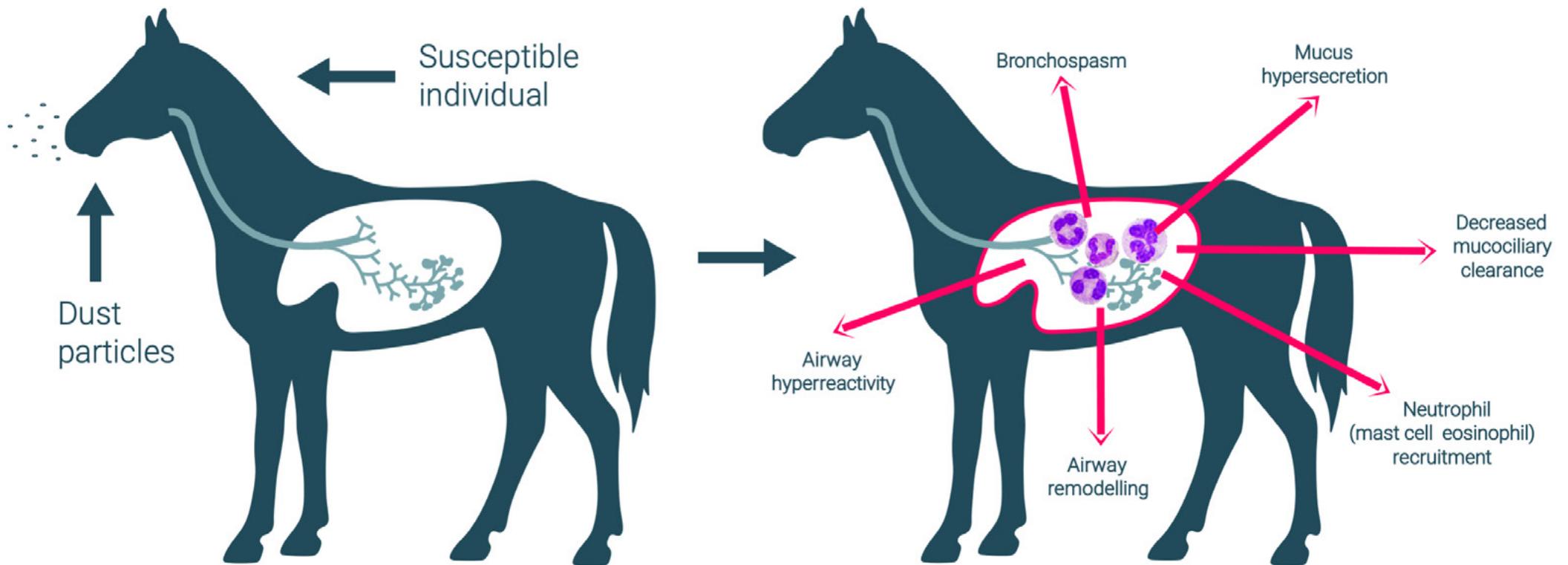




# Equine asthma treatment algorithm

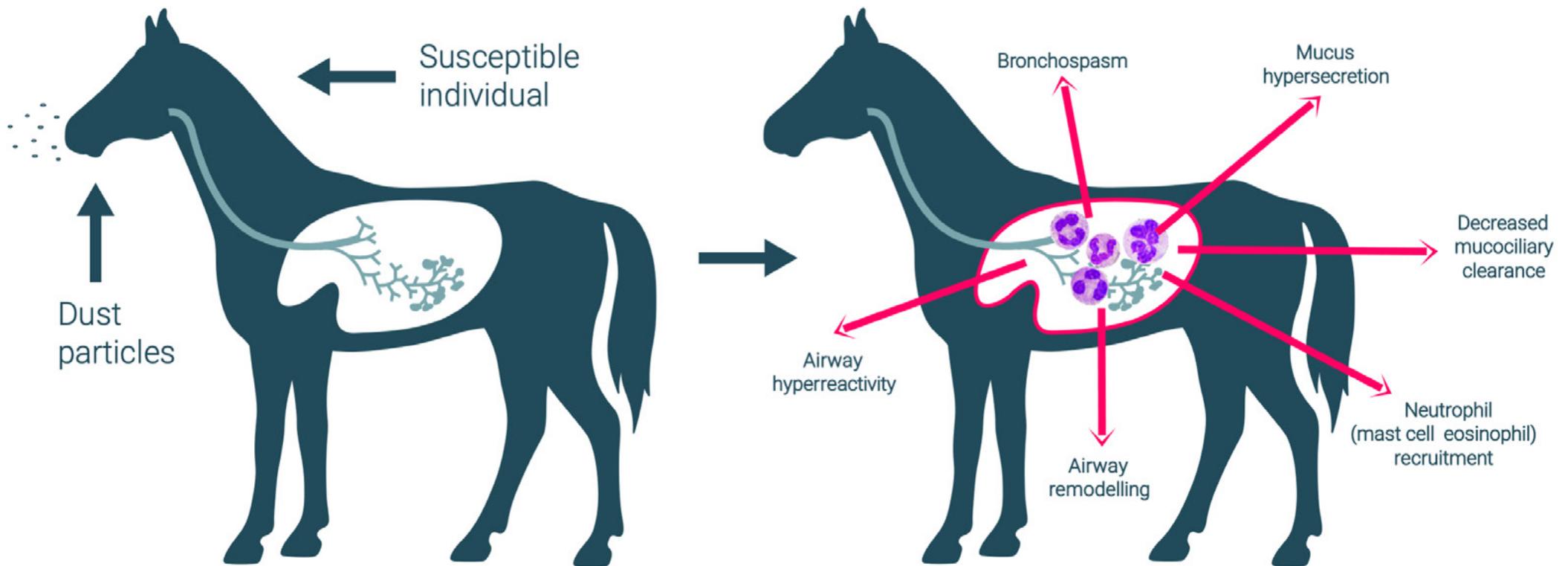
# Equine asthma pathophysiology in a nutshell

