

Johne's Disease (JD) or Paratuberculosis in Sheep and Goats

Johne's disease (JD) is a wasting disease caused by the bacteria *Mycobacterium avium paratuberculosis* (MAP), which can be zoonotic.

Life Cycle

- MAP enters the body when the animal ingests bacteria shed through feces, colostrum, and milk.
- Infection with MAP causes the small intestine to swell. This immune response prevents the animal from absorbing nutrients.
- JD progresses through four stages.

Stage I.

Silent, subclinical, nondetectable infection

- No clinical signs
- Undetectable in a blood test
- No shedding

Stage II.

Subclinical shedders

- No clinical signs
- May be detectable in a blood test
- Small amount of shedding in feces

Stage III.

Clinical disease

- Weight loss
- Detectable
- Large amount of shedding in feces

Stage IV.

Emaciated animals with fluid diarrhea

- Emaciation, dehydration, intermittent diarrhea
- Detectable
- Extreme shedding in feces

Signs

- Chronic weight loss despite a normal appetite.
- Exercise intolerance.
- Decreased production.
- Diarrhea and submandibular edema ("bottle-jaw"; more common in cattle than in small ruminants).

Diagnosis

- Most often diagnosed at necropsy.
- Enlarged intestinal lymph nodes and thickened intestinal wall.
- Bacterial culture and blood tests.
- Not very accurate in small ruminants.

Prevention and Control

- Avoid manure contamination.
- Don't give lambs/kids colostrum from a JD-positive ewe/doe.
- Maintain a closed herd.
- Conduct annual blood testing.
- Testing is especially important when a positive animal is found in a herd.
- Blood tests are the most accurate way to diagnose JD in an animal.
- Cull infected animals.
- Till the pasture; MAP can live on the ground for up to 1 year.

Treatment Plan

- Immediately isolate the animal.
- Wear PPE such as gloves to avoid contamination.
- Euthanize the infected animal.
- Perform a necropsy to confirm JD diagnosis.
- Properly dispose of the animal and all items that had contact with it.
- Follow the prevention and control protocol and monitor the flock/herd for signs of JD.
- **Always consult a veterinarian if an animal is suspected of having Johne's disease.**



An emaciated sheep with Johne's disease. Image generated by Microsoft Copilot.



Annual blood testing for Johne's disease is important for preventing illness in the herd.

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