



***Learning to Make Rabies History!***

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Connecting Classrooms  
Globally through World Rabies Day!



Title Slide:

***Learning to Make Rabies History!***

***Connecting Classrooms Globally through World Rabies Day!***

***For more information on World Rabies Day: [www.worldrabiesday.org](http://www.worldrabiesday.org)***

## World Rabies Day, 2007



- Take 1-minute to think and write down the answers to the following questions:

*What do you already know about rabies?*

*Why is it important to have a World Rabies Day?*

- ***Have the students take one minute to think to themselves and write down the answers to the following questions:***

What do you already know about rabies?

Why is it important to have a World Rabies Day?

- ***Take two minutes to share and discuss with a partner.***
- ***Take two-five minutes to discuss as a class.***

## Why is learning about rabies important?



- Rabies is 100% preventable yet at least 55,000 humans die from rabies each year around the world, mostly from exposure to dogs.
- A person dies of rabies almost every 10 minutes.
- Almost half of all rabies deaths occur in children under the age of 15 years.
- Many developed countries have vaccines for animals and humans to prevent rabies. These countries might only have a few deaths each year.



### ***Why is learning about rabies important?***

- Rabies is 100% preventable, yet results in an estimated 55,000 deaths each year around the world.
- This means that somewhere in the world, a person dies almost every 10 minutes from rabies.
- Most of all rabies deaths (30-50%) occur in children under the age of 15 years. (This means that elementary and middle school-aged children represent a majority of rabies deaths worldwide.)
- In many developed countries (such as the United States), effective vaccines for dogs and humans makes rabies in humans “rare.”
- Despite that, an estimated 30,000-40,000 people are exposed to rabies each year in the United States and need to get anti-rabies shots. (We will discuss these shots in a few minutes.)
- Most of the rabies exposures in the United States are from bats or other wildlife.

### ***Why is it important to have a World Rabies Day?***

- An estimated 55,000 humans die from rabies each year around the world.
- Rabies is 100% preventable thanks to modern vaccines.
- We have all the tools needed to prevent rabies!
- It is time for us to start “Working together to make rabies history!”

## What you will know and be able to do after this lesson:

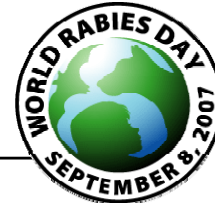


- Why rabies is important
- The history of rabies and what it is
- Which animals are most likely to have rabies
- How you could be exposed to rabies
- The symptoms of rabies
- How to prevent rabies infection



What you will know and be able to do after this lesson:  
(Course Topic Areas)

- Why rabies is important (Slide #3)
- The history of rabies and what it is (Slides 5-8)
- Which animals are most likely to have rabies (Slide #10)
- How you could be exposed to rabies (Slide #9 & #13)
- The symptoms of rabies (Slide #12)
- How to prevent rabies infection (Slides 14-16)



## What is Rabies?

- Rabies has been around for over 4,000 years!
- If someone is sick with rabies, nearly 100% of the time, it will result in death.
- Rabies is caused by a **virus**.



### What is rabies?

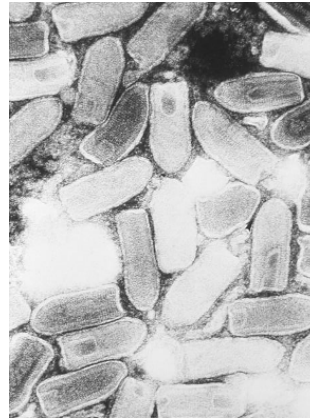
- Rabies has been around for over 4,000 years! We know this from some of the early artwork and writings (as shown on this slide).
- Once symptoms of rabies start, rabies is nearly 100% fatal. (There has only been one person in the United States that has survived rabies virus infection.)
- Rabies is caused by a virus.



## What causes rabies?



- Rabies is caused by a virus which is a microorganism smaller than a bacteria.
- A virus cannot grow unless it is inside a living cell.
- The rabies virus can get into your body and attack your **central nervous system**.

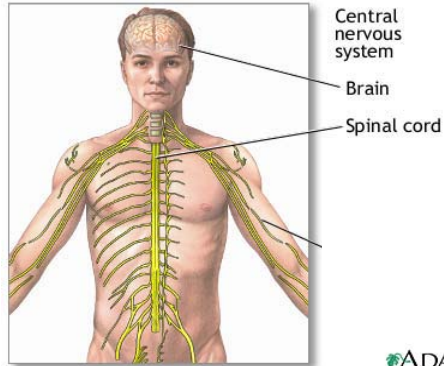


*Picture of rabies virus: Rabies virus is shaped like a submarine.*

What is the rabies virus?

- A virus is a microorganism smaller than a bacteria.
  - A virus cannot grow without a living cell.
  - The rabies virus is shaped like a submarine.
  - The rabies virus that gets into your body and attacks your central nervous system
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- GO TO the next slide to see the definition of the “Central Nervous System.”

