



Equine asthma often has its origins in environmental factors, particularly for horses stabled inside

Breathe Easier

UP TO 80% OF THOROUGHBREDS HAVE **ASTHMA**

By **AMANDA DUCKWORTH**

GIVEN THAT THOROUGHBREDS are born to run, it should come as no surprise that their respiratory health is a high priority throughout their careers. Trying to run at full speed while struggling to breathe is not a scenario anyone wants.

When it comes to respiratory health, equine asthma is a widely studied area. Now known as MEA, mild to moderate equine asthma was previously known as inflammatory airway disease (IAD). It is a chronic respiratory condition that typically presents with coughing, poor performance, and increased mucus,

but importantly, it does not present with labored breathing while at rest. Studies have found that up to 80% of Thoroughbreds have MEA.

Meanwhile, severe equine asthma (SEA) was previously referred to as multiple things as well, including heaves, recurrent airway obstruction, and chronic obstructive pulmonary disease. It is believed to affect about 15% of horses in the Northern Hemisphere, and it is the most common chronic respiratory disease in adult and senior horses.

With changing terminology, there is a learning curve for all involved. In

August 2022, the Veterinary Journal published “Mild-moderate equine asthma: A scoping review of evidence supporting the consensus definition.”

“The current American College of Veterinary Internal Medicine (ACVIM) expert consensus regards equine asthma as a spectrum, but not a continuum, of disease, ranging from a mild-moderate form previously known as inflammatory airway disease (IAD) to a severe form, previously known as ‘heaves’ or recurrent airway obstruction (RAO) including summer pasture-associated recurrent airway obstruction,” explained researchers. “Mild-moderate equine asthma (MEA) is distinguished from severe equine asthma (SEA) by a lack of increased respiratory effort at rest, milder airway inflammation, and milder airflow limitations.”

In all, 45 articles from 44 studies involving 6,092 horses were included that examined associations between indicators of mild-moderate equine asthma. These studies had been conducted in several locations, including in clinics or hospitals, at yards or racetracks, or with research herds. The breed was reported in 30 of the articles, and the number of horses for which breed was reported was 4,699, with 2,730 (58.2%) being Thoroughbreds. Use was reported for 5,439 horses, with 3,960 (72.8%) being racehorses.

“Evidence was more consistent for certain pairwise relationships (e.g., between cough and tracheobronchial mucus) than others (e.g., BAL cytology and lung function),” researchers found. “Findings highlight the need for increased standardization of diagnostic methods and reporting to facilitate future systematic review and meta-analysis.”

In August 2024, Veterinary Clinics of North America: Equine Practice published the review “Chronic Cough and Hyperpnea: Clinical Approach to Equine Asthma.”

“Exercise intolerance, chronic cough, and hyperpnea are the clinical

Heaves - Hives - Allergies

HUNDREDS OF FIVE STAR REVIEWS



Many horses suffer from seasonal allergies.

The good news is that there are ways that you can support your allergy prone horse through targeted supplementation.

There is evidence that omega-3 fatty acids help. Researchers have found benefits for omega-3 fatty acids on managing airway inflammation and other allergic responses, both respiratory and skin conditions.

1 gram of DHA and 1.5 grams EPA per 4 oz serving.

1,297 IU of natural vitamin E in a 4 oz serving which has also been shown to have significant health benefits in horses with allergies.



Patented Formulas

Complete Essential Fatty Acid (Omega) Supplements
USDA Certified Organic, Non-GMO, Cold Pressed
Human Grade, All Natural Vitamin E
No Sugar, No Starch



