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Chapter 12. Quarantine of new arrivals for parasite management

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Overview

Effective quarantine for new horse arrivals is of major preventive health care importance. The integration of new horses into a herd or onto a premises poses significant risks of the introduction of infectious agents. Consideration of the risks of introducing parasites, including anthelmintic resistant populations of parasites (Nielsen *et al*, 2020), must be undertaken in conjunction with evaluation of the risk of introducing other contagious organisms, especially viral infections (such as equine influenza and equine herpes virus) and bacterial infections (such as strangles). Guidelines on the quarantine and management of new horses in relation to preventing the introduction of viral and bacterial agents are published by several organisation including the Horse Race Betting Levy Board (2025) and the British Horse Society (2025), and these should be integrated with procedures aimed at minimising the risks of unknowingly introducing parasites that pose risk of disease in the individual horse as well as risking contamination of paddocks.

As a general rule, quarantine should last a minimum of 21 days. To protect other horses on the yard, new arrivals should be isolated and have no direct or indirect contact with the resident horses. Ideally, new horses should be stabled on a separate area of the yard, or else kept in an end stable with an empty stable between them and their neighbour. No other horses should be able to walk past them. If possible, separate staff should care for the new horses and should follow appropriate hygiene and biosecurity protocols. New arrivals should not be given access to pasture during the quarantine period until the risk of pasture contamination with parasites has been minimised.

Although the approach to managing new arrivals on a premises should be based on risk assessments and appropriate testing, it should be recognised that **the risks associated with the introduction of parasites, and parasites that have anthelmintic resistance, vary for the different parasite species and for horses of different ages**. The limitations of the different tests for parasites must also be taken into consideration. In addition, it should be recognised that there is no fool-proof system that completely eliminates the risk of introducing parasites and anthelmintic resistant parasites.

Records of previous anthelmintic treatments and parasite control measures (see Chapter 3. Recording Treatment Decisions) are valuable sources of information that should be carefully considered where available. Premises, groups of animals, or individual animals with poor records of previous prescriptions of anthelmintic products should be considered higher risk.

Quarantine guidelines specific to donkeys/hybrids can be found in Chapter 10.7 - Quarantine for Donkeys and hybrids.

Chapter 12.1 Foals, weanlings and yearlings (<18 months)

A comprehensive approach to assessing and managing parasite infections in foals, weanlings and yearlings is summarised in Figure 1.

- Animals less than 18 months of age are highly susceptible to accumulating heavy burdens of nematodes (ascarids and cyathostomins), and in addition, all horses older than 6 months are susceptible to tapeworm infections.
- Ascarids are most commonly encountered in the **first 6 - 7 months of life**, after which, in most horses, they are naturally eliminated. It can be assumed that all foals up to 6-7 months old will be infected with ascarids regardless of the results of faecal analysis. After the first 6-7 months of age, cyathostomin and tapeworm infections start to increase, although some individuals may be affected with ascarids as older foals or weanlings, or even mature horses.

For foals of 2 - 4 months, a routine dose of an effective anthelmintic (e.g. fenbendazole or a pyrantel salt) to treat pre-patent ascarid infections should be administered without the need to perform any FEC (see Chapter 11. Foals, Weanlings, Yearlings and Youngstock).

- Care must be taken in foals that have high ascarid burdens if a pyrantel salt is given, since this acts by paralysing the nematodes that might then predispose to intestinal impaction.

For foals of 4 – 6 months, an initial faecal egg count (FEC) should be performed on arrival (day 0) at the premises and a routine dose of an effective anthelmintic (e.g. a benzimidazole such as fenbendazole or a pyrantel salt) should be administered to target ascarids (regardless of the results of the initial FEC); a follow-up FEC should be performed 14 days later (i.e. a faecal egg count reduction test [FECRT]) to assess the effectiveness of the administered anthelmintic in reducing ascarid egg shedding. If fenbendazole was administered and resistance is identified, a standard dose of a pyrantel salt should be administered, followed by a post-dosing FEC (14 days later) to assess efficacy. If resistance in ascarids to both fenbendazole and pyrantel is

identified, specialist parasitology advice should be sought (see Chapter 11. Foals, weanlings, yearlings and youngstock).

For weanlings (>6 months) and yearlings (<18 months), the predominant nematode infections are likely to be cyathostomins, although ascarids may also be present. To identify the nematodes present, a FEC should be performed on arrival at the premises.