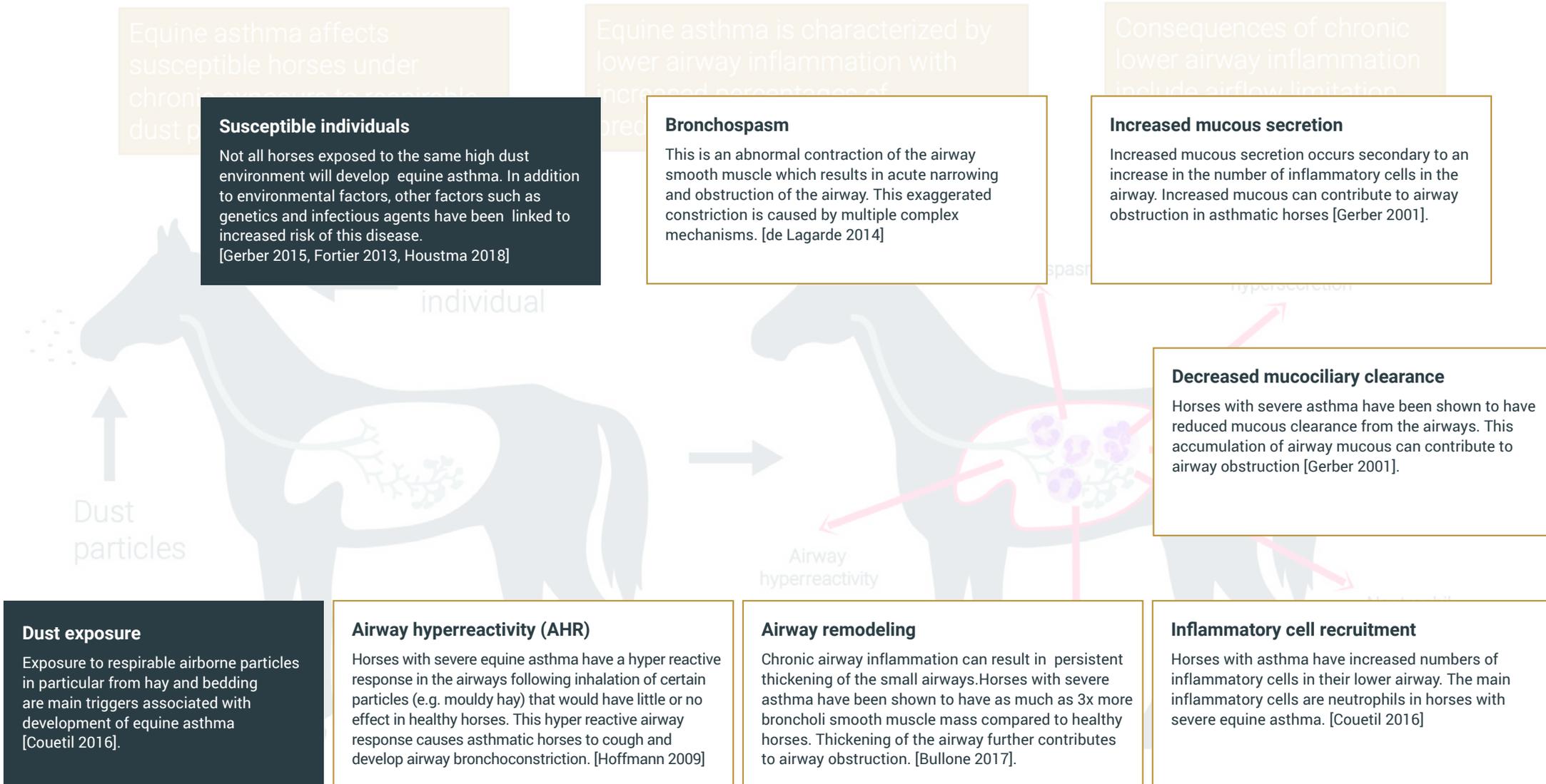


Equine asthma affects susceptible horses under chronic exposure to respirable dust particles

Equine asthma is characterized by lower airway inflammation with increased percentages of predominantly neutrophils

Consequences of chronic lower airway inflammation include airflow limitation and airway remodeling.