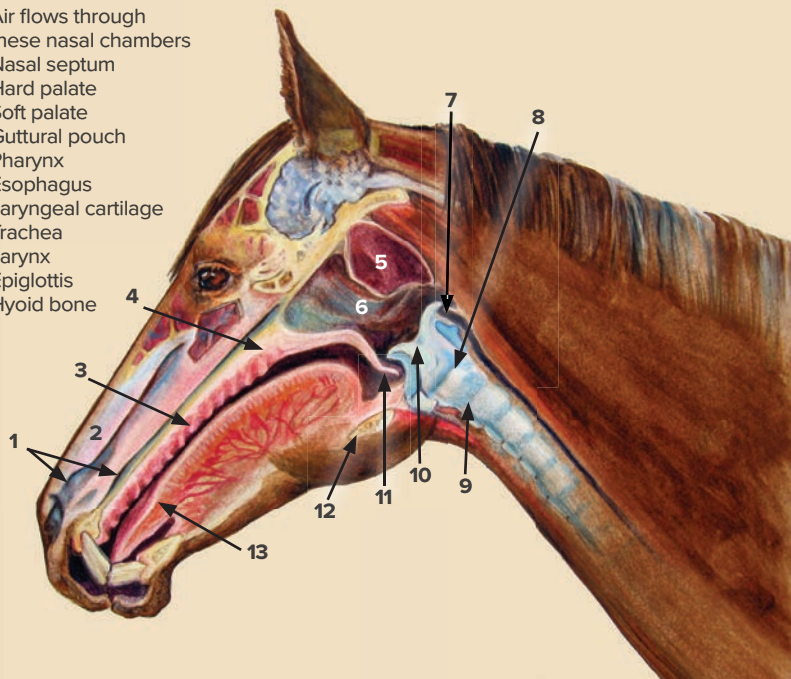
<https://o3animalhealth.com>

Also at KBC Horse Supplies & FarmVet
855-366-8822 | kathleen@o3animalhealth.com

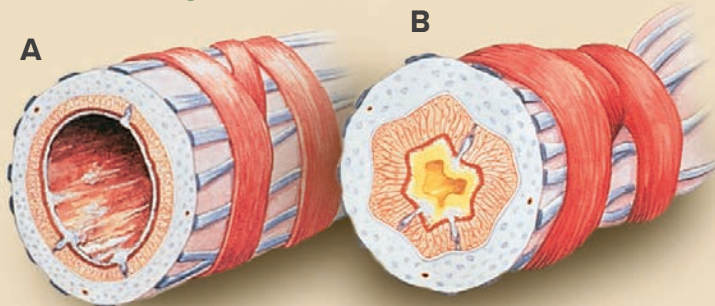


THE UPPER RESPIRATORY SYSTEM

- 1 Air flows through these nasal chambers
- 2 Nasal septum
- 3 Hard palate
- 4 Soft palate
- 5 Guttural pouch
- 6 Pharynx
- 7 Esophagus
- 8 Laryngeal cartilage
- 9 Trachea
- 10 Larynx
- 11 Epiglottis
- 12 Hyoid bone
- 13



THE AIRWAYS



Layers of muscle surround the horse's airways and control their diameter (A). Inflammation, such as that resulting from irritation or infection, can lead to a constriction of airflow through the lung (B). The inflammation also can result in thickening of the airway walls and an increase in mucus production.

hallmarks of equine asthma,” explained researchers. “Diagnosis of severe equine asthma in horses is multistep; determination of the phenotype will help guide future recommendations. Management of equine asthma is largely reduction/elimination of triggering agents/conditions. Immunosuppressive therapies and bronchodilators are the mainstay of treatment of equine asthma.

“Rescue therapy with short-acting bronchodilators is the first goal when

managing a horse with hyperpnea. The second goal is to control/reduce inflammation and airway remodeling. Immunosuppressive therapies alone will not be effective. Environmental and management changes must be established to minimize or eliminate exposure to triggering agents/factors.”

Examining various causes of equine asthma is a common focus. In January 2025, the Equine Veterinary Journal published “Association between fungal detec-

tion, airways inflammation and diagnosis of moderate to severe asthma in horses.”

“Fungi are ubiquitous in horses’ environment,” explained researchers. “Their contribution to the pathophysiology of severe asthma (SA) is acknowledged, while controversies remain for mild-moderate asthma (MA). We hypothesized that fungi are a risk factor for asthma. Our objective was to compare different combinations of analytical methods (cytology, culture) and sampling sites (tracheal wash, TW), bronchoalveolar lavage fluid (BALF) in relation to clinical status (control, MA, SA).”

For the prospective cross-sectional study, researchers noted that their equine population included asymptomatic racing horses in the field and horses referred to the hospital for respiratory investigations. Fungi were detected by cytology and identified by mycology on TW and pooled BALF. In all, 155 horses were included. Of those, 85 were MA, 35 were SA, and 35 were used as controls.

