

Free Influenza Testing During the 2010-2011 Flu Season

To isolate and identify circulating influenza virus strains in Connecticut, the Department of Public Health (DPH) offers free influenza testing. Health care providers may obtain respiratory viral reference collection kits (VRCs) at no cost by calling the DPH Laboratory at 860-509-8501. Questions about specimen collection, handling, or transport should be directed to the DPH Virus Laboratory at 860-509-8553. Questions concerning DPH influenza surveillance efforts, testing for avian influenza or other novel influenza A strains, should be directed to the DPH Epidemiology and Emerging Infections Program at 860-509-7994.

Animal Testing for Potential Human Rabies Exposures – Connecticut, 2003-2008

The Connecticut Department of Public Health (DPH) conducts surveillance for rabies in humans and animals. In 2003, the DPH began collecting information concerning the type of human and domestic animal exposure from the state Laboratory. From 2003–2008, all rabies reports were entered regardless of test result. The exposure classifications in use by the DPH Laboratory were determined by the submitter and included bite, scratch, fight, contact, and unknown. A contact exposure was defined as “touching a suspect rabid wild or domestic animal, or touching the fur of a domestic animal that fought with a potentially rabid wild animal.” The Centers for Disease Control and Prevention (CDC) distinguishes two major categories of rabies exposures, bite and non-bite (1). Therefore, classifications that were not listed in the DPH database as bite exposures were considered non-bite exposures for the purposes of this article.

During 2003–2008, 16,187 animals were submitted for rabies testing to the DPH Laboratory. Of these, 1,250 (8%) tested positive, 343 (2%) were not suitable for testing, and 14,594 (90%) were negative. For exposure assessment purposes,

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animals received that are not suitable for testing are considered positive in the absence of a negative result.

Overall, 13,412 (83%) animals were submitted due to concern for human rabies exposures and included 4,169 (31%) bats, 3,938 (29%) cats, 2,243 (17%) dogs, 1,031 (8%) raccoons, 594 (4%) rodents and 450 (3%) skunks.

Of the submissions with exposure information, 34% were bites and over 66% were due to other contacts (Table 1, page 26). Dogs (82%), rodents (47%) and cats (45%), were most frequently submitted for bites. Bats (89%), raccoons (64%), and skunks (60%) were most frequently submitted for human exposures described as contact. The remaining 2,755 animals were submitted due to concern for domestic animal exposures. Of the 13,412 animals tested that may have exposed humans to rabies, 715 (5%) were positive. Of these, 437 (61%) were classified as contact exposure, and 97 (14%) as bites (Table 2, page 27). The 97 positive animals that had bitten a person included, 47 (48%) raccoons, 19 (20%) skunks, 13 (13%) bats, 13 (13%) cats, and 5 (5%) wild canids. None were dogs or rodents.

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Editorial

Historically in Connecticut, exposures were determined by the submitter and may not necessarily signify an exposure consistent with national guidelines. Exposure requires the presence

of infectious material, considered moist saliva or central nervous system tissue, and a portal of entry for the virus to enter the body. Exposures can be classified as bites and non-bites. Bite exposures are the most definitive to assess and indicate a much higher risk of rabies transmission than non-bite exposures. If the teeth of a potentially rabid mammal penetrate the skin in any way that draws blood it should be considered an exposure. This includes any wound of skinned area of the epidermis, not only puncture wounds.

A non-bite exposure is a contamination of an open wound (including scratches on the skin surface) or mucous membrane with potentially infectious material. Contact with infectious material on intact skin or a fully formed scab, or other contact, such as touching or petting a rabid animal, does not constitute an exposure. It is important to note, once the saliva dries the virus becomes noninfectious.

Rabies virus is not found in other bodily fluids/materials (blood, urine, feces) of animals. Rarely does a non-bite exposure result in rabies transmission. Non-bite exposures with the highest risk include inhalation of large amounts of aerosolized rabies virus, such as by laboratory workers or cavers spending extensive time in high bat density caves, and transplant recipients when the organ is from a patient who was infected with rabies virus. Because there are occasional reports of this type of transmission throughout the U.S., these exposures should be evaluated.