- If strongyle eggs predominate, anthelmintic treatment with a pyrantel salt or a macrocyclic lactone (ivermectin or moxidectin) is indicated, followed by a FEC 14 days later (FECRT) to assess anthelmintic efficacy. If resistance to one of these drugs is identified, further treatment with the other anthelmintic class followed by a further FEC (14 days later) should be performed. If resistance in strongyles to both anthelmintic classes is identified, specialist parasitology advice should be sought.
- If any ascarid eggs are identified, treatment with a benzimidazole or pyrantel salt should be undertaken, coupled with a FECRT.
- If both ascarids eggs and a high cyathostomin egg count (e.g. >200 EPG [eggs per gram]) are identified in the initial FEC in weanlings older than 6 months or yearlings, treatment with a pyrantel salt or fenbendazole should be undertaken, coupled with a FECRT. If ascarid eggs are still present at the 14 days post-treatment FEC, then a further treatment with a pyrantel salt or fenbendazole (whichever was not administered previously) is indicated, coupled with a FECRT. If the initial FECRT indicates anthelmintic resistance of cyathostomins, then treatment with a macrocyclic lactone (ivermectin or moxidectin), coupled with a FECRT, should be performed.
- In the autumn/winter, if the animal has been grazing over one or two previous grazing seasons, it will be at risk of having accumulated a significant cyathostomin larval burden (especially if the previous parasite control programme has been inadequate or is unknown), in which case a larvicidal treatment (e.g. moxidectin or five day course of fenbendazole) should be prescribed in conjunction with a FECRT to assess efficacy.

- **A tapeworm ELISA test should be performed in weanlings and yearlings (up to 18 months of age)**. A FEC using a modified egg counting technique for tapeworm eggs, such as the "Proudman method" (Proudman and Edwards, 1992) can also be performed (see Chapter 11. Foals, Weanlings, Yearlings and Youngstock), but this test has low sensitivity for animals with low tapeworm burdens (<20 tapeworms) and will also not identify pre-patent infections where eggs are not being produced. Immature tapeworms can establish by 5-6 months of age. In the event of a high tapeworm FEC result, a FECRT should be performed to assess the efficacy of the anthelmintic being used (bearing in mind the low sensitivity of the test in horses with immature or low tapeworm burdens).
- Animals demonstrating high tapeworm antibody levels or positive tapeworm FECs should be treated with an appropriate licensed product (e.g. double-dose of a pyrantel salt). Where concurrent treatment of cyathostomins is also required, a combined product such as moxidectin-praziquantel or ivermectin-praziquantel can be used. However, veterinary surgeons may prescribe an extemporaneous product (i.e. praziquantel alone) following the cascade if there is appropriate clinical justification, informed client consent, and where relevant, compliance with food-producing animal requirements (including specifying a withdrawal period).

As discussed previously, care must be taken in foals that have concurrent high ascarid burdens if a pyrantel salt is given, since this acts by paralysing the nematodes that might then predispose to intestinal impaction. Additionally, pyrantel salts are likely to act against cyathostomins and therefore apply selection pressure for development of anthelmintic resistance, so should be avoided if concurrent treatment of adult cyathostomins is not required. If a positive tapeworm FEC is recorded on arrival, a second tapeworm FEC should be performed at 14 days post-tapeworm treatment (i.e. FECRT) to assess the efficacy of the treatment (recognising the limitations of FECs to identify tapeworm eggs and the risk of false negative results).

Although the ELISA tests can identify animals with tapeworm infections with a sensitivity of 85% (serum) and 83% (saliva), with no misclassification of horses carrying potentially pathogenic burdens of >20 worms (Lightbody et al., 2016), it should be recognised that early patent tapeworm infections may not have yet induced specific antibody, resulting in false negative results. Furthermore, antibody levels take several weeks to fall after successful treatment, resulting in false positive results. Therefore, the date of the last anthelmintic treatment (if known) should also be taken into account when assessing the ELISA result - consultation with a parasitologist should be undertaken if there is doubt about how to interpret the results.

