



Equine Asthma

'Equine Asthma' is the new name to cover the disorders previously known as Recurrent Airway Obstruction (RAO), Chronic Obstructive Pulmonary Disorder (COPD) and Inflammatory Airway Disease (IAD). It can vary in severity from a very mild respiratory problem that may only be apparent at exercise, to a much more severe issue that affects the horse even at rest.

Equine Asthma is due to an intolerance/allergy to inhaled allergens, such as mould spores, dust, ammonia and pollens. Therefore signs may be seasonal (e.g. over winter with a pony with a dust allergy due to increased stabling, or just in the summertime for one with a pollen allergy) or all year round.

The signs of Equine Asthma are:

- Increased respiratory (breathing) rate at rest – this should be around 8-12 breaths per minute in a relaxed horse
- Increased respiratory effort – harder breathing
- Tiring quicker when working
- A cough – this may occur spontaneously at rest in more severe cases, or just when exercised in milder cases
- Excess mucous production
- Nasal discharge
- A 'heave line'



On listening to the lungs your vet may hear wheezes when the horse breathes out – this is due to the constriction/collapse of the small airways within the lung due to inflammation. If

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other sounds such as crackles or rubbing noises are heard these may have other potential causes.

Often a presumptive diagnosis can be made on clinical signs and history, but in more complex cases a definitive diagnosis can be made via *bronchoalveolar lavage* or *tracheal wash* (via scope) to check which cells are living in the airways. Things like blood samples or scoping of the upper airways can also be used to rule in/out other potential causes of breathing problems.

Management of Equine Asthma

Appropriate management of horses with Equine Asthma is the main consideration, as without appropriate management they will continue to have flare ups of the condition and require further medical treatment, which over a long time may prove more costly than making changes to the horse's environment. With many milder cases changing the horse's care may be enough to prevent further issues.

- **Turnout** – in those with dust or ammonia sensitivities, the best place for the horse is in the field, preferably for 24 hours a day. This reduces their exposure to dust and ammonia, and also grazing with their head down allows mucous drainage.
- **Forage** – dry hay contains lots of mould spores, dust and bacteria. Haylage is the best option for horses with sensitivities to these, but is not always appropriate for some horses (although low calorie haylage is available for laminitics etc.). Steaming hay shows a good reduction in dust spores if done correctly, such as with a Haygain steamer. If this is impossible soaking the hay for 30 minutes to 1 hour will reduce some allergen levels – but soaking for longer than this may actually encourage bacterial growth. Soaking should be performed immediately prior to feeding (i.e. not in batches).
- Feed all forage loose on the floor, rather than haynets, as this reduces the amount of dust spread in the air, and enables mucous drainage.
- **Bedding** – straw is not a suitable bedding material for horses with Equine Asthma, as it contains lots of dust and spores. Shredded paper and cardboard are the most suitable bedding materials as they are very low in dust, and dust-extracted wood shavings are also suitable. Using rubber matting will decrease the amount of bedding required. Deep littering systems are not suitable due to the high ammonia levels.
- Avoid mucking out when the horse is in the stable, as allergens such as dust and ammonia will become airborne whilst doing this. Try to leave a period of time following mucking out before putting your horse back in the stable to allow the dust to settle.

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- **Stables** – if possible horses with Equine Asthma should be in an outside stable where they are not sharing a single airspace with other horses which are on straw beds etc. (e.g. in an American barn type stable). If this is not possible try to ensure your horse is in a stable closest to the ventilation inlet (where the wind blows in) rather than the outlet.
- **Ventilation** – try to improve ventilation in your stable through keeping windows open for as long as possible, or adding ventilation slats etc.
- Dusting stables down and removing cobwebs prior to stabling for the winter can be useful.
- **Exercise** is to be encouraged if the horse is able to, as this improves circulation to the lungs and encourages movement of mucous in the airways.



Medical Management

Treatment of Equine Asthma can be broken up in to six parts – emergency therapy, anti-inflammatories, broncho-dilators, mucolytics, antibiotics (if required) and inhalers.

- **Emergency therapy** – for horses who are really struggling in an acute flare up, intravenous injections of a bronchodilator and steroids are usually given. The horse should be monitored closely for any deterioration.
- **Anti-inflammatories** – reducing the inflammation within the lower airways will treat the cause of Equine Asthma. However, non-steroidal anti-inflammatories such as Bute or Danilon are not effective for this condition, and instead steroids, such as Prednisolone, are essential for reducing this inflammation. Steroids are not recommended for mares in foal, due to abortion risk, so if your mare may be in foal please make the vet aware of this. Similarly, there have been links between steroids and laminitis (particularly those with current, active laminitis) and so we must be careful when using them in these horses. However, at a safe dose we very rarely see any side effects if used with care.
- **Bronchodilators** – e.g. Dilaterol, Ventipulmin (clenbuterol). These act on the smooth muscle within the airways to reduce constriction, therefore improving the flow of air

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throughout the lungs. However, whilst these improve the signs of Equine Asthma they do not help improve the underlying inflammation, and so shouldn't be used alone without anti-inflammatories and/or excellent management to reduce the number of allergens in the air.

- **Mucolytics** – e.g. Sputolysin. This reduces mucous production and thickness in horses, so will aid clearance of mucous and reduce coughing.
- **Antimicrobials** – secondary infection with Equine Asthma is uncommon, but should be considered where cases are not improving, or following sampling of the airways if bacteria is found. By sampling the bacteria within the airways the most appropriate antibiotic can also be selected, through culturing the bacteria and performing antibiotic sensitivity testing.
- **Inhaler therapy** – in addition to the oral treatments described above, bronchodilators and anti-inflammatories/steroids may also be administered to the horse via inhalers. This is useful in combination with oral treatment as an initial treatment for flare ups, and as a continuation therapy as part of the horse's ongoing management.

By using inhaled therapy we are mainly targeting the areas needing treatment – drugs are delivered to the airways themselves and less is absorbed into the bloodstream. Therefore, we see fewer side effects with this method of treatment, making it particularly useful for the management of asthma in laminitics, for example.

Special horse nebulisers can be purchased, for example the Flexineb inhaler, which the horse wears like a muzzle, or space-chamber inhalers can be used, such as the Equihaler (specifically designed for horses) or a paediatric space-chamber (designed for babies). For these, the inhalers are puffed into the chambers and the rubber 'mask' of the chamber is held covering one of the horse's nostrils, so the horse inhales the drugs via the mask. Most horses, once used to this, tolerate it very well, even nervous ones.



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