Exposures involving bats, a rabies reservoir in Connecticut, can be difficult to assess due to the minimal trauma associated with most bat bites. The national guidelines indicate that if a bat is found in a room in which someone is sleeping or with someone who cannot communicate (e.g., baby, intoxicated individual, person with severe dementia)

Table 1: Animals tested for rabies by type of human exposure, Connecticut – 2003-2008

Animal Type	Total Animals Tested	No. Human Exposures (%)	Type of Human Exposure				
			Bite (%)	Scratch (%)	Fight (%)	Contact (%)	Unknown (%)
Bats	4,655	4,169 (90)	123 (3)	12 (0.3)	42 (1)	3,693 (89)	299 (7)
Domestic Cats	4,062	3,938 (97)	1,764 (45)	5 (0.1)	547 (14)	1,516 (38)	106 (3)
Domestic Dogs	2,340	2,243 (96)	1,831 (82)	3 (0.1)	23 (1)	307 (14)	79 (4)
Raccoons	1,775	1,031 (58)	100 (10)	10 (1)	29 (3)	658 (64)	234 (23)
Skunks	1,005	450 (45)	41 (9)	9 (2)	10 (2)	270 (60)	120 (27)
Rodents ¹	796	594 (75)	281 (47)	6 (1)	34 (6)	206 (35)	67 (11)
Other ²	567	285 (50)	34 (12)	8 (3)	8 (3)	158 (55)	77 (27)
Groundhogs ³	423	203 (48)	26 (13)	11 (5)	7 (3)	95 (47)	64 (32)
Domestic Hoofstock ⁴	297	294 (99)	7 (2)	0 --	3 (1)	283 (96)	1 (0.3)
Wild Canids ⁵	184	128 (70)	10 (8)	1 (1)	2 (2)	91 (71)	24 (19)
Mustelids ⁶	41	37 (90)	14 (38)	0 --	1 (3)	22 (59)	0 --
Wild Hoofstock ⁷	41	39 (95)	0 --	0 --	3 (8)	35 (90)	1 (3)
Unknown	1	1 (100)	0 --	0 --	0 --	1 (100)	0 --
Total	16,187	13,412 (83)	4,231 (32)	65 (0)	709 (5)	7,335 (55)	1,072 (8)

1. beaver, chipmunk, , flying squirrel, guinea pig, hamster, mole, mouse, muskrat, porcupine, prairie dog, rat, squirrel, vole, (excludes groundhogs)
2. frog, non-human primate, opossum, seal, shrew
3. aka, woodchuck
4. alpaca, cow, donkey, goat, horse, llama, pig, sheep
5. bobcat ,coyote, fox
6. ferrets, fisher cats, mink, otter, weasels (excludes skunks)
7. buffalo, deer, moose

Table 2: Human exposures to animals submitted for rabies testing by test result – Connecticut, 2003-2008.

Type of Human Exposure	Positive	Not Suitable for Testing	Negative	Total
Bite	97 (14)	16 (6)	4,118 (33)	4,231
Contact	437 (61)	219 (82)	6,679 (54)	7,335
Fight	5 (1)	2 (1)	58 (-)	65
Scratch	15 (2)	4 (1)	690 (6)	709
Unknown	161 (22)	26 (10)	885 (7)	1,072
Total	715 (100)	267 (100)	12,430 (100)	13,412

the bat should be tested. If the bat is not available for testing, prophylaxis is recommended because bat bites can go unnoticed. A bat seen flying in other areas of the house does not usually constitute an exposure. In Connecticut, most bat exposures (89%) were classified as contact exposures. Contact exposure was a catch-all classification used by submitters of animals that included unknown contact, not necessarily direct contact with a potentially rabid animal.

On average, nearly 2,700 specimens are submitted each year to the DPH laboratory for rabies testing. Of all animals examined, only 1% (97/16,187) tested positive and were submitted due to a bite exposure to a human. Nearly 800 small rodents were submitted during 2003–2008 for rabies testing and none were positive. In the U.S., small rodents rarely test positive for rabies and are not known to have resulted in any case of human rabies. Unprovoked bites from small rodents can be exposures and should result in consultation with the state or local health department.

Most dogs and cats are submitted because of bites to humans but only 3% of cats and 0.1% of dogs test positive for rabies. Over the 6-year period of 2003–2008, thousands of dogs and cats were also submitted for rabies testing with an exposure category other than a bite. In most circumstances, apparently healthy domestic animals can be held in quarantine for 14 days of observation avoiding needless euthanasia and testing. If the animal becomes ill it should be evaluated by a veterinarian and if rabies is suspected, euthanized and tested.

Animal submissions should be from persons in professions that will be notified of the results and

can provide consultation regarding the need for animal testing. These include Animal Control Officers (ACO), Environmental Conservation Police (ENCON), health care providers, local Health Directors (HD), Nuisance Wildlife Control Operators (NWCO), police officers, and veterinarians. Private citizens should consult with their local health department. Guidance regarding the appropriate submission of animals involved in incidents with people that can result in transmission of rabies virus is also available by contacting the DPH Epidemiology Program at 860-509-7994.

To collect more complete and accurate exposure information, and to reduce the number of unnecessary tests performed at the DPH Laboratory, the submission form was updated and modified. It includes instructions for determining the need for animal testing. The form can be found on the DPH [website](#).

