Equine Internal Parasites and How to Treat Them

There are several types of internal parasite that affect horses in the United Kingdom:

- Small redworms
- Large redworms
- Tapeworms
- Roundworms
- Pinworms
- Lungworms
- Liver fluke
- Bots (fly larvae)

This guide will provide information on each type of worm and bots including, what they are, how they can cause damage to the intestinal tract, how they are diagnosed and available treatment options.

We strongly advise that you talk to your vet, suitably qualified person (SQP)/registered animal medicines administrator (RAMA) to devise an individual de-worming programme for your horse based on regular faecal egg counts and saliva testing.

Small redworms: What are they and what do they do to your horse?

Small redworms, also known as cyathostomins, are the most common and most dangerous parasite for horses. They reproduce very quickly and have serious consequences for your horse's health.

How do small redworms cause damage?

Adult small redworms feed on intestinal tissue, with large numbers causing harm to the gut wall. In addition to several different types of colic, these parasites can cause lethargy, weight loss, diarrhoea and, in the most severe cases, death.

The term 'encysted' means hibernating when we talk about worms. Encysted small redworms are at the larval stage and will tunnel into the gut wall where they hibernate. They then lie dormant, usually over the autumn/winter period although some can remain there for months or years.

Whilst redworm are hibernating in the gut wall they do not cause a problem as such. However, when large numbers emerge in late winter or early spring they can damage the gut wall and cause colic, weight loss, diarrhoea or even death. Young horses less than six years old are most likely to be affected.

If a small redworm infestation is left untreated, in the long term it can cause severe damage to the intestinal wall. This reduces the horse's natural ability to absorb nutrients and may mean the horse struggles to put on or maintain weight. In the very

worst cases, a small redworm infestation can be fatal, with less than 50% of horses who experience damage to the wall of the large intestine surviving.

How are small redworms diagnosed and treated?

Clinical signs of small redworms are variable so they can be tricky to diagnose. A faecal egg count will show up an adult small redworm burden, but encysted small redworm won't show up as they do not lay eggs. Some horses can also appear healthy while carrying a significant burden of encysted small redworm.

A blood test for encysted redworm is now available, so speak to your vet to find out if this is suitable for your horse. A more proactive treatment approach is best for higher risk horses – your vet will be able to advise on the appropriate tactic for your particular horse.

Your vet, faecal egg count provider or another Suitably Qualified Person (SQP) – also known as a Registered Animal Medicines Advisor (RAMA) – will advise on the best de-wormer to treat encysted small redworm, which will usually be moxidectin. Do expect to be asked questions about your horse if it's anyone other than your vet prescribing the product, as the SQP/RAMA needs the information to be able to advise you properly.

The use of a de-wormer for adult redworm can cause any encysted redworm to emerge and trigger an acute response. If you suspect your horse has a redworm infestation, you need to be very careful when treating them. Make sure you consult your vet if you think your horse may be at increased risk of having encysted redworm or if it is showing any clinical signs. Your vet may recommend that your horse is given additional supportive medication to reduce any gut inflammation and aid recovery before a de-wormer is given.

It's important to note that your horse or pony must be more than 6 ½ months old to be treated with moxidectin. He or she also needs to be in good body condition. If you have any doubts or queries, please contact your vet or another SQP/RAMA.

Redworms (photo courtesy of Westgate Labs)

Small redworms can live on grazing and inside the horse for extended periods of time. Horses do not build up immunity to small redworm and it is becoming more resistant to de-wormers. Both these facts make it even more important to control the risk through an appropriate worming and pasture management programme.

Large redworms: What are they and what do they do to your horse?

Large redworms, also known as strongyles, are a lower threat as they have responded well to common worming treatments. The population and prevalence have decreased but they still pose serious health consequences.

How do large redworms cause damage?

Adult large redworms are found in the large intestine and produce eggs which are passed in the horse's droppings onto the pasture. The eggs are then eaten by horses whilst grazing. The larvae then hatch and burrow into the walls of the arteries that supply the horse's intestine. They damage the lining of the blood vessels and cause blockages which stop the blood supply to the intestine. Large redworm can also cause colic and the rupture of blood vessels. Severe damage from large redworm affects the horse's digestion, causing spasmodic colic. In the very worst cases, the horse may need to have the damaged section of intestine surgically removed.

How are large redworms diagnosed and treated?

