while testing neural tissue from a rabid animal or conducting studies on bats in the field, etc.
†† Noticed because the exposure is unusual (e.g., contact with a bat, splash with contaminated fluids) or painful (e.g., bite or scratch from a raccoon).
§ Give a booster when rabies antibody titers are < 0.5 IU/mL. For immunocompetent patients, titers to verify booster response are not needed. For immunocompromised patients, verify response with a titer ≥ 1 week (ideally, 2–4 weeks) after every booster dose.
¶ Elevated risk for rabies > 3 years after the completion of the primary rabies PrEP series.
# Rabies virus is unlikely to persist outside a deceased animal's body for an extended time. Risk of transmission to persons handling animal products (e.g., hunters or taxidermists) is unknown but presumed to be low (risk category 5); direct skin contact with saliva or nerve tissue of mammals should be avoided regardless of profession or activity.
‖ Titer after recommended booster dose(s) not indicated unless patient has altered immunity.

Table 2. Rabies Post-Exposure Prophylaxis (PEP) Recommendations*

Status	Product	Dose	# of Doses	Schedule (Days)	Route
Not previously vaccinated	RIG	20 IU/ kg body weight	1	0	Infiltrated at bite site (if possible); remainder IM
	HDCV or PCEC	1.0 mL	4 or 5‡	0, 3, 7, 14 (and 28)‡	IM
Previously vaccinated§, ¶	HDCV or PCEC	1.0 mL	2	0, 3	IM

Adapted from CDC Yellow Book (2024): https://wwwnc.cdc.gov/travel/yellowbook/2024/infections-diseases/rabies.
Abbreviations: RIG: rabies immune globulin; IM: intramuscular; HDCV: human diploid cell vaccine; PCEC: purified chick embryo cell.
* All PEP should begin with immediate, thorough wound cleansing with soap and water, povidone-iodine, or other substances with virucidal activity.
† For most minor schedule deviations (delays of a few days), resume vaccination as though the traveler were on schedule. If substantial deviations occur, assess immune response with a titer 7–14 days after the final dose is administered.
‡ Five vaccine doses for the immunocompromised patient. The first 4 vaccine doses are given on the same schedule as for an immunocompetent patient, and the fifth dose is given on day 28. Verify immune response with a titer ≥ 1 week (ideally, 2–4 weeks) after the final dose is administered. For more information, see www.cdc.gov/mmwr/preview/mmwrhtml/rr5902a1.htm.
§ Prior PrEP or PEP immunization with HDCV or PCEC, or previously received any other type of rabies vaccine and have a subsequent documented protective titer response (> 0.5 IU/mL).
¶ RIG not recommended.