“The overall proportions of fungal detection in TW ranged from 45.7% to 89.4% among groups,” researchers concluded. “The prevalence of fungal detection in BALF was significantly lower by cytology for SA (5.7%) than MA horses (23.6%) and significantly higher by culture for MA horses (31.8%) than controls (8.6%). Fungal detection by culture in BALF was significantly associated with high tracheal mucus score, high neutrophil proportions in BALF and diagnosis of MA.

“Fungi were significantly more prevalent in the airways of MA horses than SA and/or controls. Fungal detection on TW, either by cytology or culture, was uninformative in a clinical context. Fungal detection by culture, but not cytology in BALF was associated with MA.”

Finding the best practical ways to diagnose asthma is also routinely studied. In March 2024, Animals (Basel) published “Equine Asthma Does Not Affect Circulating Myostatin Concentrations in Horses.”

ILLUSTRATIONS BY DR. ROBIN PETERSON

“The increase in the number of horses suffering from chronic respiratory diseases prompted us to undertake research on markers useful in the quick and accurate diagnosis of asthma in horses,” explained researchers. “Recent studies provide evidence for the usefulness of one myokine in the diagnosis of human asthma, namely, myostatin. Myostatin (MSTN) is an extracellular cytokine mostly expressed in skeletal muscles and known to play a crucial role in the negative regulation of muscle mass and function. Therefore, our aim was to compare the concentration of myostatin in the blood plasma of completely healthy and asthmatic horses.”

The study was carried out in two stages. For the first stage, horses with severe asthma were selected, and in the second stage, the myostatin level was determined in horses classified as asthmatic or healthy. The healthy horses served as controls. In all 61 horses were used in the study, including 12 Thoroughbreds trained for racing.

During the study, researchers found that the mean circulatory MSTN concentration determined using the ELISA method in asthmatic horses was significantly higher than that in clinically healthy young Thoroughbred racehorses, but it did not differ as compared to the group of healthy, adult leisure horses.

“The obtained results did not unambiguously support our original hypothesis that MSTN may be a reliable marker for the early diagnosis of equine asthma,” researchers concluded. “Based on the presented preliminary study, it is not possible to conclusively state whether MSTN may be a reliable marker for the diagnosis of asthma in horses. Probably, a different breed, age, and type of physical activity are factors that affect plasma myostatin levels to a great extent than the presence of asthma in horses. Nevertheless, more detailed research is needed to confirm these findings in a larger population of horses.”

In August 2024, the Equine Veterinary Journal published “Differences in pulmonary function measured by oscillometry between horses with mild-moderate equine asthma and healthy controls.” Oscillometry is a non-invasive lung function test that measures how well air moves through the lungs.

“The diagnosis of mild-moderate equine asthma (MEA) can be confirmed by airway endoscopy, bronchoalveolar lavage fluid (BALF) cytology, and lung function evaluation by indirect pleural pressure measurement,” explained researchers. “Oscillometry is a promising pulmonary function test method, but its ability to detect subclinical airway obstruction has been questioned.”

