

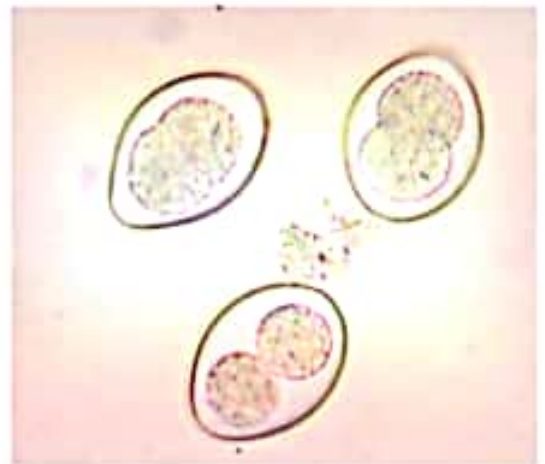
# Coccidiosis

## Parasite, Not a Worm

- Protozoa, single celled organism
- Mostly the genus *Eimeria* in sheep and goats
- Can survive in environment for year or more in right conditions (i.e. warm/hot; moist)



[www.nadis.org.uk/bulletins/coccidiosis-in-lambs.aspx](http://www.nadis.org.uk/bulletins/coccidiosis-in-lambs.aspx)



[www.britannica.com/science/coccidium](http://www.britannica.com/science/coccidium)

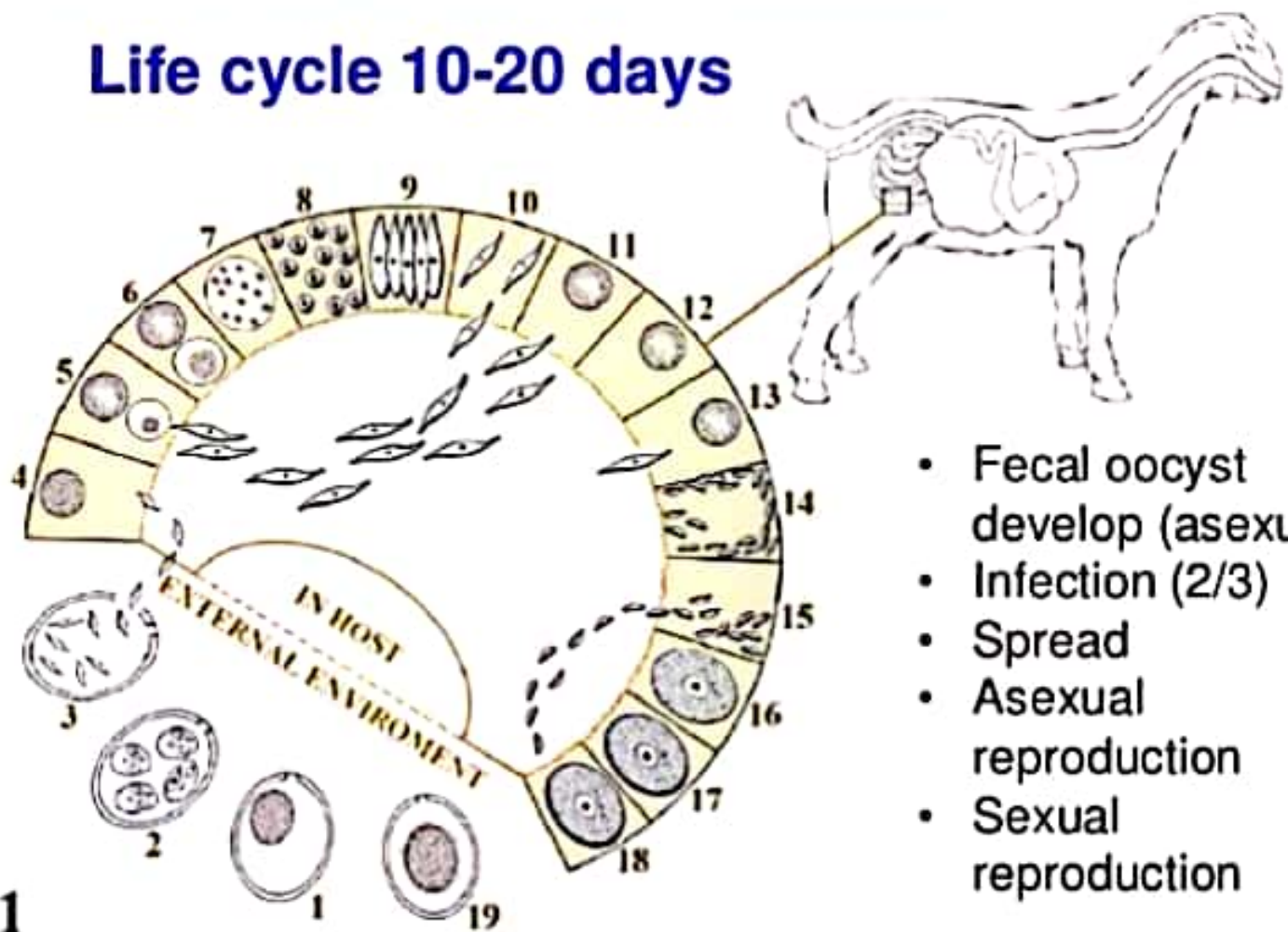
Species
Sheep
Sheep
Goat
Goat
Goat
Goat

Pre-Patent Period	Pathogenicity
15 to 20 days	++
12 to 15 days	+++
20 days	++
14 to 23 days	++
10 to 13 days	+++
17 to 20 days	++