Clinical signs of large redworms are colic, anaemia, weight loss, difficulty maintaining or putting on weight, and a dull or lethargic demeanour. Large redworms will be picked up on a faecal egg count and treatment in the form of an ivermectin, moxidectin, pyrantel or fenbendazole de-wormer can be prescribed if necessary.

Tapeworms: What are they and what do they do to your horse?

Horses of any age can suffer from tapeworm but the damage caused to the very young and the elderly makes them more vulnerable. Adult tapeworms live at the junction between the small and large intestine and release segments containing eggs into the droppings. These eggs are eaten by forage mites on the grazing land and are then picked up by the horse as they graze.

Tapeworm (photo courtesy of Westgate Labs)

The presence of tapeworms around this junction of the intestine can cause impaction colic as they block the passage of food. They also irritate the intestine which can lead to spasmodic colic. Adult tapeworms can cause ulcers in the intestinal wall and may even rupture the intestinal tract. Tapeworms in foals can prevent normal growth due to malnutrition.

How is tapeworm diagnosed and treated?

Clinical signs of tapeworm include weight loss, colitis, spasmodic colic and impaction colic. In the worst cases, tapeworms can be fatal. Tapeworm eggs are housed in segments so will not always be picked up on faecal egg counts.

The presence of tapeworm can be identified using a saliva test which measures the level of antibodies produced in response to tapeworm parasites. This can accurately detect the level of tapeworms in the horse's system and will indicate whether treatment is required.

Treatment will be advised by your vet or test provider but will often be with a de-wormer containing pyrantel or praziquantel.

Roundworms: What are they and what do they do to your horse?

Ascarids (white roundworms) commonly only affect young horses under four years old and are given the name 'large roundworms' because they can be up to 30cm in length. Due to their size, roundworms are likely to block the intestine of a small foal, causing impaction colic and rupturing of the intestine. This condition can be fatal and may require emergency surgery to give the foal any chance of survival.

Roundworms (photo courtesy of Westgate Labs)

How are roundworms diagnosed and treated?

Clinical signs of roundworms include coughing, nasal discharge, depression, a rough coat, impaction colic, weight loss or a struggle to maintain or put on weight. Faecal egg counts will pick up on roundworm infection in most cases, but as ascarids do spend some of their lifecycle in the lungs, their presence may not always be detected. Your vet or test provider can advise on what treatment is needed, which would likely be a de-wormer containing pyrantel or fenbendazole.

Pinworms: What are they and what do they do to your horse?

Pinworms (Oxyuris equi) can affect any age of horse and adult pinworms can reach up to 15cm in length. They are thin, white worms which mature to adulthood in the intestine of the horse. When an adult female lays her eggs, she does so by travelling to the horse's rectum and producing a pale yellow, sticky substance which she deposits around the outside of the horse's anus. This substance contains her eggs and can cause irritation. As the eggs are deposited externally, they may not be seen when a faecal egg count is performed. The adult female then often dies and is excreted within the faeces. Eggs can become infectious within three to five days and are spread as the horse itches their tail or as faeces is excreted.

How are pinworms diagnosed and treated?

Pinworm (photo courtesy of Westgate Labs)

The irritation caused by the female pinworm depositing her eggs outside the horse's anus can cause your horse to repeatedly itch their tail. One method of testing for pinworms includes using sticky tape to take a sample from around the horse's anus. This can be provided as part of a pinworm kit from your vet or test provider, along with instructions as to how to collect a usable sample.

Pinworms can be difficult to treat, and recommended drugs include ivermectin, moxidectin and fenbendazole, the latter usually being the most effective. Often, multiple treatments are required. It is also advisable to clean the horse's environment (e.g., disinfect stable) and any equipment (e.g., grooming kit) and poo pick thoroughly after treatment to minimise the risk of reinfection.

Lungworms: What are they and what do they do to your horse?

Lungworm larvae under microscope (photo courtesy of Westgate Labs)

Lungworms are another type of roundworm and are most commonly found in donkeys, however, can affect horses. The larvae develop in the horse or donkey's intestinal tract and then migrate to their lungs to mature into adults. Adult lungworms can be up to 8cm long. The presence of the adult worms in the lower respiratory tract (bronchi and bronchioles) can cause horses to cough and develop secondary conditions such as pneumonia.

How are lungworms diagnosed and treated?

As coughing can be indicative of a range of issues, it can be tricky to diagnose lungworms. Veterinary intervention to identify the presence of lungworm could include a bronchoscopy, where fluid from the lungs is collected and then examined for the presence of lungworm eggs. Alternatively, your test provider may offer sedimentation tests which work by separating the eggs from the horses or donkey's faeces. Moxidectin and ivermectin are the most commonly used drugs to treat lungworms, however, you are treating donkeys, please ensure the de-wormer you use is licenced for use in donkeys.

