

NAME: _____
By: Va: _____

RABIES a.k.a. Hydrophobia

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Introduction:

Rabies is a viral infection of the brain and nervous system that is most often found in wild animals. There are two types of Rabies: Aggressive and Non-Aggressive. Both animals and people are susceptible to Rabies (warm-blooded animals in general). It is found all over U.S. (except for Hawaii) and is found in most other countries.

Transmission:

- Rabies can be spread to humans and animals by a bite from an infected animal or when infected saliva touches an opening in the skin or mucous membranes (nose, eyes, mouth, etc.).
- Rabies can also be transmitted through organ transplant surgery. (RARE).

The Virus:

- The Rabies virus is of the species/ genus Lyssavirus (which are the only viruses known to travel along the nerves after infection). Its infectious particles are cylindrical in shape, which is typical in plant viruses; human viruses are usually cubical in shape.
- The virus has a bullet-like shape.

Symptoms:

- Usually takes 30-50 days for symptoms to occur.
- First symptoms are flu-like: fever, headache, and delirium.
- Muscle spasms and locks
- Foaming at the mouth
- Fear of water (most prominent in males).
- Aggressive disposition (Aggressive Rabies)
- Withdrawn and quiet disposition (N-A Rabies)

Diagnosis:

- Can really only be diagnosed by a doctor or veterinarian. They ask questions about the type of animal the patient encountered.
- They obtain tissue samples (from bite area, etc.) to verify infection and they run various tests on the samples and view them under a microscope as well.
- If you suspect your pet to be infected, take them to vet ASAP.
- If that isn't possible: cage them and observe them for symptoms.
- If you encounter a stray or wild animal, one way to identify if it has rabies is if it is foaming at the mouth.

Prognosis:

- Rabies is usually fatal if not treated immediately: for both animals and humans.
- If treated right away, recovery is expected.
- Sometimes, after recovery, the virus still remains.
- There is NO cure for the rabies virus; (only treatment is VACCINATION.)

Prevention and Avoidance:

- Best precaution is to get yourself and your pets vaccinated before there is a chance to be exposed to rabies.
- Don't go near strays and wild animals.
- If your pet has been hurt by a stray or wild animal, immediately go to the vet to make sure your pet has not been infected with rabies.

History of Rabies:

- Believed to be as old as mankind.
- 1st documented reports are from 23rd century BC from Babylon
- In early 1500s it became an epidemic in Europe and many people died.

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- 1885- Louis Pasteur (French chemist and microbiologist) was 1st to create a post-exposure treatment for Rabies (which we still use today, but more advanced).

Pathology of Rabies:

- Rabies infection is defined by encephalitis (swelling of brain: lethal) and myelitis (swelling of spinal cord/ bone marrow).
- Rabies infection causes cytoplasmic eosinophilic inclusion bodies (Negri bodies) in nerve cells (basically, the virus enters the nerve cells and multiplies within it and is stained readily by eosin).

Other Facts:

- Annual incidences of Rabies in U.S.: 18,000 cases (from rabies shots, rather than actual rabies).
- More than 99% of all human deaths from rabies occur in Africa, Asia, and South America; India alone reports 30,000 deaths annually.
- In Nov. '04: 15-yr. old girl from Wisconsin became 1st person to survive Rabies after full symptoms emerged and without receiving vaccine! Doctors put her in a drug induced coma and gave her many antibiotics, which helped fight the virus.
- Antarctica and Australia are the only two continents where animal rabies is not present.

Important vocabulary:

- Prognosis:
 - A prediction of the probable course and outcome of a disease.
 - The likelihood of recovery from a disease.
- Encephalitis:
 - Swelling of brain: lethal.
- Myelitis:
 - Swelling of spinal cord/ bone marrow.
- Lyssavirus:
 - Type of viruses known to travel along the nerves after infection
- Negri body:
 - An eosinophilic inclusion body found in the cytoplasm of certain nerve cells containing the rabies virus.