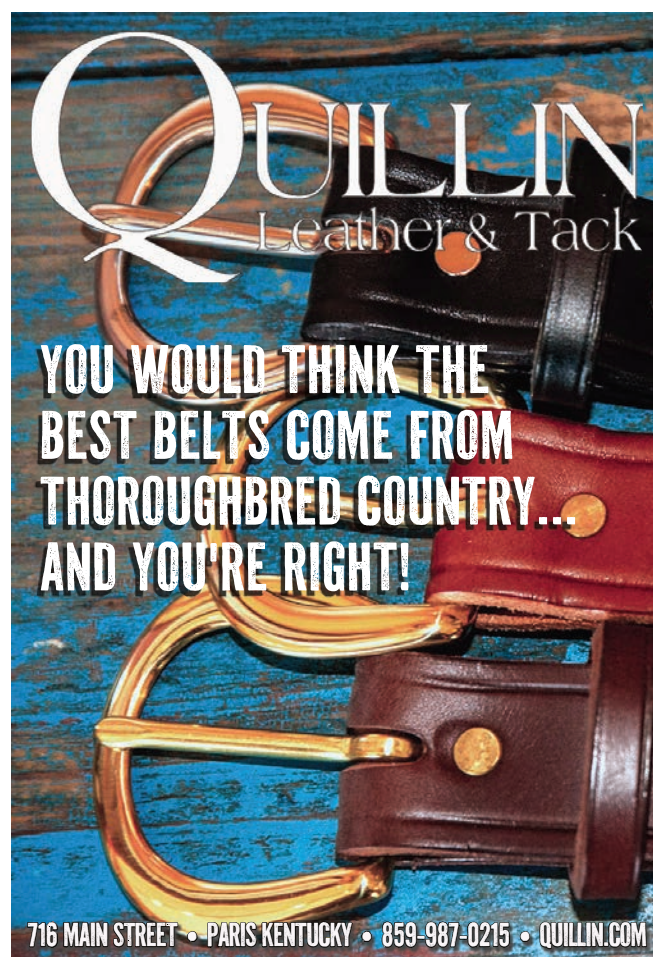
For this prospective case-control clinical study, researchers aimed to evaluate the differences in lung function measured by oscillometry between healthy and MEA-affected horses. In all 37 horses were divided into two groups—MEA and healthy—based on history and clinical score. They underwent

oscillometry at frequencies ranging from 2 to 6 Hz. For the study, obtained parameters included whole-breath, inspiratory, expiratory, and the difference between inspiratory and expiratory resistance (Rrs) and reactance (Xrs).

“No significant differences in Xrs and Rrs were observed between groups,” researchers concluded. “The frequency dependence of whole-breath and inspiratory Xrs significantly differed between healthy and MEA groups. For inspiratory Xrs frequency dependence, a cut-off value of -0.06 cmH₂O/L/s was identified, with 86.4% sensitivity and 66.7% specificity. Oscillometry can represent a useful non-invasive tool for the diagnosis of MEA. Specifically, the evaluation of the frequency dependence of Xrs may be of special interest.”

How to properly treat asthma is also a primary area of concern. In June 2024, the Veterinary Journal published “Towards personalized medicine for the treatment of equine asthma.”

“Although horses with asthma share similar clinical signs, the heterogeneity of the disease in terms of severity, triggering factors, inflammatory profile, and pathological features has hindered our ability to define biologically distinct subgroups,”



QUILLIN
Leather & Tack

**YOU WOULD THINK THE
BEST BELTS COME FROM
THOROUGHBRED COUNTRY...
AND YOU'RE RIGHT!**

716 MAIN STREET • PARIS KENTUCKY • 859-987-0215 • QUILLIN.COM

explained researchers. “The recognition of phenotypes and endotypes could enable the development of precision medicine, including personalized, targeted therapy, to benefit affected horses. While in its infancy in horses, this review outlines the phenotypes of equine asthma and discusses how knowledge gained from targeted therapy in human medicine can be applied to evaluate the potential opportunities for personalized medicine in equine asthma and to suggest avenues for research to advance this emerging field.”

In August 2024, the Equine Veterinary Journal published “Steamed hay and alfalfa pellets for the management of severe equine asthma.”

“Severe equine asthma affects approximately 15% of adult horses in the Northern Hemisphere, and is exacerbated when susceptible individuals inhale antigens and fine particles from the environment and during mealtime,” explained researchers. “The main recommendation for these horses is to limit exposure to dry hay, which can contain high levels of respirable particles and to house them outdoors, since the levels of fine particles and airway inflammation increase indoors. These conditions can be difficult to achieve for horses in training or living in regions where hay is the main source of food, especially in the winter.”

For this controlled crossover study, researchers wanted to compare the efficacy of alfalfa pellets and steamed hay



To ease the complications of severe asthma, one study recommends horses have limited exposure to dry hay and to house them outdoors when practical



Studies suggest the steaming of hay and alfalfa pellets is a preferable approach to feeding horses with compromised breathing

in improving lung function and inflammation of horses with severe asthma (SEA). In all 10 horses began the study, and nine completed it. They were housed indoors and fed hay. Then, once they were in exacerbation, they were fed pellets and steamed hay for a month. The horse excluded from the study did not reach the exacerbation criteria.