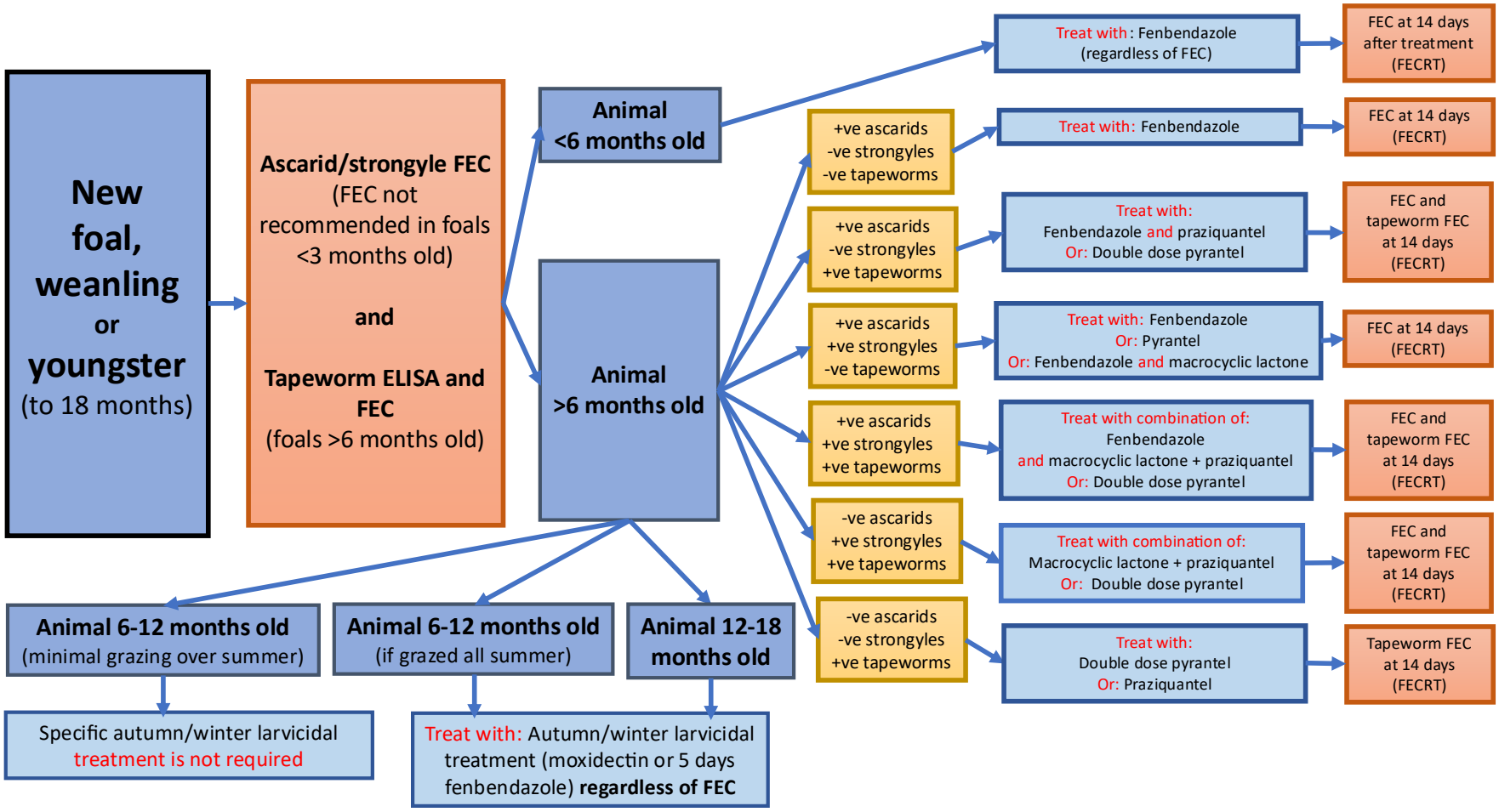

Figure 1: Parasite management for a new foal, weanling or youngster (up to 18 months of age)

Chapter 12.2 Young horses (18 months to 5 years)

A general approach to managing new arrivals in this age group with respect to their parasite status is shown in Figure 2. Horses between 18 months and 5 years of age are highly susceptible to accumulating heavy burdens of cyathostomins. They are also at risk of developing tapeworm infections. **All horses in this age group should be considered at high risk** for cyathostomin infection (see Chapter 1. Assessing the need for anthelmintic use).

Faecal analysis should be undertaken on arrival to establish the strongyle FEC, recognising that the FEC result gives no estimation of the number of larvae present (including early third stage larvae, late third stage larvae and developing fourth stage larvae).

An antibody test (ELISA) performed on saliva or serum should also be performed to estimate the tapeworm burden. Additionally, a faecal examination using a modified analysis technique such as the "Proudman method" (Proudman and Edwards, 1992) can be used to identify and quantify tapeworm eggs in the faeces in animals with patent infections (Hoglund *et al.,* 1998). However, as described above, this test has low sensitivity for animals with low tapeworm burdens (<20 tapeworms) and will also not identify pre-patent infections where eggs are not being produced.

