**Johne's Disease**

*Mycobacterium avium subsp. paratuberculosis* (MAP)

**Presentation:** Thin, older dairy cow, chronic diarrhea, good appetite at first

**Bovine**
- Alert, no fever
- **Chronic/intermittent** diarrhea
- Loose → pea soup → watery
- Appetite good at first
- Milk production ↓ s w/ protein levels
- Weight loss, debilitation, emaciation
- Submandibular, ventral edema

**Sheep/Goats**
- **Weight loss is #1; Weakness**
- Diarrhea not common, intermittent
- Wool break - shed wool/hair easily;
- Submandibular edema without edema
- Decreased milk production

**Necropsy:**
- Thickened, **corrugated intestine**, esp terminal ileum; enlarged **edematous lymph nodes**
- **Foci of caseation w/ calcification of intestinal wall and lymph nodes**; enlarged distal mesenteric lymph nodes

**Epidemiology/Transmission:**
- **#1 mode transmission** Fecal-oral; also in colostrum, milk; intrauterine
  - Shedding begins prior to onset of C/S
  - “SUPER-Shedder” cows may pass 10⁶ CFU/gram feces
  - *“Silent” shedders* are #1 mode of transmission
- If clinical signs evident, **ATH** is inevitable

**Test of Choice:** Culture *M. paratuberculosis*, feces or postmortem specimen
  - Culture takes weeks, use USDA approved labs
  - Herd testing NOT useful; wastes resources unless mgt. is good

**Treatment/Control:** No satisfactory treatment – **CULL clinically affected animals**

**Pearls:** REPORTABLE in Sheep/Goats in all US states; in some states for CATTLE
- **TOUGH BUG-Survives > 1yr in soil**, longer in water; survives pasteurization!

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**Zuku Review FlashNotes™ Classic Question(s):**

What is the primary mode of transmission of *Mycobacterium avium subsp. paratuberculosis*?

What is the gold standard test and which government agency is approved to test for *Mycobacterium avium subsp. paratuberculosis*?

What is the prognosis for a cow with clinical signs of *Mycobacterium avium subsp. Paratuberculosis* infection?

What is the most appropriate action to take if a cow tests positive for *Mycobacterium avium subsp. Paratuberculosis*?

How long can *Mycobacterium avium subsp. Paratuberculosis* survive in soil?