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 (Gasterophilus fly larvae)

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

We strongly advise that you talk to your vet or 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, saliva testing or blood 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. They are one of the most common causes of spasmodic colic, particularly in young horses.

When small redworms are at the larval stage, they tunnel into the gut wall where they ‘encyst’ (hibernate). They then lie dormant over the autumn/winter period (although some can remain there for months or years).

Whilst small redworms are hibernating in the gut wall they do not usually cause a problem (although the inflammation they cause in the gut wall can sometimes cause colic). However, when large numbers of larvae emerge from the gut wall in late winter or early spring, they can damage the intestines causing colic, weight loss, diarrhoea or even death. This condition is known as larval cyathostominosis. Young horses less than six years old are most likely to be affected.

If a small redworm infection is left untreated, in the long term it can cause severe damage to the intestinal wall. This reduces the horse’s ability to absorb nutrients and may mean the horse struggles to put on or maintain weight. In the very worst cases,
a small redworm infection can be fatal, with less than 50% of horses who experience substantial 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 substantial burden of encysted small redworm.

A blood test for encysted redworm is now available but its use is not recommended for all horses. Speak to your vet to find out whether testing or, alternatively, de-worming without testing is the most appropriate approach for your particular horse.

If your vet, or another Suitably Qualified Person (SQP) – also known as a Registered Animal Medicines Advisor (RAMA) – does recommend treating for encysted small redworm, they will advise on the best de-wormer to use. This 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, triggering an acute response. If you suspect your horse has a redworm infection, 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 they are showing any clinical signs. Your vet may recommend that your horse is given additional 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 at least 4 months old to be treated with moxidectin (or at least 6.5 months if treated with moxidectin + praziquantel). If you have any doubts or queries, please contact your vet or SQP/RAMA.

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 this worm is becoming more resistant to de-wormers. Both these facts make it even more important to reduce the risk through an appropriate de-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 less of a threat to horses than small redworms. This is because, over the years, they have responded well to common deworming treatments. As a result, the numbers of large redworms and the prevalence of infections have decreased. However, these worms may still have serious consequences for horses’ health.

**How do large redworms cause damage?**
Adult large redworms live in the large intestine of horses. They produce eggs which are passed in the horse’s droppings onto the pasture. The eggs are eaten by horses whilst grazing. The larvae then hatch and burrow into the walls of the arteries that supply the horse’s intestine, damaging the lining of the blood vessels and causing 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 redworms affects the horse’s digestion and has been linked to incidences of 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 redworm infections are colic, anaemia, weight loss, difficulty maintaining or putting on weight, and a dull or lethargic demeanour. The presence of adult large redworms will be detected on a faecal egg count and treatment (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 infection. However, very young and elderly animals are more vulnerable to the effects of this parasite. 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 horses as they graze.

**How do tapeworms cause damage?**
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 intestines. In foals, tapeworms 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, the effects of tapeworm infection 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 horse's tapeworm burden and will indicate whether treatment is required. If it is, your vet or test provider will advise regarding which de-wormer to use (pyrantel or praziquantel) and the dose.

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

Ascarids (white roundworms) commonly only affect 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 can 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.

**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 detect 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 whether treatment is needed and, if so, which de-wormer to use (probably pyrantel or fenbendazole) and the dose.

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

Pinworms (Oxyuris equi) can affect any age of horse. They are thin, white worms which mature to adulthood in the intestine of the horse, with adult worms reaching up to 15cm in length. 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 in faeces.
How are pinworms diagnosed and treated?
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 on how to collect a usable sample.

Pinworms can be difficult to treat. 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?
Lungworms are a type of roundworm that is most commonly found in donkeys. However, they can also affect horses. The larvae develop in the animal'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 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 horse’s or donkey’s faeces. Moxidectin and ivermectin are the most commonly used drugs to treat lungworms. However, if you are treating donkeys, please ensure that the de-wormer you use is licenced for use in this species.

Liver Fluke: What are they and what do they do to your horse?
Liver fluke are flat worms that affect the liver of horses and can cause a condition known as ‘fascioliasis’ if left untreated. Horses ingest liver fluke larvae in cysts known as metacercariae, 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 (which is visible in the whites of the 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 through ‘ELISA’ blood tests which test for antibodies that are 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 drug 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.

How do bots cause damage?
They lay pale yellow eggs on the horse’s legs, neck and shoulders, and around the muzzle. Licking or biting by the horse stimulates the eggs to hatch into larvae. The larvae are either ingested by the horse as it licks/chews, or they crawl to the mouth. They then burrow into the gums and tongue. After around four weeks, the larvae migrate from the mouth to the stomach, where they attach themselves to the lining of the horse’s stomach and intestinal tract.

The larvae remain in the horse’s digestive system for around eight to ten months before passing in the manure. They 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?
Signs of a bot fly infection include sensitivity of the mouth and dental issues, 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 maintain weight 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. Where possible, align treating bots with your treatment for encysted redworm to minimise de-wormer use.
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.

**Individual Treatment**

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

**Faecal Egg Count Reduction Testing**

To ensure that any treatment administered has been successful, you may wish to send a second faecal sample to your test provider 2 weeks after de-worming treatment. If any worm eggs are present in this second sample, this indicates that the worms in your horse are resistant to the de-wormer used. Your vet or SQP/RAMA will 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 and whether you have a problem with resistance.
- 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 because they are being over-used.
- 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.