## What is the Central Nervous System?



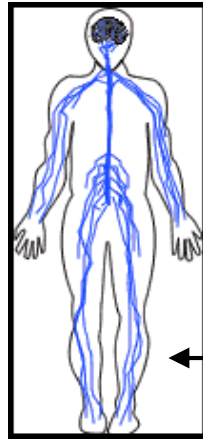
- The central nervous system includes the brain and spinal cord.
- A healthy nervous system is necessary for everything we do: thinking, feeling, seeing, breathing, swallowing, eating, moving, and talking.

ADAM.

### What is the Central Nervous System?

- The central nervous system includes the brain and spinal cord.
- A healthy nervous system is necessary for everything we do: thinking, feeling, seeing, breathing, swallowing, eating, moving, and talking.
- GO TO the next slide to see how the rabies virus infects the body.

## Rabies attacks the Central Nervous System



- Watch as the rabies virus from an exposure on the leg spreads up the spinal cord to the brain and throughout the rest of the body.

Rabies virus entering the body.

What is the Central Nervous System (continued)?

- Watch as an exposure (possibly a bite from a rabid animal) on the leg causes the rabies virus to spread up the spinal cord to the brain and throughout the rest of the body.
- NOTE TO TEACHER: the image should light up when it is shown in “slide show” format.
- Resources:  
<http://www.cdc.gov/ncidod/dvrd/kidsrabies/TheVirus/rabvir.htm>

## How do people get rabies?



- When animals are sick with rabies, their personality changes:
  - Rabid animals may want to bite you and or other animals.
  - Timid animals that get rabies may no longer be afraid of you.
- You can get rabies when an animal with rabies bites you.
- Rabies in dogs is still a big problem in many parts of the world.




### How do people get rabies?







- When animals are sick with rabies, their personality changes:
  - Rabid animals may want to bite people and other animals.
  - Other times, timid animals may no longer be afraid of you.
- You can get rabies when an animal with rabies bites you.
- Rabies in dogs is still a big problem in many parts of the world.
  - In North America, Europe, and other developed countries, dogs can still get rabies, mostly from wildlife, but it is no longer common due to vaccination.

## What kind of animals get rabies?

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- The rabies virus can infect all **mammals**.
- **Mammals** are warm-blooded animals that have hair and mammary glands to produce milk for their babies.
- Animals like frogs, birds, and snakes do not get rabies.





### ***What kinds of animals get rabies?***

- The rabies virus can infect all mammals.
- Mammals are warm-blooded animals that have hair and mammary glands to produce milk for their babies.
- The animals that can transmit rabies may vary based on where you live (geographic location).
- Some of the common animals that can transmit rabies include dogs, bats, raccoons, foxes, cats, and skunks.
- The primary cause of human rabies worldwide is from dogs.
- In a country like the United States, where rabies in dogs has been controlled due to vaccinations, the primary cause of rabies in humans is from wildlife (particularly bats).

- Resources:

CDC Rabies Web site:

<http://www.cdc.gov/ncidod/dvrd/rabies/Epidemiology/Epidemiology.htm>

## Symptoms

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- Headache, fever, sore throat
- Nervousness, confusion
- Pain or tingling at the site of the bite
- **Hallucinations**
  - Seeing things that are not really there
- **Hydrophobia**
  - "Fear of water" due to spasms in the throat
- **Paralysis**
  - Unable to move parts of the body
- Coma and death


### ***Symptoms of rabies virus infection***

The "incubation period" of rabies can vary from person to person (This is the time between exposure and actually getting symptoms). It may take several weeks to months after an exposure, before people become sick with rabies.

The symptoms can include:

- The symptoms start with a headache, fever, and sore throat.
- Nervousness and confusion develops.
- The patient may experience pain or tingling at the site of the bite.
- Many patients have hallucinations which means they see things that are not really there.
  - Case report: One parent of a patient said the patient was, "Cowering in the corner like a caged animal."
- Hydrophobia is also a symptom. Hydrophobia, or the fear of water, is due to spasms in the throat.
  - Case report: One patient said, "I throw up every time I try to eat or drink something. I can't swallow my spit"
- Paralysis or the inability to move parts of the body will develop later in the infection.
- Eventually, the patient experiences a coma and ultimately death.






## Bats & Rabies

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- The main source of rabies in humans in North America is from bats.
- Bat bites can be very small.
- Some people may not realize that they have been bitten.

**Prevention:**

- Don't handle bats.
- If you wake up in a room with a bat, tell your parents and call your local health department and your doctor.



A small bat bite on a finger



### Bats and Rabies

- The main source of rabies in humans in the United States is from bats.
- Bat bites are so small that some people may not realize they have been bitten by a bat.
- Don't handle bats.
- If you discover a bat in the house, especially in the room of a sleeping person or child, treat this situation as though an actual bite may have occurred.
- Have an adult safely capture the bat by following the steps on the weblinks below.
- Call your local health department and your doctor.

