RABIES PREVENTION
(Tables for the Rabies Prevention Flowchart)

Table 1. Definition of exposure

Exposure: Rabies can be transmitted only when the saliva or neural tissue of an infected animal is introduced into open cuts or wounds and mucous membranes (e.g., mouth, nose, eyes).

Bite: Any penetration of the skin by an animal's teeth. Bites are high-risk exposures. Bites to the face and hands carry the highest risk.

Non-bite exposure: Scratches, abrasions, open wounds or mucous membranes contaminated with saliva or neural tissue from a rabid animal constitute non-bite exposures. If the material containing the virus is dry, the virus can be considered noninfectious (non-exposure).

Non-exposures: Other contact by itself, such as being in the vicinity of, petting, or handling an animal, or coming into contact with its blood, urine or feces normally does not constitute exposure, and therefore does not require postexposure prophylaxis.

Bat exposure: Because the injury inflicted by a bat bite or scratch may be small and not evident, prophylaxis is indicated for situations in which a bat is physically present if a bite or mucous membrane exposure cannot be excluded and prompt testing of the bat to exclude rabies cannot be arranged. Bats found indoors present an elevated risk of an unrecognized bite. Bats found at schools, camps, or public parks present a risk of multiple exposures and require outreach to search for unreported exposures.

Human-to-human exposure: Transmission can occur in the same way as animal-to-human transmission. Organ and tissue transplantation resulting in rabies transmission has occurred. No documented laboratory-diagnosed cases of human-to-human rabies transmission have been documented from a bite or non-bite exposure other than transplant cases.

Table 2. Type of Animal

Table 3. Rabies Postexposure (PEP) Schedule[1,]

Vaccination	Treatment	Regimen[2]
All exposures	Local wound treatment	Thoroughly cleanse all wounds with soap and water. If available, a virucidal agent such as povidine-iodine solution should be used to irrigate the wounds. Tetanus prophylaxis and measures to control bacterial infection should be given as indicated. Suturing should be avoided, when possible.
Not previously vaccinated	HRIG[1] (Human Rabies Immune Globulin)	Administer 20 IU/kg body weight. If anatomically feasible, the full dose of globulin (RIG) should be infiltrated around the wound(s) and any remaining volume should be administered intramuscularly (IM) at an anatomical site distant from vaccine administration. Also, RIG should not be administered in the same syringe as vaccine. Because RIG might partially suppress active production of antibody, no more than the recommended dose should be given.
	Vaccine[1]	HDCV or PCECV, 1.0 mL IM (deltoid area[3]), one each days 0, 3, 7, 14. Immunosuppressed persons should receive a fifth dose on day 28. **[**MMWR 2010;59(No. RR-#2)**]**
Previously Vaccinated[4]	HRIG	**HRIG should not be administered.**
	Vaccine[1]	HDCV or PCECV, 1.0 mL IM (deltoid area[3]), one each on days 0 and 3.

[1] Both HRIG (Imogam®-Rabies HT) and HDCV (Imovax®) can be obtained within 24 hours from Sanofi Pasteur: 800-822-2463, vaccineshoppe.com. PCECV (RabAvert®): Novartis: 800-244-7668, novartisvaccinesdirect.com. HRIG (HyperRab™S/D): Grifols Therapeutics at 800-520-2807, grifols.com

[2] These regimens are applicable for all age groups, including children. Pregnancy is not a contraindication for rabies prophylaxis. When rabies postexposure prophylaxis is administered to persons who are immunosuppressed by disease or medications, it is especially important that a serum sample be tested for rabies antibody to ensure that an acceptable response has developed. Local pain, low-grade fever, headache and malaise can follow receipt of HRIG. **Once initiated, rabies prophylaxis should not be interrupted or** dis**continued because of mild adverse reactions.** Serious systemic reactions are rare, and much less frequent among those receiving primary vaccination). In the face of a serious systemic reaction, advice and assistance in management should be sought before deciding to discontinue vaccination of a person at risk for rabies.

[3] The deltoid area is the only acceptable site of vaccination for adults and older children. For younger children, the outer aspect of the thigh can be used. Vaccine should never be administered in the gluteal area.

Table 4. Signs and Symptoms of Rabies in an Animal

Loss of appetite, excessive irritability or restlessness, unusual vocalizations, fever, trouble walking, paralysis (frequently beginning in the hind legs or throat), excessive salivation, tremors, convulsions, stupor, an unprovoked bite, extreme depression, or bizarre behavior (increased friendliness or fear). BATS are more likely to fly in daylight, lose ability to fly, or stay in a visible location for long periods.

Table 5. Rabies Consultation

Los Angeles County Department of Public Health Acute Communicable Disease Control (ACDC) Program
For consultation regarding human rabies prophylaxis call ACDC at: (213) 240-7941 or (213) 974-1234 after hours.

Los Angeles County Department of Public Health Veterinary Public Health (VPH) Program.
For consultation regarding animal bite reports call VPH: (877) 747-2243 or 213-989-7060.

Notes and References

County of Los Angeles Public Health Immunization Program

RABIES PREVENTION
(Tables for the Rabies Prevention Flowchart)

Wild: Bat
Wild carnivore (including raccoon, fox, skunk, opossum, coyote, bobcat, weasel, fisher, mink, ermine, wolf, wolf-hybrid, other), non-captive primate

Cat, Dog or Ferret:
Wolf-hybrid dog handled as a wild animal

Small Rodent, Rabbit:
Chipmunk, porcupine, gerbil, guinea pig, hamster, mouse, rat, squirrel, vole, mole
Rabbit or hare

Large Rodent:
Beaver, woodchuck

Livestock/Captive Wildlife:
Cow, donkey/mule, goat, horse, pony, pig/hog/swine, sheep, zoo animals, marine mammals

[4] Any person with a history of a complete pre-exposure or postexposure vaccination regimen with HDCV, PCECV, or rabies vaccine adsorbed, or previous vaccination with any other type of rabies vaccine and a documented history of antibody response to the prior vaccination.

The intent of the flowchart is to help physicians to evaluate possible rabies exposures occurring in Los Angeles County. **It is not a substitute for the best judgment of the physician who, with the patient, is responsible for the final decision to administer – or not to administer – postexposure prophylaxis.**

Insured patients must obtain rabies PEP from their health care provider. Uninsured patients may receive PEP from Public Health, if an ACDC physician agrees it is indicated. An ACDC physician must contact a Public Health Center to coordinate care**.**

The information presented here has been abstracted from local rabies data and from:

Centers for Disease Control and Prevention. Rabies Prevention – United States, 2008: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR 2008; 57(No. RR-3): 1-36.* http://www.cdc.gov/mmwr/PDF/rr/rr5703.pdf.

Centers for Disease Control and Prevention Use of a Reduced (4-Dose) Vaccine Schedule for Postexposure Prophylaxis to Prevent Human Rabies Recommendations of the Advisory Committee on Immunization Practices *MMWR 2010; 59(No. RR-2: 1-12.* http://cdc.gov/mmwr/pdf/rr/rr5902.pdf.

County of Los Angeles Public Health Immunization Program