

Animal Bites: Information for Health Care Providers

EPIDEMIOLOGY

- ✓ Dog and cat bites are responsible for 1% of emergency room visits each year, accounting for \$30 million in annual health care costs nationwide.
- ✓ In the U.S., dogs are responsible for more than 2/3 of domestic animal bites, causing 19 deaths per year; boys age 5 to 9 years are at the highest risk for injury.

MICROBIOLOGY AND PATHOGENESIS

- ✓ Infection occurs when the oral flora of a biting animal gains entry through breaks in the skin, or when open wounds become contaminated by bacteria in the environment.
- ✓ Bites that penetrate the skin have an infection rate of 6-13%. Wounds cleaned and treated in the emergency department have a rate around 5%.
- ✓ Polymicrobial infection is common, including both aerobic bacteria (e.g. Pasteurella, Streptococcus, and Staphylococcus species) and anaerobic bacteria (e.g. Fusobacterium, Bacteroides, Porphyromonas, and Prevotella). Different animal species have a different spectrum of potential microbes. Cat bites have a higher rate of infection than dog bites.
- ✓ Puncture wounds, hand wounds, and wounds that are greater than 24 hours old are at higher risk for infection.
- ✓ Individuals who are asplenic or immune compromised are at risk for systemic infection.

TREATMENT

- ✓ Immediately wash the wound thoroughly with soap and water.
- ✓ Carefully clean and explore wounds.
- ✓ Irrigate wounds thoroughly with sterile saline.
- ✓ Evaluate wounds for injury to nearby nerves, vessels, tendons, ligaments, joints, and bone. Consider radiography if bone involvement is suspected.
- ✓ Debride, drain, and close wounds as appropriate.
- ✓ Consider obtaining wound cultures for identification and antibiotic sensitivity.
- ✓ Consider prophylactic antibiotics for wounds at higher risk for infection.

- ✓ Obtain the patient's history of tetanus-containing vaccine (DTaP = diphtheria, tetanus, & acellular pertussis; DT = diphtheria & tetanus; Td = tetanus & diphtheria toxoids, Tdap = combined tetanus, diphtheria, & pertussis, TT= tetanus toxoid).
- ✓ Administer a tetanus-containing vaccine if patient:
 - Has had an unknown number or less than 3 doses of tetanus containing vaccine, or
 - Has had 5 or more years since the last dose of tetanus containing vaccine.
- ✓ Administer tetanus immune globulin in addition to a tetanus containing vaccine* if patient:
 - Has had an unknown number or less than 3 doses of tetanus containing vaccine, or
 - Is under 6 months old, and has a mother with an unknown number or less than 3 doses of tetanus containing vaccine at the time of delivery.

* The American Academy of Pediatrics also recommends TIG for HIV positive bite victims.

- ✓ The type of tetanus-containing vaccine given varies with age:
 - Under 7 years of age: give DTaP if pertussis vaccination is not contraindicated
 - Age 7 to 10 years: administer Td
 - Age 11 to 64 years: Tdap is preferred if the patient has never received Tdap; Td is preferred if the patient has received Tdap, or if Tdap is not available
 - Age 5 and older: administer Td
- ✓ Assess the patient's risk for rabies, and administer rabies postexposure prophylaxis using the guide on the back of this page.

FOR ADDITIONAL INFORMATION

- ✓ Assessment of rabies exposure in King County: www.metrokc.gov/HEALTH/providers/epidemiology/rabies/animal-bites.htm
- ✓ Tetanus immunization guidelines: www.cdc.gov/nip/publications/pink/tetanus.pdf
- ✓ Interactive rabies prophylaxis decision trees: www.metrokc.gov/HEALTH/providers/epidemiology/rabies/section6.htm

**Report all King County cases to
Public Health by calling (206) 296-4774.**

Available in alternate formats.

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Rabies Post-Exposure Prophylaxis (PEP) Guide

The following recommendations are only a condensed guide. More detailed information including interactive decision trees is available at <http://www.metrokc.gov/health/providers/epidemiology/rabies/> - you may also call Public Health at (206) 296-4774 to discuss specific cases.

Recommendations of the Advisory Committee on Immunization Practices (ACIP) may be found at <http://www.cdc.gov/mmwr/preview/mmwrhtml/00056176.htm>

In applying the guidelines below, take into account the animal species involved, the circumstances of the bite or other exposure to the animal's saliva, the vaccination status of the animal, and presence of rabies in the geographic region where the bite occurred. Currently in Washington, rabies is endemic among bats.

Many hospitals have rabies human diploid cell vaccine (HDCV) and rabies immune globulin (RIG), but before referring a patient call the hospital emergency department to ask about availability. HDCV may be ordered by physicians from Aventis-Pasteur (1-800-822-2463). RIG may be ordered from the manufacturer (BAYRAB® by Bayer, 1-800-288-8370; IMOGAM® RABIES-HT from Aventis-Pasteur, 1-800-822-2463). Other rabies vaccine include Rabies Vaccine Adsorbed (RVA) (Bioport Company, distributed by Glaxo-Smith Kline in King County via its wholesaler, Physician Sales and Supply, 253-872-9896), and the purified chick embryo cell vaccine RabAvert® (Chiron Corporation, 1-888-244-7668).

Animal Species	Condition Of Animal At Time Of Attack	Treatment Of Exposed Person ¹
Dog, Cat, Ferret	Healthy and available for ten days of observation. If animal becomes sick or dies within the 10 days of observation, have the animal tested for rabies.	Should not begin PEP unless animal develops clinical signs of rabies ^{1,2}
Dog, Cat, Ferret	Known to be rabid or suspected to be rabid or the status of the animal is unknown and the bite was unprovoked. Bites that occurred in a developing country should be considered higher risk as rabies is endemic in some parts of the world and animals are seldom immunized against rabies.	PEP indicated. Give RIG and HDCV as indicated. Report incident to Public Health, (206) 296-4774.
Bat	Regard as rabid unless proven otherwise by laboratory tests.	PEP is indicated if there is a known, or reasonable probability, that direct contact with the bat occurred. Also consider PEP for individuals who awaken in the same room as a bat. Give RIG and HDCV. Report incident to Public Health, (206) 296-4774.
Skunk, Coyote, Raccoon, Bobcat, Bear, Fox, and Other Carnivores	Regard as rabid unless animal proven negative by laboratory tests.	Consider immediate PEP. Report incident to Public Health, (206) 296-4774.
Livestock, Opossums, Rodents, And Lagomorphs (Rabbits and Hares)	Consider individually. Call Public Health as necessary for guidance. Wild opossums rarely have rabies and may be regarded as non-rabid unless the attack is unprovoked or the animal is exhibiting signs of rabies. Rabies postexposure prophylaxis is almost never indicated for bites from squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, mice, other rodents, rabbits, and hares.	

¹All bites and wounds should be thoroughly cleansed immediately with soap and water. If rabies PEP is indicated, both rabies immune globulin (RIG) and human diploid cell rabies vaccine (HDCV) should be given as soon as possible.

²Take the animal to a veterinarian at the beginning of the 10 day observation period. During the observation period for a dog, cat, or ferret, if the animal develops symptoms of rabies, do the following immediately: 1) treat the bite victim with RIG and HDCV, and 2) call 206 296-4880 to make arrangements with the Public Health veterinarian for the symptomatic animal to be euthanized and tested. Holding for further observation is not recommended. Discontinue the vaccine schedule if rabies immunofluorescence tests of the animal are negative.