Biosecurity
Routes of Infection
Means of Transmission

When animals get sick, we need to help them get better and make sure other animals don't get sick too. The first step in keeping animals healthy is knowing how animals get a disease and how it spreads from one animal to another.

Objectives
In this lesson, we will introduce you to many animal diseases. Don't worry! You are not expected to know these diseases after you have completed this lesson. They are for examples only.

At the end of this lesson you should be able to:
- Identify five routes of infection
- Describe how diseases are transmitted

What You Need to Know to Prevent a Disease from Spreading
Knowing the answers to the following 6 questions helps us to develop ways to prevent the disease from spreading to other animals:

- Who can get the disease?
- What is the effect does the disease have on the body?
- Where is the disease found in the environment (surface, air, etc.)?
- Why is this disease important to know about?
- How can this disease spread to other groups of animals?
<table>
<thead>
<tr>
<th>Question</th>
<th>Gus's Rabies Story</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the symptoms?</td>
<td>Mammary glands in suspected person</td>
<td>Neural disease in humans</td>
</tr>
<tr>
<td>What is the disease?</td>
<td>Encephalitis</td>
<td>Rabies in dogs</td>
</tr>
<tr>
<td>What is the disease? way humans get the disease?</td>
<td></td>
<td>Humans get the disease through contact with rabid animals</td>
</tr>
<tr>
<td>What are the symptoms? in humans</td>
<td></td>
<td>Fever, convulsions, paralysis</td>
</tr>
<tr>
<td>What is the disease? in animals</td>
<td></td>
<td>Rabies in rabies</td>
</tr>
<tr>
<td>Where is the animal most susceptible?</td>
<td></td>
<td>Rabbits</td>
</tr>
<tr>
<td>What are the symptoms? in animals</td>
<td></td>
<td>Fever, convulsions, paralysis</td>
</tr>
<tr>
<td>What is the disease? in wildlife</td>
<td></td>
<td>Rabies in wildlife</td>
</tr>
<tr>
<td>Where is the animal most susceptible?</td>
<td></td>
<td>Rabbits</td>
</tr>
<tr>
<td>How can this disease spread?</td>
<td></td>
<td>Through contact with rabid animals</td>
</tr>
</tbody>
</table>

In summary, Gus's Rabies Story highlights the importance of recognizing symptoms and taking preventive measures to avoid rabies in humans and animals.
Biosecurity - Routes of Infection - Means of Transmission

**Meet Gus**

- **Who**: A couple of weeks before the show, I put him in the barn with those old cows and I could see his symptoms and they grew, and got this really big d'oe. The day before the show, I went into the barn and I found pus and thin black crust and took my hand and put it in the crust and the crust kind of pop and flake and there was boil in it and it kind of pop and flake. My guess is that it is our tapeworm...

- **Why**: It was not only Gus had tapeworm, a tapeworm that any animal, including humans, can get.

---

**Meet Ben**

- **Who**: Gus
- **What**: Ringworm
- **When**: Anywhere, anytime
- **Where**: Stockyards
- **How**: How can I get my show animal to be the best and living? Contaminated infected material, infection of contact.
- **Why**: A ringworm that spreads from infected skin or hair to non-infected skin or hair.
Biosecurity
Routes of Infection
Means of Transmission

Routes of Infection

What routes of infection were used for Bim and Gus?

Options:
- Inflation
- Mucus Membranes
- In Utero
- Breaks in skin

- Ingestion

Consider these situations and click on the correct answer in the pie chart.

A calf got Johne’s Disease by nursing from an infected mother.

Consider these situations and click on the correct answer in the pie chart.

A baby lamb got scrape by coming in contact with fluids and tissue from the uterus after birth.

Consider these situations and click on the correct answer in the pie chart.

A young goat kept in a wood pen in an old barn got ringworm.

Consider these situations and click on the correct answer in the pie chart.

This calf on pasture seen breathing hard suddenly died. Tests show the cause died from pneumonia caused by a fungus called aspergillus.

Consider these situations and click on the correct answer in the pie chart.

Some calves were born with cloudy eyes two months after new cows were added to the herd. One of the cows was later found to be infected with Bovine Viral Diarrhea (BVD).