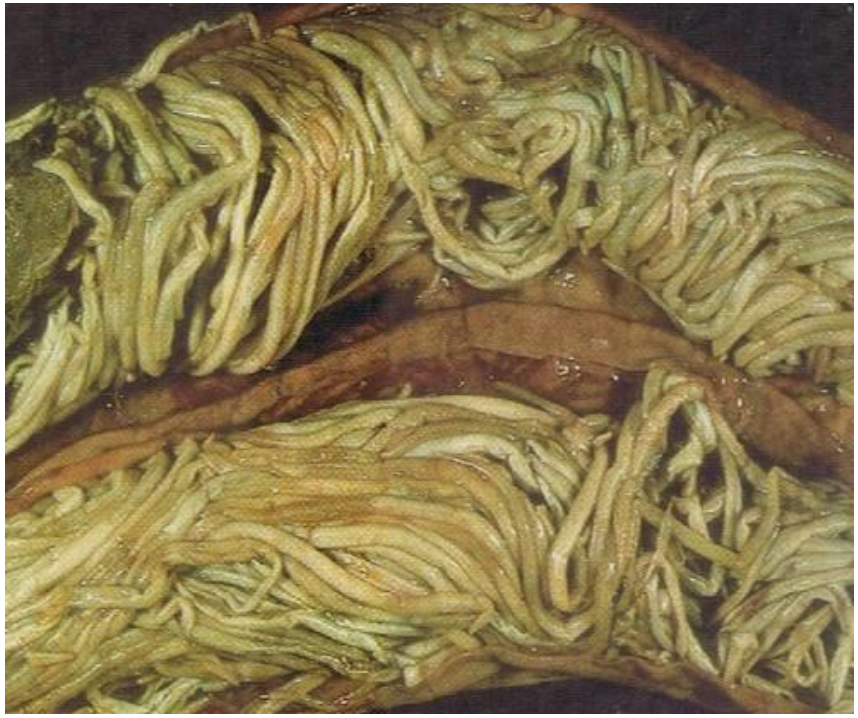
Parascaris equorum

(Round worms)

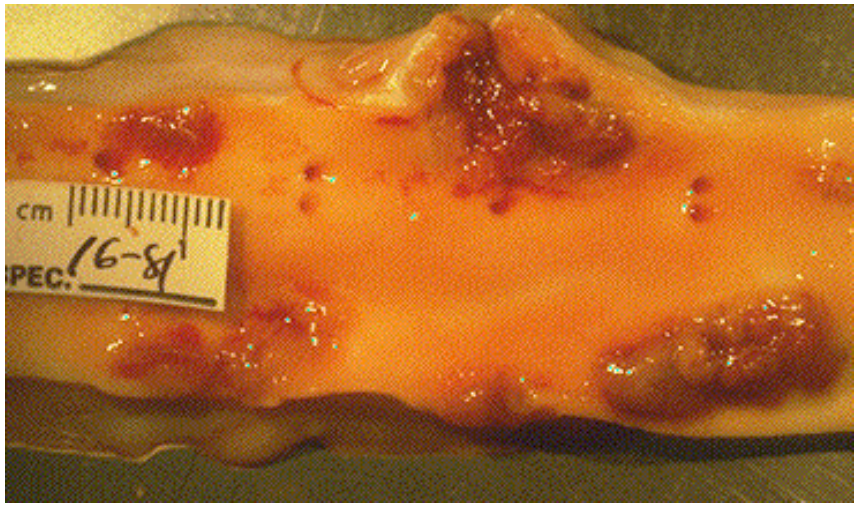
Eggs are ingested and then travel through the small intestine, liver and lungs before being swallowed a second time and settling in the small intestines. This parasite causes inflammatory reaction and mechanical damage from migration tracts. Adults can cause small intestinal impaction. The clinical signs usually appear in horses 3-9 months of age. Foals will have a decreased appetite and slow growth rate. You may also notice a dull dry hair coat, dry skin and sometimes a potbelly appearance. Testing a horses stool will allow identification of eggs. If a heavy burden is suspected, Fenbendazole is the more appropriate choice as it more slowly kills the worms to reduce the chances of impaction from large numbers of parasite deaths. Ivermectin can be used to kill the larval stages of the worm which lives in the intestinal mucosa. It takes 12 weeks for this parasite to grow to a mature egg laying adult.



Strongylus vulgaris

(Large Stronglyes/Blood worms)

After the eggs are ingested, this parasite infects the large intestine of the horse. They feed on blood and migrate up the arteries of the intestines. When large numbers of larvae are present, the intestine the horse may become clinically sick showing signs of fever, diarrhea, poor appetite, weight loss, dullness, colic and possibly even death. With chronic infections, intermittent recurrent colic is a major indicator of disease. This parasite can be diagnosed on fecal flotation tests and is best treated with moxidectin or fenbendazole, or pyrantel pamoate against the adults and larval stages. It takes 24 weeks for this parasite to grow to a mature egg laying adult.