- Many species, not all cause disease
- Species-specific (at least 10 each sheep/goats)
- Immunity to cocci occurs with age/exposure
- Pre-patent period (time from ingestion to passing eggs in feces; i.e. life cycle)

[https://www.uoguelph.ca/~pmenzies/PDF/Handbook/Handbook\\_Coccidia\\_2012.pdf](https://www.uoguelph.ca/~pmenzies/PDF/Handbook/Handbook_Coccidia_2012.pdf)

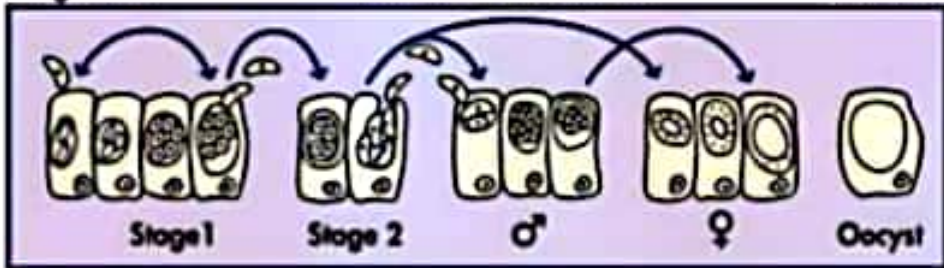
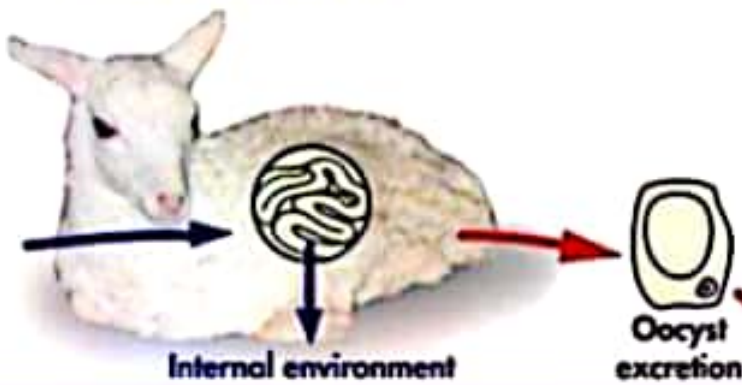
# Life cycle 10-20 days



- Fecal oocyst develop (asexual)
- Infection (2/3)
- Spread
- Asexual reproduction
- Sexual reproduction

[http://www.revmedvet.com/2017/RMV168\\_9\\_20.pdf](http://www.revmedvet.com/2017/RMV168_9_20.pdf)

# Life cycle



## External environment



One oocyst can destroy millions of cells (50 million+)

Resistant to many common disinfectants (10% ammonia); sunlight

Life cycle self-limiting if no reinfection

Oocyst infectious in 2 -7 days, temperature and humidity dependent

# Symptoms

- Diarrhea (sometimes containing blood or mucus)/straining (prolapse?)
- Stomach pain
- Weakness
- Dehydration
- Off feed/reduced intake/FE
- Weight loss/poor growth (subclinical too)
- Anemia
- Wool breaking/rough hair coat
- Death



# Prevention

- Young animals under stress are most likely to get it – i.e. weaning, disease, transport, nutritional and other stresses
- Avoid mixing young/old animals or following young with older animals in pens/pastures
- Keep lambing/kidding areas clean with fresh bedding
- Clean well between groups of young animals in pens/paddocks



# Prevention

- Avoid over-crowding animals in pens, pastures or shelters
- Keep housing, pens, feeders and water sources clean
- Pay attention to pasture areas where animals congregate, especially if moist areas without direct sunlight





## How is coccidia transmitted?

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- Transmission is oral; ingestion of infective oocysts.
- Adult animals pass infective stage of the parasite into their manure.
- Then, there is fecal contamination of the environment: hay, grain, bedding, pasture, teats, feeders, waterers, etc.
- Clinical disease develops, 14-17 days after infection with pathogenic levels of oocysts.



## How is coccidiosis diagnosed?

1. Clinical findings
2. Farm history
3. Microscopic evaluation
4. Post-mortem examination



# Prevention of coccidiosis

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## GOOD ANIMAL HUSBANDRY

- Hygienic conditions
- Good nutrition
- Reduce stress factors

## ANTICOCCIDIAL THERAPY

- Feed
- Minerals
- Water
- Milk replacer
- Drench

## Treatment of coccidiosis

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- No medications are FDA-approved to treat coccidiosis in sheep/goats; extra label drug use (VCPR) is required.
- Amprolium (Corid®) is available over-the-counter, but water soluble sulfa antibiotics must now be obtained from a veterinarian (Rx).
- Consult with your veterinarian for proper dosages and withdrawal periods.

Drug	Tradename
Sulfonamides (sulfa antibiotics)	Di-Methox® Sulmet® Albon®
Amprolium	Corid®

*Lambs/kids with clinical disease should be individually treated (drenched), usually for 5 days. Sick animals won't likely drink enough water.*

## Supportive therapy for lambs/kids with coccidiosis

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- Fluid therapy
- Antidiarrheals
- Probiotics (yogurt)
- Nutritional support
- Low stress environment
- Palatable feed

Sometimes damage is permanent.