Liver Fluke: What are they and what do they do to your horse?

Liver fluke (photo courtesy of Westgate Labs)

Liver fluke are flat worms that affect the liver of horses and can cause a condition known as 'fascoliosis' if left untreated. Horses ingest liver fluke larvae in cysts known as metacercaria, once they have developed from eggs into their 2nd larval stage.

How is liver fluke diagnosed and treated?

Clinical signs of liver fluke include weight loss, jaundice (around whites of eyes) and anaemia. If a blood test is taken, then high liver enzyme activity may be recorded. Diagnosis may be achieved through the sedimentation method as described for lungworms or can be through blood tests known as ELISA which look for specific antibodies released in response to the liver fluke. There are currently no licenced drugs for treating liver fluke in horses, so your vet would prescribe an unlicenced to treat the infection.

Bots: what are they and what do they do to your horse?

Bots, also known as gasterophilus intestinalis, gasterophilus haemorrhoidalis or gasterophilus nasalis, are flies rather than worms and lay pale yellow eggs on the horse's legs, neck and shoulders, and around his muzzle. Within five days of being deposited, the eggs will hatch into larvae once stimulated by the horse licking or biting them. The larvae will either be ingested by the horse or will crawl to his or her mouth, where they will burrow into the gums and tongue. After around four weeks the larvae migrate from the mouth to the stomach, where they will attach themselves to the lining of the horse's stomach and intestinal tracts and dig in.

Bot fly larvae (photo courtesy of Westgate Labs)

The larvae will remain in the horse's digestive system for around eight to ten months, before passing in the manure. They will then pupate in the soil for three to five weeks before emerging as adults, ready to start a new cycle.

How are bots diagnosed and treated?

Preventative measures include use of fly spray and a fly sheet, as well as using a bot fly knife (a flat metal tool used painlessly as a scraper) to remove any eggs from the horse's skin. Make sure you don't touch your eyes whilst removing bot eggs and always wash your hands afterwards.

Signs of a bot fly infection include sensitivity of the mouth and dental issues, including problems chewing and loss of appetite. The horse may also develop sinus infections and discharge mucus from their nose. Bot fly infection can cause gastrointestinal issues including swelling, ulceration and discharge at the attachment site. If large numbers of larvae group in the horse's stomach they can cause physical blockages which can lead to impaction colic. The larvae also consume nutrients, making it harder for the horse to keep weight on and causing changes in their coat and body condition. Bot fly larvae can also burrow into the horse's skin and cause lesions or tears, in which infection can occur.

Your vet or SQP/RAMA will advise on treatment, probably ivermectin or moxidectin. The treatment should be given in winter after the first frost or in December, whichever is the earlier, to prevent the larvae starting to burrow in the mouth. Where possible, align treating bots with your treatment for encysted redworm to minimise de-wormer use.

Individual Treatment

It is vitally important that each horse is treated as an individual. This includes an individualised testing and treatment plan. Your SQP/RAMA can aid you with this, and CANTER can provide further resources and guidance on how and when to test your horse.

Reduction Testing

To further ensure that the treatment has been successful, you may wish to send another sample to your test provider 2 weeks after treatment. They will then be able to identify and residual worm eggs as a sign of resistance to treatment and use that information to further inform your individual treatment plan.

Key Points

- **Treat your horse as an individual.**
- **Test before you treat.**
- **Where possible, test again after treatment to see how effective the treatment was.**
- **Seek advice from your vet, SQP/RAMA or test provider if you are worried your horse may be displaying any of the clinical signs outlined above.**
- **Where possible, reduce overuse and unnecessary use of de-wormers. The drugs they contain are toxic to the wider environment and worms are showing increased resistance to them due to how they have been previously administered.**
- **Many veterinary practices and test providers now offer de-worming programmes incorporated into a health care plan to reduce costs.**
- **Where possible, treat horses off pasture to prevent de-worming drugs from entering the environment.**

More de-worming tips

If you sometimes struggle to administer a de-wormer orally, our advice page on providing De-wormers and oral medication can help.

For pasture management tips to reduce the incidence of worm eggs in the environment, you can access our Pasture management and Worms: How to control them in horses advice pages.

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Controlling ANTIparasitic resistance canter In Equines Responsibly