References

1. CDC. Human Rabies Prevention—United States, 2008. MMWR 2008;57-12.

Revised Request for Rabies Examination Form OL97a

The DPH Public Health Laboratory has revised the Request for Rabies Examination Form OL97a. The revised form can be found on the DPH [website](#). Changes include definitions of Submitter's Profession, Type of (Human) Exposure, and Type of Domestic Animal Exposure. Additional information for submitters including Types of Animals Accepted for Rabies Examination and Proper Specimen Packaging can be found on the back of the form.

Remember to submit only animals involved in rabies exposure of humans or domestic animals (bite, mucus membrane or open wound contamination by saliva). Animals not involved in human or domestic animal exposures are **not** to be submitted to the DPH Laboratory without consultation with local or state public health personnel. Only persons in appropriate professions, as listed on the following page under "Submitter," should submit specimens. In case of after hours emergencies call 860-509-8500.

INSTRUCTIONS FOR SUBMITTING SPECIMENS FOR RABIES TESTING

Animals are tested to guide medical management of humans or domestic animals who have interactions with suspect rabid animals. The DPH and local health departments are available to assist persons exposed and responders who may evaluate potential exposures to determine the need for animal testing.

A. Types of animals accepted for rabies examination:

1. Raccoons, skunks, wild carnivores (e.g. fox, coyote, bobcat) and groundhogs that have bitten a person or domestic animal.
2. Bats that have direct contact or are found in a room with a person who cannot communicate seeing it or knowing they may have been bitten (e.g., sleeping person, baby or young child, person with dementia, or someone inebriated).
3. Wild animals must be killed without damaging the head and submitted immediately for examination.

B. Submit for testing ONLY after consultation with the DPH or local health department:

1. Animals that have not bitten a person or domestic animal.
2. Small rodents (e.g. mice, rats, squirrels, chipmunks, moles) and rabbits that have bitten a person or domestic animal. These animals are rarely found to be rabid and rabies in these animals has not been detected in Connecticut.
3. Bats found in a home but not in a room with a person.

C. Submit for testing only if instructed to by an Animal Control Officer:

1. Cats, dogs, and other domestic animals that have bitten a person or domestic animal.
 - These animals should usually be observed in quarantine for 14 days.
 - Contact the Department of Agriculture, Animal Control Division for questions concerning quarantine of domestic animals, (860) 713-2506

NEVER submit live animals. Domestic animals submitted whole must weigh less than 10 lbs. Submit only the head of domestic animals weighing more than 10 pounds. Arrangements for testing of livestock should be made with UCONN.

D. SUBMITTER

1. The authorized person who will be notified of the results and will provide consultation regarding the need for testing the animal (ACO, Environmental Conservation Police (ENCON) Officer, health care provider, local HD, NWCO, police officer, veterinarian, other _____)
2. Local health department will be notified of results from animals submitted by unauthorized submitters.

PROPER SPECIMEN PACKAGING

Double-bag the specimen in leak-proof plastic bags. Place double-bag with specimen on ice in a leak proof container. Deliver specimen(s) to the laboratory as soon as possible.

IMPORTANT: Only ONE specimen per double-bag. Secure paperwork to the outside of the double-bag. Secure second set (copy) of paperwork on the outside of the leak proof container.

LABORATORY HOURS

The Virology Laboratory is staffed Monday - Friday from 7:30 a.m. -4:00 p.m. To submit a specimen after working hours, place specimen(s) into the large silver refrigerator under the East Wing of the DPH State Laboratory, 10 Clinton Street, Hartford. In case of after hours emergencies call 860-509-8500.

REQUISITION FORM

A completed request form must accompany each individual specimen submitted for testing. Please print clearly. **The submitter's phone number must** be included for notification of results. Place the completed request form in an envelope and secure it to the outside of each individual double-bagged specimen being submitted for testing.

ADDITIONAL INFORMATION

- For questions concerning human exposure and prophylaxis, as well as to discuss the possibility of submitting animals uncommon to rabies infection, contact the Connecticut Department of Public Health, Epidemiology Program at (860) 509-7994 or your local health department.
- For questions concerning livestock and domestic animal exposures (e.g. biting, quarantine, vaccination), contact the Department of Agriculture, Animal Control Division or the State Veterinarian at (860) 713-2506.
- For questions regarding submission of livestock for testing (e.g., cost, requirements) contact the UCONN Veterinary Medical Diagnostic Laboratory at (860) 486-3738.
- For questions concerning wildlife (unusual behavior, rabies, exposures to, etc.) contact the Department of Environmental Protection, Wildlife Division at (860) 424-3011. For emergencies call (860) 424-3333.
- For additional information or for reporting incidents of animals biting people or domestic animals, please contact your local Animal Control Officer.

Request for Rabies Examination form OL97a can be found on the DPH Website at www.ct.gov/dph/cwp/view.asp?a=3122&q=396860. The form is in fillable format and can be copied to your computer. To enter information into a field, click in it. Always maintain the original document.

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