- In view of the risk of larval cyathostominosis in this age group, a larvicidal treatment (moxidectin or five-day course of fenbendazole) should be administered regardless of the results of the FEC (unless there is an accurate history of recent administration of larvicidal anthelmintic). It should be recognised that the UK has widespread resistance in cyathostomins to the benzimidazole class of anthelmintics (including fenbendazole), so this will influence the choice of which larvicidal drug to use. A second FEC should be performed 14 days after treatment (i.e. FECRT) to identify any resistance to the administered anthelmintic. If anthelmintic resistance is identified, repeated larvicidal treatment using the other anthelmintic agent and a second FECRT

should be undertaken. If resistance in strongyles to both anthelmintic drugs is identified, specialist parasitology advice should be sought.

- Likewise, in view of the risk of tapeworm infection in this age group, and the inability of diagnostic tests (tapeworm ELISA or Proudman technique) to identify very recent/early tapeworm infections, some known high-risk horses (e.g. originating from premises with known tapeworm problems) may require anti-cestode treatment (pyrantel salt at double the standard strongyle dose or praziquantel) regardless of negative results of the diagnostic tests. However, for lower-risk horses with negative results, no tapeworm treatment should be necessary. If anti-tapeworm treatment is required, a faecal analysis (e.g. using the Proudman method) should be performed 14 days later to attempt to establish evidence of anthelmintic resistance (recognising that this test has low sensitivity if immature or non-gravid tapeworms predominate, and has not been validated for detecting reduced efficacy, with the possibility of false negative results). If anthelmintic resistance in tapeworms is suspected, repeated treatment using a different appropriate anthelmintic class and a second FECRT should be undertaken. If resistance/loss of efficacy in tapeworms to both anthelmintic classes is identified, specialist parasitology advice should be sought.