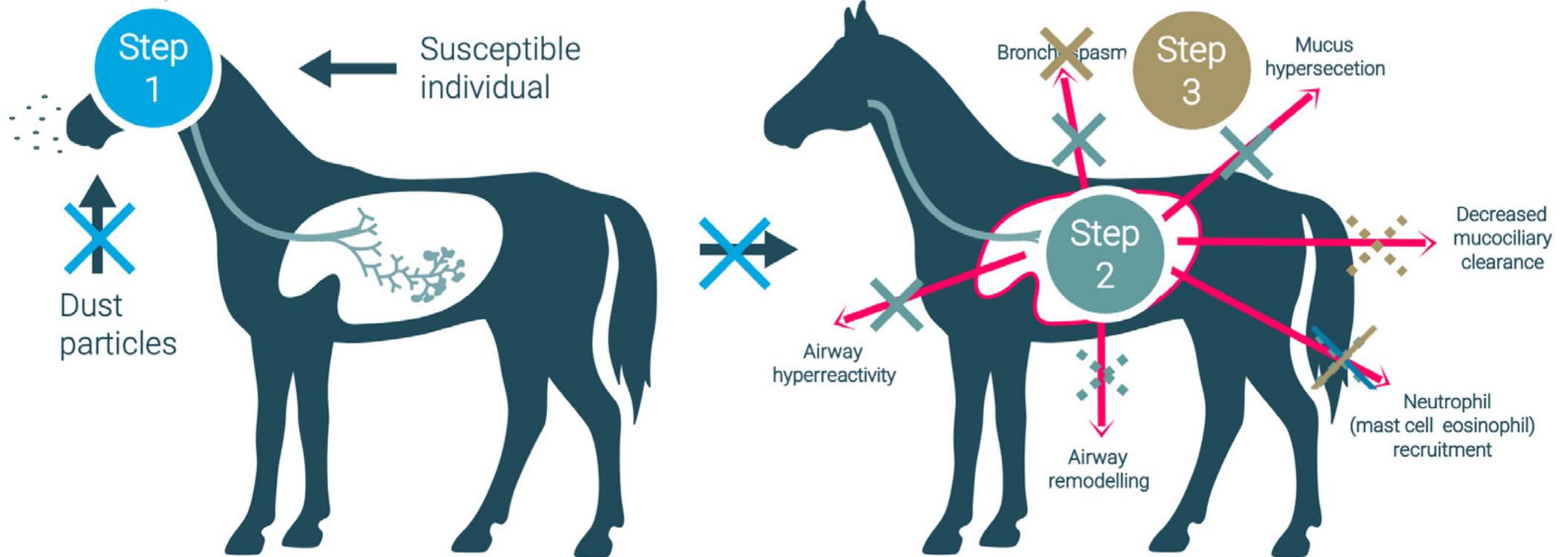


The treatment of equine asthma should be tailored to individual cases, however a general treatment algorithm includes<sup>1,2,3</sup>

1. Removal of triggering factor:  
environmental modification.

2. + Control of airway inflammation:  
environmental modification and/or  
corticosteroid therapy.

3. +/- Control of bronchospasm:  
with bronchodilator therapy in conjunction with environmental  
modification or corticosteroid therapy, or both.



# The Equine asthma treatment algorithm

## Step 1 Environmental modification

The most important intervention in regards to maintaining the long-term respiratory health, promoting disease remission and contributing to a reversal in airway remodeling is environmental modification.

Optimal management involves complete antigen avoidance by maintaining the affected horse on pasture\*.

If stabling is necessary, low dust bedding should be used (e.g. cardboard or dust-free shavings).

Forage should be provided in the form of pasture, dust-free hay, haylage or pelleted hay.

\* With the exception of cases of summer pasture associated equine asthma.

## Step 2 + Corticosteroid therapy

Corticosteroids target the lower airway inflammation, and improve clinical signs, airway hyperresponsiveness and airway obstruction in equine asthma.

The benefits of inhaled corticosteroid over systemic administration include delivery of high drug concentrations directly to the site of airway inflammation and improved safety profile related to lower systemic drug exposure.

[Mazan 2017, Pirie 2018, Cha 2017].

In addition, inhaled corticosteroids have shown the potential to partially reverse airway remodeling in severely asthmatic horses [Leclere 2012, Bullone 2016].

## Step 3 +/- Bronchodilator administration

As needed for fast relief of bronchospasm.

To facilitate the delivery of inhaled corticosteroids to the lower airways in horses with severe airway obstruction.

Additional benefits such as increased mucociliary clearance and limited anti-inflammatory activity have been shown with use of bronchodilators (clenbuterol) in asthmatic horses [Laan 2206].

# Equine asthma pathophysiology in a nutshell