“This study shows that feeding steamed hay as the sole intervention for the management of horses in exacerbation of severe asthma can lead to significant improvement of clinical scores, lung function and BALF inflammation, but less reliably than pellets,” researchers concluded. “Some horses can respond well to steaming hay as the sole intervention but others might need additional dust control intervention. Management of horses with severe asthma should take into account other aspect of horses’ welfare, such as companionship (and the possibility of feeding the same diet to paddock companions) and behavioral effects of a complete pelleted diet.”

In the March/April 2025 edition of the Journal of Veterinary Internal Medicine, the study “Use of inhaled ciclesonide for treatment of moderate asthma in Thoroughbred racehorse” was published.

“Mild-moderate asthma is common in horses,” explained researchers. “Inhaled

Zycosan™

(pentosan polysulfate sodium injection)

250 mg/mL

For intramuscular use in horses only.

Brief Summary (For Full Prescribing Information, see package insert)

CAUTION: Federal law restricts this drug to use by or on the order of a licensed veterinarian. **DESCRIPTION:** Zycosan contains pentosan polysulfate sodium, a semi-synthetic polysulfated xylan. It is a pale yellow to brownish yellow, clear, sterile solution.

INDICATION: For the control of clinical signs associated with osteoarthritis in horses. **CONTRAINDICATIONS:** Horses with hypersensitivity to pentosan polysulfate sodium or any of the inactive ingredients in Zycosan should not receive Zycosan. Do not use Zycosan concurrently with other anticoagulant drugs. Do not use in horses with clotting disorders or within 24 hours of surgical procedures (see Warnings and Precautions).

WARNINGS AND PRECAUTIONS:

User Safety Warnings: Not for use in humans. Keep out of reach of children. Pentosan polysulfate sodium is a weak anticoagulant. Caution should be used when administering Zycosan if you are taking an

anticoagulant. **In case of accidental self-injection, seek immediate medical attention. If product comes into contact with skin, rinse skin thoroughly with water and seek medical attention if needed.** To obtain a Safety Data Sheet (SDS), contact Dechra at (866) 933-2472.

Animal Safety Warnings and Precautions:

Zycosan has been shown to prolong coagulation parameters up to 24 hours after injection, therefore caution should be used when administering this drug before or after strenuous activities (see Target Animal Safety). Due to the anticoagulant effects, this drug may exacerbate Exercise Induced Pulmonary Hemorrhage (EIPH). The concurrent use of NSAIDs with Zycosan has not been evaluated. Due to the anticoagulant effects of Zycosan and known anticoagulant effects of some NSAIDs, caution should be used if NSAIDs are concurrently administered. Horses concurrently treated with Zycosan and NSAIDs should be monitored for hemorrhage or other clinical signs of abnormal bleeding (e.g., petechiae, ecchymosis, or epistaxis). The safety of long-term repeat use of Zycosan has not been evaluated. Pigmentary changes in the retina (pigmentary maculopathy) have been reported in human patients following long-term oral use of pentosan polysulfate sodium. It is not known if a similar finding occurs in horses. The safe use of Zycosan has not been evaluated in

breeding, pregnant, or lactating horses.

Other Warnings:

Do not use in horses intended for human consumption.

ADVERSE REACTIONS:

Injection site reactions were the most frequently reported adverse reactions in the field study. Injection site reactions were associated with clinicopathology changes in some cases. Other adverse reactions reported in more than one horse were prolongation of coagulation parameters (activated partial thromboplastin time (aPTT) and prothrombin time (PT)), lethargy, behavior changes, and colic. To report suspected adverse events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Dechra at (866) 933-2472. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at <http://www.fda.gov/reportanimaladve>

STORAGE CONDITIONS: Store at room temperature 68-77°F (20-25°C), with excursions to 59-86°F (15-30°C).