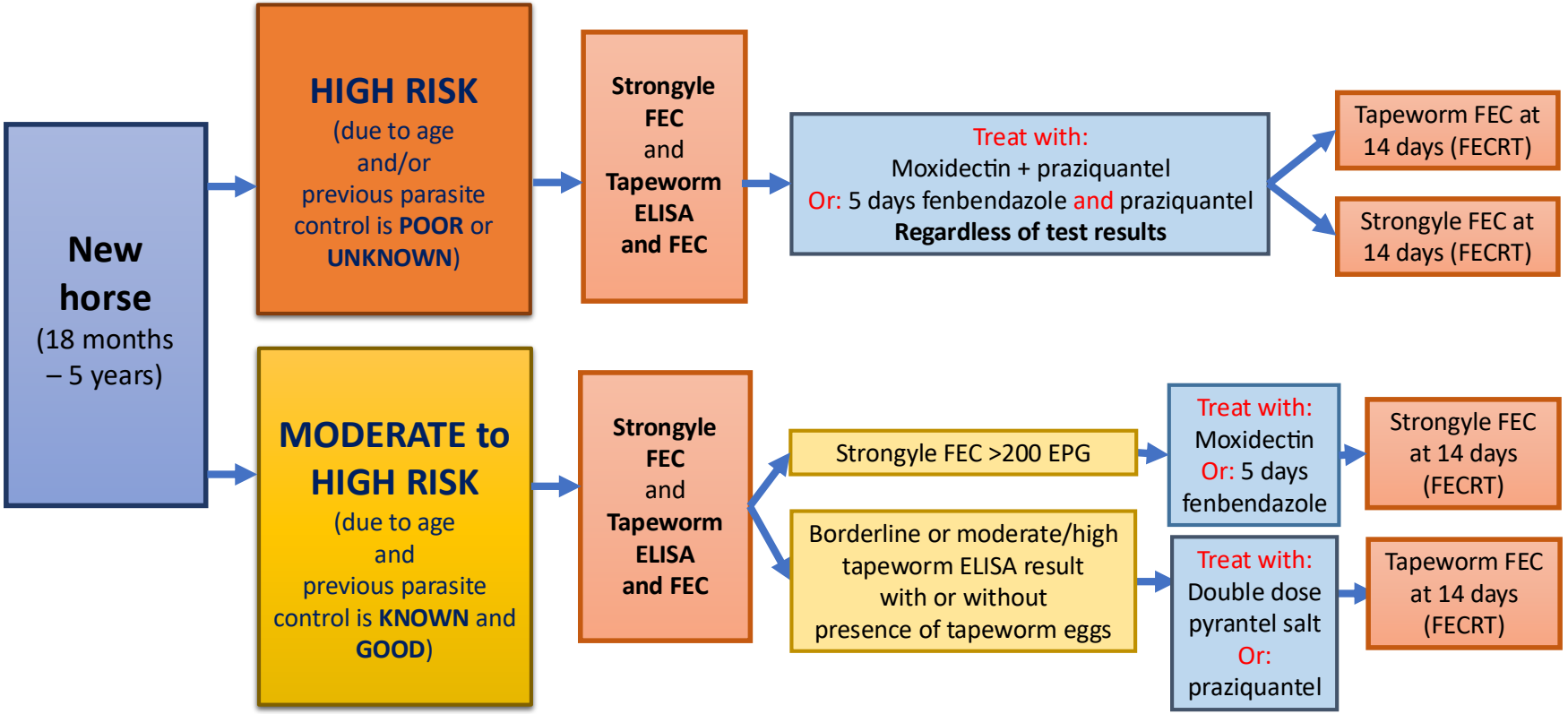

Figure 2: Parasite management for a new horse (18 months to 5 years old)

Chapter 12.3 Mature horses (5 years old or older)

If an accurate history of parasite control and previous risk assessments have been undertaken, a new risk assessment should be undertaken on arrival (see Chapter 1. Assessing the need for anthelmintic use). However, in many cases, an accurate history of test results, previous prescriptions, pasture management, etc. will be unknown, in which case horses should undergo testing and/or be considered as moderate or high risk.

A general approach to managing new arrivals in this age group with respect to their parasite status is shown in Figure 3. It should be recognised that adoption of such procedures will not completely eliminate the risk of introducing parasites that are resistant to all anthelmintic classes, so on-going testing of horses on the premises using FECRTs and ideally recording egg reappearance times is essential to detect maturing infections and/or early indications of reduced anthelmintic efficacy.

All new arrivals, regardless of whether they are deemed high or low risk, should be tested for nematodes and tapeworms, including:

- FEC for strongyles
- Small redworm blood test
- Tapeworm ELISA (saliva or serum)
- FEC for tapeworms (e.g. “Proudman method”)

Treatment decisions for low-risk horses should be based on the results of these tests, as shown in Figure 3. If treatment for strongyles is considered unnecessary as a result of the risk assessment and testing, consideration should still be given to the risk of *Strongylus vulgaris*, further details below.

If the results of testing for a low-risk horse (i.e. there is a known previous history of excellent parasite control and testing) is negative for both strongyles and tapeworms, then no treatment for cyathostomins or tapeworms will be required.

If anthelmintic treatment is indicated for any low-risk horse, a repeat faecal analysis should be performed 14 days after treatment (FECRT) to assess anthelmintic efficacy. This should include checking for the presence of tapeworm eggs, ideally using a technique such as the “Proudman method” (Proudman & Edwards, 1992).

All high-risk horses should receive anthelmintic treatment. The choice of which anthelmintic to use will be dependent on the results of testing, as shown in Figure 3. As with low-risk horses, a repeat faecal analysis should be undertaken 14 days after treatment to assess anthelmintic efficacy.

If resistance to the anthelmintic product that has been administered to a new arrival is detected at the 14-day post-treatment faecal analysis, treatment with another appropriate class of anthelmintic, and a further FECRT is indicated. Multi-drug class resistance is possible and, if present, must be identified prior to the horse grazing pastures on the premises. For cyathostomins, benzimidazole resistance is considered to be widespread in the UK. Resistance to the pyrantel salts and macrocyclic lactones is less common, and in most situations, testing for efficacy of these anthelmintics should be prioritised. For tapeworms, the extent of resistance to the pyrantel salts and praziquantel is unknown, hence the recommendation to perform FECRTs following treatment of horses diagnosed with tapeworm burdens.

