

# Border Disease (Hairy Shaker Disease)

*A PowerPage Presented By*



Border disease is a viral disease, primarily of sheep, that causes lambs with several congenital abnormalities that leads to the name “hairy shaker disease”. As long as you are aware of a couple of key features of this disease, you should be able to recognize it on a board exam. This PowerPage briefly highlights those features.

## Key Points

- Problem if virus acquired **early in pregnancy**
- Can cause **abortion, fetal resorption, mummification**, death
- Classic finding is **underweight lambs** with **muscle tremors** and **hairy fleece**
- No effective treatment or vaccine

## Clinical Features

- Caused by a **pestivirus** that is related to BVD and classic swine fever viruses
- May affect > 50% of lambs when initially introduced into a flock but frequently becomes endemic
- Mainly causes problems if virus is acquired early in pregnancy, causing fetal resorption, death, or congenital abnormalities
- Clinical signs in herds include:
  - Decreased pregnancy rate
    - Outbreaks of poor fertility
- Clinical signs seen in lambs include:
  - **Undersized at birth**
  - **Excessively hairy or pigmented fleece**
  - **Muscle tremors**
  - Musculoskeletal defects (brachygnathia)
- Pathologic findings in lambs:
  - Cerebral **cavitations**
  - Glial cell hyperplasia and **demyelination** of CNS white matter
- Treatment/Prevention
  - There is **no effective treatment**
  - Available BVD vaccines are not effective due to differing antigens
  - Dams with affected lambs should have antibody titers
    - High levels imply subsequent immunity
    - Low levels indicate possible persistent infection
  - Affected lambs that survive should not be used for breeding
    - Can mingle with others well in advance of breeding season to provide opportunity for immunity to develop