MANUFACTURED FOR:

Dechra Veterinary Products
7015 College Boulevard, Suite 525
Overland Park, KS 66211 USA

Approved by FDA under NADA # 141-559
Zycosan is a trademark of Dechra Limited.
R 01 2023





Break free

Zycosan[®]
(pentosan polysulfate
sodium injection)

250 mg/mL

Help your equine patients
by controlling the clinical signs
associated with osteoarthritis

- 250 mg/mL in a 7.5 mL vial; more flexibility in dosing a wide range of horses
- With proper dosing at 3mg/kg, only 4 injections needed to provide maximum therapeutic effect
- FDA approved drugs ensure the manufacturing process is consistent to preserve the drug's quality
- Proven efficacy not limited to specific joints¹

**To learn more about Zycosan[®], please scan the QR code
or visit go.dechra-us.com/zycosan**

24-hour Veterinary Technical Support available: (866) 933-2472
Nonurgent Technical Support available: support@dechra.com



Important Safety Information

As with all drugs, side effects may occur. For intramuscular use in horses only. Not for use in humans. Pentosan polysulfate sodium is a weak anticoagulant. Caution should be used when administering Zycosan if you are taking an anticoagulant. **In case of accidental self-injection, seek immediate medical attention. If product comes into contact with skin, rinse skin thoroughly with water and seek medical attention if needed.** Horses with hypersensitivity to pentosan polysulfate sodium should not receive Zycosan. Do not use Zycosan concurrently with other anticoagulant drugs. Do not use in horses with clotting disorders or within 24 hours of surgical procedures. Caution should be used when administering this drug before or after strenuous activities. Caution should be used when NSAIDs are administered concurrently due to the anticoagulant effects of Zycosan. If Zycosan and NSAIDs are used concurrently, horses should be monitored for hemorrhage or other clinical signs of abnormal bleeding. The safe use of Zycosan has not been evaluated in breeding, pregnant, or lactating horses. The safety of long-term repeat use of Zycosan has not been evaluated. The most frequently reported adverse reactions are injection site reactions, prolongation of coagulation parameters (activated partial thromboplastin time (aPTT) and prothrombin time (PT)). Refer to the prescribing information for complete details or visit www.dechra-us.com.

¹ Zycosan[®] Freedom of Information Summary NADA 141-559

© 2023 Dechra Veterinary Products. Dechra is a registered trademark of Dechra Pharmaceuticals PLC. Zycosan is a registered trademark of Dechra Limited; all rights reserved. E230089

HEALTH ZONE

Respiratory Health

ciclesonide has been approved only for treatment of severe asthma in horses. We hypothesized that a 10-day treatment course of inhaled ciclesonide (Aservo EquiHaler) would improve clinical signs, endoscopic tracheal mucus scores, and bronchoalveolar lavage fluid (BALF) cytology in racehorses with moderate asthma.”

For the study, researchers did a prospective, randomized, double-blinded, placebo-controlled clinical study using racehorses with moderate asthma stabled at Emerald Downs Racetrack. For 10 days, 12 horses received inhaled ciclesonide and nine received a placebo. Clinical signs were assessed at different times using the Tesarowski and HOARSI scores and cough during exercise. Endoscopy scoring, BALF cytology, and BALF cell selected gene expression (RT-qPCR)



Horses racing at Emerald Downs in Washington were part of a study examining the use of inhaled ciclesonide (a corticosteroid) as part of a treatment plan to control inflammation associated with asthma

were assessed on Days 0 and 10.

“Only treated horses showed a decrease over time in HOARSI, cough, mast cell percentage, and relative expression of IL-6 and IL-13 in BAL cells,” researchers concluded. “Treated horses had lower HOARSI and mast cell percentage on Day 10. Treatment with inhaled ciclesonide improved clinical signs and decreased BALF mastocytic inflammation in racehorses with

moderate asthma without change in the environment. Treatment effect on neutrophilic or eosinophilic asthma remains undetermined. The small number of horses was a study limitation.”

Due to its prevalence in horses, especially Thoroughbreds, equine asthma will continue to be researched, and it is important to stay up to date on findings relating to cause, diagnosis, and treatment of the disease. **BH**

COURTESY OF EMERALD DOWNS

EQUIADE INC.

Harder Keeper? Picky Eater?

BODY BUILDER

It Works!

The first and still the best!
Manufacturing supplements for
champions since 1986.

- Increase Strength
- Improve Stamina
- Enhanced Muscles
- Reduce Nervousness
- Reduce Stress
- Improved Appearance

WWW.EQUIADE.COM | 727-562-2832 | INFO@EQUIADE.COM