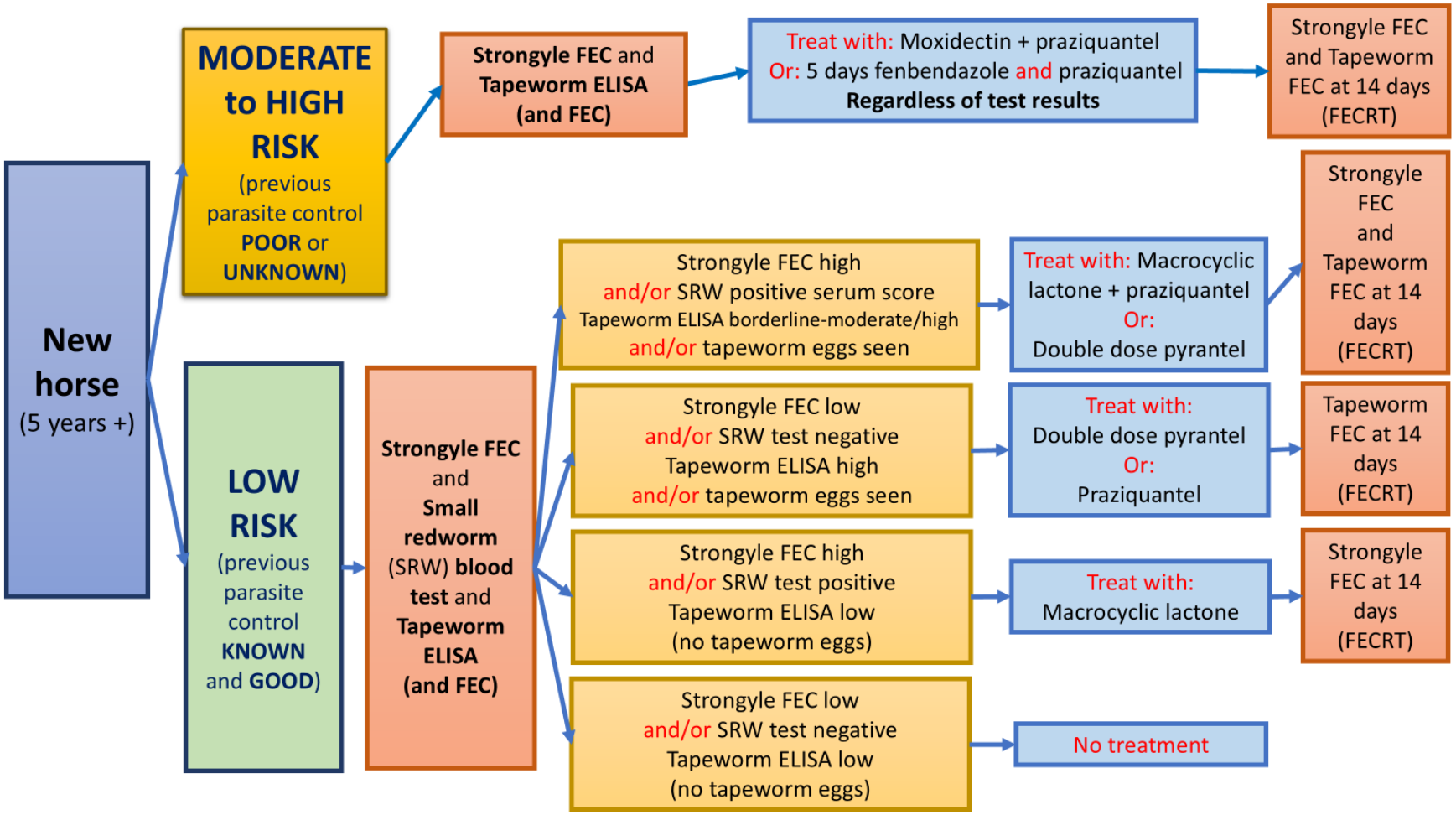

Figure 3: Parasite management for a new horse (5 years or older)

Chapter 12.4 *Strongylus vulgaris* (large strongyle)

The large redworm, *Strongylus vulgaris* is currently considered to be rare in the UK but cannot be detected by routine faecal analysis since its eggs are indistinguishable from those of the cyathostomins. Any new arrival that has a low/negative strongyle FEC could potentially still be infected with this parasite. Patent *S.vulgaris* infections can be tested for by faecal larval culture or PCR (polymerase chain reaction), however these tests will not identify pre-patent *S.vulgaris* infections. If there is any reason to suspect that the horse may be infected with this parasite (e.g. a history of peritonitis or known/suspected cases of *S. vulgaris* infection in this or other horses on the originating premises), then anthelmintic treatment with an active known to kill migrating large strongyle larvae should be given (this may be the same treatment needed to treat horses with confirmed or suspected cyathostomin infections, or if no other strongyle treatment is needed, then a dose of ivermectin should be considered).