Anoplocephala Magna/Perfoliata

(Tapeworm)

This parasite lives at the junction of the small and large intestines (ileo-cecal junction). The parasite can be infect any age horse over 6 weeks of age and is usually asymptomatic (no visible signs). The horse may have a slower growth rate or seem to lose condition and in some cases have mild diarrhea. In more severe cases, colic and intussusception can occur. Portions of the worms may be visible by the naked eye in the horse's feces. Segments passed in the feces then break up to eggs which area eaten by forage mites. The mites are then ingested inadvertently when the horse grazes and the larval parasite survives and migrates to the small intestines where it grows to an adult. This parasite is diagnosed with a fecal examination where both the adults and the eggs may be present. Since there is intermittent shedding, fecal tests will often miss active infections. Treatment usually consists of praziquantel or a double dose of pyrantel pamoate (Strongid T) which will kill the adult worms. It takes 6 weeks for this parasite to grow to a mature egg laying adult.

Cyathostomes

(Small strongyles)

This parasite forms cysts in the wall of the cecum and colon in the horse. As the larvae emerge from the cysts they damage the lining and cause inflammation which can interfere with digestion and absorption of nutrients. The horse may show clinical signs including anorexia, weight loss, diarrhea and colic. Severe emaciation can result with long term infections. In northern climates a severe acute syndrome is occasionally seen due to large numbers of larva emerging from the cysts at one time. This is called Acute Larval Cyathostomiosis. This parasite can be diagnosed on fecal flotation tests and is treated with ivermectin, pyrantel pamoate for the adults. Often fecal tests underestimate the number of parasites present. The encysted larval stages of this parasite require moxidectin or 5 days of double dose fenbendazol (Panacur Power Pack) to successfully treat. It takes 6 weeks for this parasite to grow to a mature egg laying adult.

Oxyuris equi

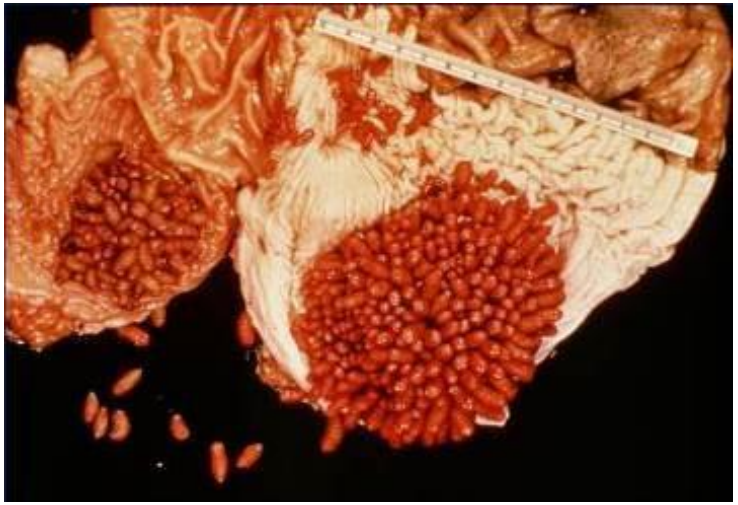
(Pinworms)

This parasite can affect all ages of horse and lives in the small colon but will migrate down colon and out rectum to deposit eggs around the anus. The most noticeable clinical sign will be anal pruritus (itching) caused by the gelatinous secretion of the adult worm containing 8-60 thousand eggs. The horse will rub their rear end against any surface to scratch and will often cause self-trauma and hair loss. The animals will be restless due to the pruritus and not eat properly. Loss of condition can occur. A yellow/gray discharge may be noticed coming from the anus. Flakes from gel stick to everything and promote transfer to another host. This worm can be diagnosed by examining the discharge for eggs or "trapping" the worm with scotch tape. Fenbendazole, pyrantel pamoate, and ivermectin are all effective to eliminate the adult infection. In foals fenbendazole should be the drug of choice. It takes 20 weeks for this parasite to grow to a mature egg laying adult.

