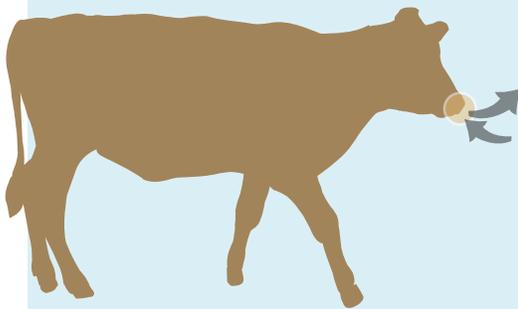


Bovine Disease Exposure Routes: Aerosol

Aerosol: Droplets containing disease agents pass through the air and are inhaled.



	Zoonotic Disease	Foreign Animal Disease
Anthrax (<i>Bacillus anthracis</i>)	●	
<i>Aspergillus spp.</i>		
Bovine Respiratory Syncytial Virus (BRSV)		
Bovine Viral Diarrhea (BVD)		
Contagious Bovine Pleuropneumonia		●
Foot and Mouth Disease (FMD)	* (in Zoonotic column)	●
<i>Histophilus somni</i> (TEME)		
Infectious Bovine Rhinotracheitis (IBR, red nose)		
Malignant Catarrhal Fever—African Form		●
Malignant Catarrhal Fever—North American Form		
<i>Mannheimia (Pasteurella) haemolytica</i>		
Melioidosis (<i>Burkholderia pseudomallei</i>)	●	
<i>Mycoplasma bovis</i>		
Parainfluenza Virus (PI3)		
Q Fever (<i>Coxiella burnetii</i>)	●	
Tuberculosis (<i>Mycobacterium bovis</i>)	●	
Vesicular Stomatitis Virus (Indiana subtype 1; New Jersey subtype)	●	
Vesicular Stomatitis Virus (Indiana subtypes 2,3)	●	●

- **Zoonotic Disease:** Spread between animals and humans
- **Foreign Animal Disease (FAD):** Previously eradicated or never found with the U.S. animal population; if diagnosed, it is reportable to state and federal animal health authorities.

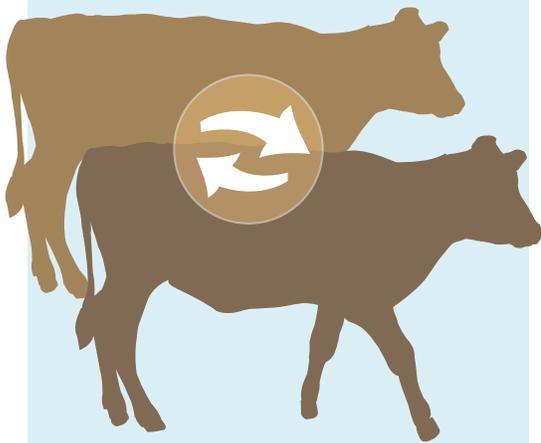


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* Foot and Mouth Disease—on very rare occasions, FMD virus has been reported to cause *mild* lesions in people. It is not considered to be a public health concern.

Bovine Disease Exposure Routes: Direct Contact

Direct Contact: The disease agent in blood or saliva directly touches open wounds, mucous membranes, or the skin through nose-to-nose contact, rubbing, or biting.



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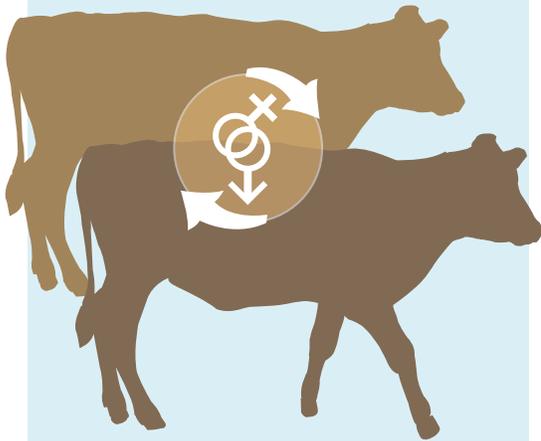
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	Zoonotic Disease	Foreign Animal Disease
Anthrax (<i>Bacillus anthracis</i>)	●	
Brucellosis (<i>Brucella abortus</i>)	●	
Contagious Bovine Pleuropneumonia (CBPP)		●
<i>Corynebacterium pseudotuberculosis</i> (Ulcerative lymphangitis)		
<i>Dermatophilus congolensis</i> (Rainscald, rainrot)	●	
External parasites		
Foot and Mouth Disease (FMD)	* (in red)	●
Foot rot (<i>Fusobacterium necrophorum</i>)		
Hairy heel warts		
Infectious Bovine Rhinotracheitis (IBR, red nose)		
Leptospirosis (<i>Leptospira spp.</i>)	●	
Lumpy jaw (<i>Actinomyces bovis</i>)		
Lumpy Skin Disease Virus		●
Malignant Catarrhal Fever-African Form		●
Malignant Catarrhal Fever-North American Form		
Mastitis, coliform		
Mastitis, contagious		
Pinkeye (<i>Moraxella bovis</i> , <i>Mycoplasma bovoculi</i> , and others)		
Pseudocowpox Virus	●	
Pseudorabies Virus		
Q Fever (<i>Coxiella burnetii</i>)	●	
Rabies	●	
Rinderpest		●
Ringworm (<i>Microsporium spp.</i> , <i>Trichophyton spp.</i>)	●	
Tetanus (<i>Clostridium tetanii</i>)	●	
<i>Trueperella</i> (<i>Archanobacterium</i>)		
Vesicular Stomatitis Virus (Indiana subtype 1; New Jersey subtype)	●	
Vesicular Stomatitis Virus (Indiana subtypes 2,3)	●	●
Warts		
Wooden tongue (<i>Actinobacillus lignieresii</i>)		