### Resources:

For more information on how to remove a bat safely or other facts about bats and rabies, please visit the following Web sites:

CDC Rabies Web site:

[http://www.cdc.gov/ncidod/dvrd/rabies/bats\\_&\\_rabies/bats&.htm](http://www.cdc.gov/ncidod/dvrd/rabies/bats_&_rabies/bats&.htm)

Bat Conservation International: <http://www.batcon.org/home/default.asp>

## What to do if you are bitten by an animal:



- Wash the wound well with soap and water.
- Tell your parents.
- See a Doctor, even if the bite is very small.
- Contact your local health department and animal control officer.



What to do if you are bitten by an animal:

- **Wash the wound well with soap and water for at least 5 minutes.**
- **See a doctor about getting rabies vaccinations (post-exposure).**
- **Contact your local health department and animal control officer.**
  - If the animal that bit you is a pet (dog, cat, or ferret), the animal may be watched for signs of rabies for about 10 days.
  - If it is a wild animal, the animal control people may need to euthanize the animal to test its brain for rabies.

## Prevention after Exposure



- Anti-rabies shots can prevent the disease.
  - At first, 1-3 shots of antibodies are given around the bite.
  - Then, five shots of vaccine are given in the arm over 30 days.
  - Rabies shots help your body make powerful antibodies that kill the virus.



Rabies vaccine being given in the arm.

Prevention after exposure to rabies:

- **Anti-rabies shots can prevent the disease. If you get these shots after you have been exposed and before symptoms start, it can prevent the disease from occurring.**
  - 1-3 shots of antibodies are given around the bite.
  - Five shots of vaccine are given in the arm over 30 days (with the first shot starting on the first day).
- **Rabies shots will help your body make powerful antibodies that kill the virus.**

## Protect Yourself from Rabies



- Vaccinate your pets against rabies.
- Avoid stray pets or wild animals.
- Always ask an owner or adult before petting a dog, cat or other type of animal.
- Never adopt wild animals or bring them into your home.



### Protect yourself from rabies

- Vaccinate pets against rabies.
- Avoid stray pets or wild animals.
- Always ask the owner before petting a dog or cat.
- Never adopt wild animals or bring them into your home.
- Do not try to nurse sick animals to health. It is common to want to rescue and nurse a hurt wild animal, but that animal may have rabies.
- Call an animal control person or animal rescue group if you find a sick animal.
- Make sure that your trash cans and pet foods are secured so that they do not attract wild animals



## Potential Activities

### *Develop a public service announcement about rabies:*

- Imagine you are a veterinarian, write a convincing advertisement that will encourage your clients to get their pets vaccinated against rabies.
- You have been asked by the media (newspaper, radio, or TV) to write a public service announcement for teenagers that will develop an understanding of the risk of rabies and how to prevent the disease.



### Potential Activities:

- As a veterinarian, write a convincing advertisement that will encourage your clients to get their pets vaccinated against rabies.
- You have been asked by the media (newspaper, radio, or TV) to write a public service announcement for teenagers that will develop an understanding of the risk of rabies and how to prevent the disease.

*\*These examples use the RAFTs Technique: Role of the author, the intended Audience, the Format of the requested exercise, the Topic area, and use of Strong verbs.*

- **Resources:** The examples provided use the RAFTs Technique.
  - For more information on RAFTs:  
<http://olc.spsd.sk.ca/DE/PD/instr/strats/raft/>

**To Learn More**

- World Rabies Day Website:
  - [www.worldrabiesday.org](http://www.worldrabiesday.org)
- US Centers for Disease Control and Prevention (CDC) Rabies Website:
  - [www.cdc.gov/rabies](http://www.cdc.gov/rabies)
- CDC's Kids Rabies Website:
  - [www.cdc.gov/ncidod/dvrd/kidsrabies/](http://www.cdc.gov/ncidod/dvrd/kidsrabies/)
- World Health Organization
  - [www.who.int](http://www.who.int)
- Pan American Health Organization
  - <http://www.paho.org/english/ad/dpc/vp/rabia.htm>
- Alliance for Rabies Control
  - [www.rabiescontrol.org](http://www.rabiescontrol.org)



To Learn More:

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US Centers for Disease Control and Prevention (CDC) Rabies Website:

[www.cdc.gov/rabies](http://www.cdc.gov/rabies)

CDC's Kids Rabies Website:

<http://www.cdc.gov/ncidod/dvrd/kidsrabies/>

World Health Organization

[www.who.int](http://www.who.int)

Alliance for Rabies Control

[www.rabiescontrol.org](http://www.rabiescontrol.org)

***If your students have additional questions, they can contact your local or state health department or the U.S. Centers for Disease Control and Prevention ([rabies@cdc.gov](mailto:rabies@cdc.gov)).***