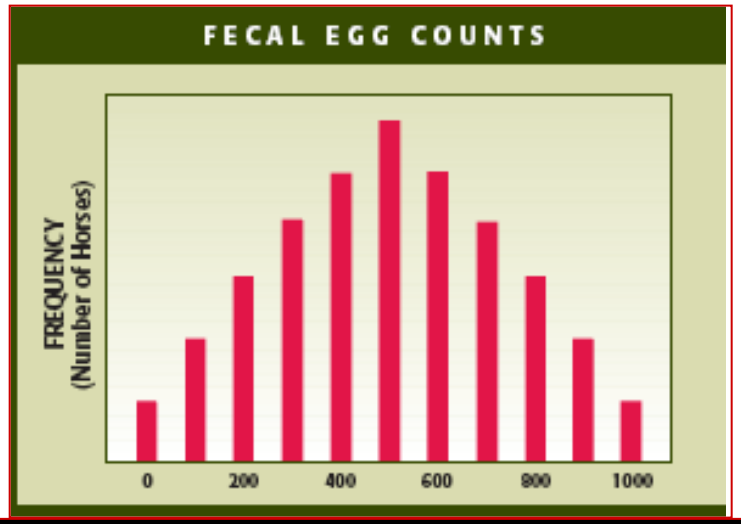
Gasterophilus intestinalis

(Stomach Bots)

This parasite is often asymptomatic (no visible signs) however can cause lesions in mouth, esophagus and stomach that may make the horse reluctant to eat. Adult fly superficially resembles a honeybee and deposits fertilized eggs on hairshafts of legs. The horse ingests the eggs while grooming itself and the eggs then hatch in the mouth and tunnel under the surface of the tongue and mouth. After this they pass to stomach and stay there for several weeks to months. Once ready, they are passed in the manure and mature into an adult fly. They cannot be detected on stool samples in most cases. Treatment with an ivermectin or moxidectin product will help eliminate this infection. Should be done one month after the first frost in cold areas. Also, it can help to brush eggs off the horse's legs. It takes up to a year for this parasite to grow to a mature egg laying adult fly.



Performing Properly Timed Fecal Parasite Testing is Essential!



≥ 80 % of horses are low or moderate egg shedders, ≤ 20% are high shedders

WHAT DO WE DO WITH A FECAL SAMPLE

- Fecal egg count reduction test (FECRT)
  - Perform a FEC prior to deworming
  - Perform a FEC 10 – 14 days after deworming
- Calculate % reduction of egg count by comparing the FECs pre & post-treatment
  - Pre treatment EPG – Post treatment EPG / Pre treatment EPG X 100 = % reduction
- Resistance is suspected if:
  - < 98 – 99 % egg reduction after Quest or Ivermectin
  - < 90 % egg reduction after Strongid or Panacur

LIMITATIONS

- Fecal testing often miss tapeworm eggs
- Fecal testing does not detect encysted small strongyles
- Fecal testing does not reflect the juvenile stages of parasites / parasites still in their prepatent period

HOW TO COLLECT A FECAL SAMPLE

- One fresh, fecal ball per horse
- Zip-lock baggie; remove all the air
- Refrigerate if you cannot submit the sample within a few hours
- Identify sample with horse's name & date
- Include date of last deworming & drug used

WHEN TO COLLECT A FECAL SAMPLE

- Quest: Wait ≥ 16 weeks
- Ivermectin: Wait ≥ 12 weeks
- Strongid: Wait ≥ 9 wks
- Panacur: Wait ≥ 9 wks

Example Annual Wellness Plan (Northeast USA)

Spring:

- Preventative care examination (physical examination including weight and body condition scoring). This is also a good time to discuss health, lifestyle and nutrition concerns.
- Wellness blood work (Complete Blood Cell count, Serum Biochemistry, Endocrine/Metabolic testing based on age/risk
- Fecal testing for parasites (quantitative test such as McMasters most useful)
- Following fecal testing, deworming with a weight appropriate product such as Ivermectin or Moxidectin
- Vaccines
    - Core – Rabies, Eastern Encephalitis, Western Encephalitis, Tetanus, West Nile Virus
    - Risk Based – Equine Influenza, Equine Herpes Virus, Strangles, Potomac Horse Fever
- Comprehensive oral examination and dental float as required
- Sheath cleaning and assessment for geldings
- Tick prevention

Additional deworming treatments may be recommended based on fecal test results

Autumn:

- Preventative care examination
- Wellness blood work if not done in spring or needed semi-annually (Complete Blood Cell count, Serum Biochemistry)
- Fecal testing for parasites (semi-annual testing is a best practice recommendation)
- Following fecal testing, deworming with a weight appropriate product such as Ivermectin or Moxidectin if needed
- Vaccines
    - Core – Rabies, Eastern Encephalitis, Western Encephalitis, Tetanus, West Nile Virus
    - Risk Based – Equine Influenza, Equine Herpes Virus, Strangles, Potomac Horse Fever
- Comprehensive oral examination and dental float if not performed in spring or needed semi-annually
- Sheath cleaning and assessment for geldings if not performed in spring or needed semi-annually.
- Tick prevention

Additional deworming treatments may be recommended based on fecal test results. Most horses should be treated with a product containing praziquantel following the a frost.

ALL WELLNESS PLANS SHOULD BE DEVELOPED IN CONJUNCTION WITH YOUR PRIMARY CARE VETERINARIAN