* Foot and Mouth Disease—on very rare occasions, FMD virus has been reported to cause *mild* lesions in people. It is not considered to be a public health concern.

Bovine Disease Exposure Routes: Reproductive (Direct)

Reproductive: A subtype of direct contact involving exposure to the disease agent during mating (semen) or during pregnancy (in utero).



	Zoonotic Disease	Foreign Animal Disease
Bluetongue Virus		
Bovine Leukemia Virus (BLV)		
Bovine Viral Diarrhea (BVD)		
Brucellosis (<i>Brucella abortus</i>)	●	
Contagious Bovine Pleuropneumonia		●
Infectious Bovine Rhinotracheitis (IBR, red nose)		
Johne's disease (<i>Mycobacterium avium ssp. paratuberculosis</i>)		
<i>Neospora caninum</i>		
Trichomoniasis (<i>Tritrichomonas foetus</i>)		
Tuberculosis (<i>Mycobacterium bovis</i>)	●	
Vibrio (<i>Campylobacter spp.</i>)		

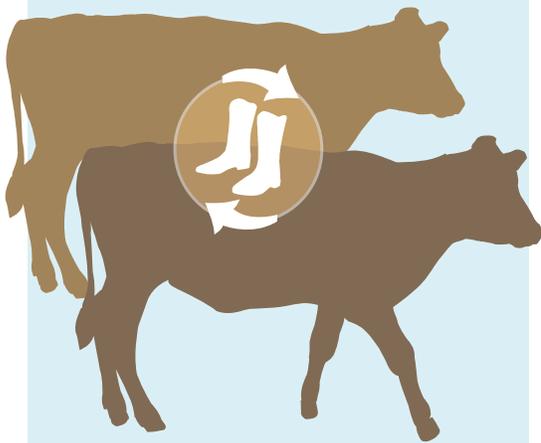
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Bovine Disease Exposure Routes: Fomite

✗ Fomite: An inanimate object carrying a disease agent from one susceptible animal to another.



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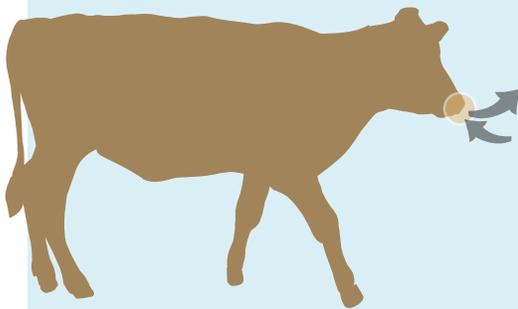
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	Zoonotic Disease	Foreign Animal Disease								
		Feed/Water Equipment	Footwear	Handling Equipment	Housing	Milk/Milking Equipment	Soil	Treatment Equipment	Water	Wires
Anaplasmosis (<i>Anaplasma marginale</i>)								✗		
Anthrax (<i>Bacillus anthracis</i>)	●					✗	✗		✗	
Bluetongue Virus								✗		
Bovine Leukemia Virus (BLV)								✗		
Bovine Viral Diarrhea (BVD)								✗		
Coccidiosis (<i>Eimeria spp.</i> , <i>Isospora spp.</i>)		✗	✗							
Coronavirus		✗	✗		✗					
<i>Corynebacterium pseudotuberculosis</i> (Ulcerative lymphangitis)							✗	✗		
<i>Dermatophilus congolensis</i> (Rainscald, rainrot)	●			✗						
Digital dermatitis (Hairy warts)			✗					✗		
Foot and Mouth Disease (FMD)	✱ ●	✗	✗	✗	✗	✗		✗		
Lumpy jaw (<i>Actinomyces bovis</i>)		✗								✗
Mastitis, coliform					✗					
Mastitis, contagious						✗				
Ringworm (<i>Microsporum spp.</i> , <i>Trichophyton spp.</i>)	●			✗						
Rotavirus		✗	✗		✗					
<i>Salmonella spp.</i>	●	✗	✗		✗					
Tetanus (<i>Clostridium tetanii</i>)	●						✗			✗
Vesicular Stomatitis Virus (Indiana subtype 1; New Jersey Subtype)	● ●	✗				✗		✗		
Vesicular Stomatitis Virus (Indiana subtypes 2, 3)	●	✗				✗		✗		
Warts (bovine papillomavirus)		✗	✗	✗	✗	✗				

✱ Foot and Mouth Disease—on very rare occasions, FMD virus has been reported to cause *mild* lesions in people. It is not considered to be a public health concern.

Bovine Disease Exposure Routes: Oral

Oral: Consuming disease agents in contaminated feed, water or licking/chewing on contaminated environmental objects.



- **Zoonotic Disease:** Spread between animals and humans
- **Foreign Animal Disease (FAD):** Previously eradicated or never found with the U.S. animal population; if diagnosed, it is reportable to state and federal animal health authorities.

	Zoonotic Disease	Foreign Animal Disease
Anthrax (<i>Bacillus anthracis</i>)	●	
Blackleg (<i>Clostridium chauvoei</i>)		
Botulism (<i>Clostridium botulinum</i>)		
Bovine Spongiform Encephalopathy	●	
Bovine Viral Diarrhea (BVD)		
Brucellosis (<i>Brucella abortus</i>)	●	
Circling disease (<i>Listeria monocytogenes</i>)	●	
Clostridial Enterotoxemia		
Coccidiosis (<i>Eimeria spp.</i> , <i>Isospora spp.</i>)		
Coronavirus		
<i>Cryptosporidium parvum</i>	●	
<i>Escherichia coli</i> (<i>E. coli</i>)	●	
Foot and Mouth Disease (FMD)	* ●	●
<i>Giardia spp.</i>	●	
Internal parasites		
Johne's disease (<i>Mycobacterium paratuberculosis</i>)		
Leptospirosis (<i>Leptospira spp.</i>)	●	
Lumpy jaw (<i>Actinomyces bovis</i>)		
Melioidosis (<i>Burkholderia pseudomallei</i>)	●	
<i>Mycoplasma bovis</i>		
<i>Neospora caninum</i>		
Rotavirus		
<i>Salmonella spp.</i>	●	
Tuberculosis (<i>Mycobacterium bovis</i>)	●	
Wooden tongue (<i>Actinobacillus lignieresii</i>)		

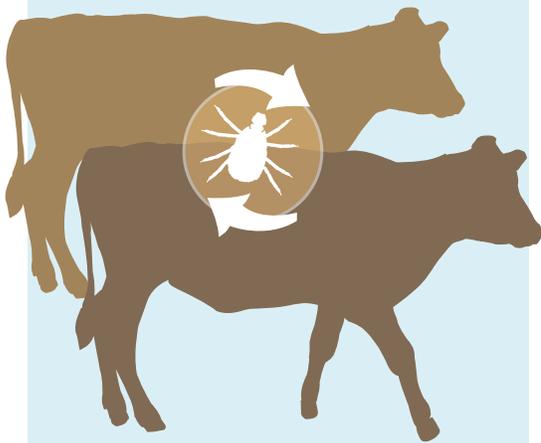


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Bovine Disease Exposure Routes: Vector

Vector: An insect carrying a disease agent exposes an animal through biting or contact with mucous membranes.



- **Zoonotic Disease:** Spread between animals and humans
- **Foreign Animal Disease (FAD):** Previously eradicated or never found with the U.S. animal population; if diagnosed, it is reportable to state and federal animal health authorities.

	Zoonotic Disease	Foreign Animal Disease
Akabane—Mosquitoes		●
Anaplasmosis (<i>Anaplasma marginale</i>)—Ticks		
<i>Babesia</i> spp. (Texas cattle fever, tick fever, redwater)—Ticks		●
Bluetongue Virus—Midges		
<i>Corynebacterium pseudotuberculosis</i> (Ulcerative lymphangitis)—Flies		
<i>Dermatophilus congolensis</i> (Rainsores, rainrot)—Flies, ticks	●	
Grubs (<i>Hypoderma</i> spp.)—Flies		
Heartwater (<i>Cowdria ruminatum</i>)—Ticks		●
Lumpy Skin Disease Virus—Mosquitoes, Flies		●
Mastitis, contagious—Flies		
Pinkeye (<i>Moraxella bovis</i> , <i>Mycoplasma bovoculi</i>)—Flies		
Q Fever (<i>Coxiella burnetii</i>)—Ticks	●	
Rift Valley Fever—Mosquitoes	●	●
Screwworm myiasis—Fly larvae		●
Schmallenberg Virus—Midges, Mosquitoes		
Vesicular Stomatitis Virus (Indiana subtype 1; New Jersey subtype) —Mosquitoes	●	
Vesicular Stomatitis Virus (Indiana subtypes 2,3) —Mosquitoes	●	●



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