

EQUINE GUELPH

Research Update



Volume 18 - 2021

***Welcome to Equine Guelph's digital newsletter.
Many stories accompanied with researcher video interviews!***

Not long after the 2019 Havemeyer Workshop on Equine Asthma, Dr. Dorothee Bienzle, Ontario Veterinary College, contributed to a global collaborative research paper - *The current understanding and future directions of Equine Asthma research*.

Bienzle and her team concentrate on the host response to challenges like dusty barn air by looking at the epithelium in the lung. By the time a horse presents with severe equine asthma (= heaves) – they are looking at the disease close to the end stage. By taking biopsies of the epithelium in horses with heaves, they look at the genes and proteins that are present and expressed. Changes often include: airway remodeling, inflammation and fibrosis, to name a few. “The goal would be to identify the disease early during onset, which might allow the disease to be reversed,” says Bienzle.

Through next generation sequencing, Bienzle and her team have distinguished differences in gene expression between asthmatic and non-asthmatic horses. They have looked at signature variants that may indicate a susceptibility to asthma. They have identified a lack of certain anti-inflammatory proteins such as CCSP. A lack of repair functions has been observed in horses with end stage equine asthma such as a reduced ability to produce cytokines in adequate numbers and the inability to recruit undifferentiated epithelial cells to repair epithelial damage.

Unfortunately, at this time there are no early predictors of equine asthma. It may be possible that bouts of inflammatory airway disease at a younger age could predispose horses to asthma in later years but as of yet such evidence is not available. Bienzle explains the need to follow a large group of horses over their lifespan to come up with better predictors.

Be sure to watch the accompanying video which includes images from an endoscope procedure used prior to a



bronchoalveolar lavage (lung wash). Through use of an endoscope, one can assess the mucosa in the trachea and bronchi for secretions, blood, purulent material and look for other indicators impacting respiratory health. Narrowing of airway indicates a reduced ability to pass air in and out of lung. Excess mucous secretions are a secondary sign that reflects inflammation.

Take-aways for horse owners dealing with heaves include: early diagnostics, aggressive treatment and, most importantly, environmental management. Intervention is recommended at the first sign of a cough, especially if the cough is repetitive or persistent. Bronchoalveolar lavage (BAL) is the gold standard diagnostic test for asthma. Corticosteroids administered with a bronchodilator may be prescribed to help the horse recover from bouts of equine asthma but environmental improvement is the key. The best advice is to get them out of dusty barns and into fresh air.

Until the advent of early diagnostics, the focus for equine asthma needs to be first on prevention, and second on management and environmental improvement.

Learn more about this [research](#) or [donate](#).

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**Sign up for
Equine Guelph's
online courses**

TAKE THE NEXT STEP IN LEARNING

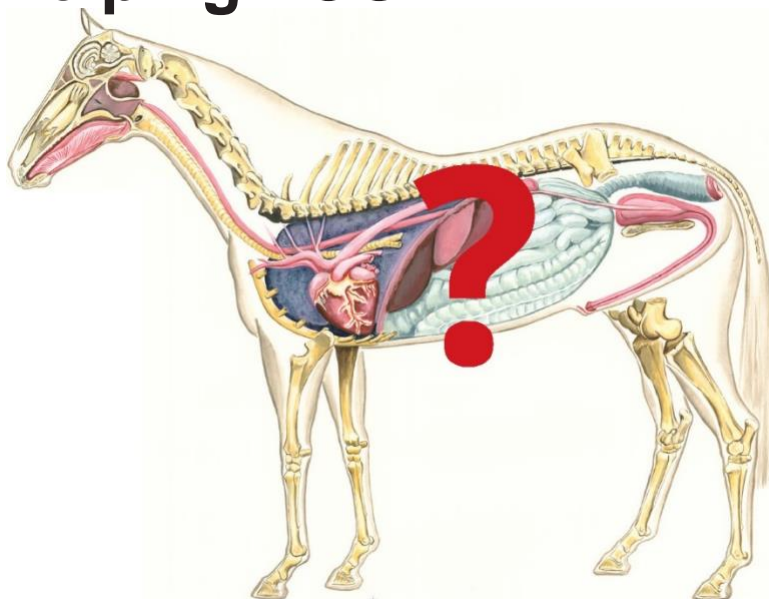
Flexible, online global community
Short Courses on TheHorsePortal.ca
12 week courses at EquineStudiesOnline.ca

2020 Research Recap

See How Research is Helping YOU!

Check out these research story links:

- ✚ Talking Horse Welfare in Canada - How do we see our industry?
- ✚ Deciphering Vitamin D in horses with colitis
- ✚ Research on Equine Lameness – Shock Wave
- ✚ Lameness Research – Biologic Therapies
- ✚ Cryopreservation of Equine Stem Cells for Cartilage Repair
- ✚ How 3-D printing is helping equine veterinarians
- ✚ Horse human interaction studies
- ✚ Research Study on Diagnostics for Equine Osteoarthritis of the Neck
- ✚ Comparing Equid Skulls for Insight into Behavioural Differences



Sign up for Equine Guelph monthly E-News to stay up to date on all the latest in health studies for 2021!

Anyone wishing to excerpt Equine Guelph should contact jbellamy@uoguelph.ca

A promotional graphic for Equine Guelph. It features a green and white background. At the top, the text "EQUINE GUELPH" is in a small red box, followed by "HEALTHflash" in a large, stylized font. Below this, it says "SEASONAL HEALTHCARE REMINDERS+ SPECIAL ALERTS" and "FREE" in large green letters. At the bottom, it says "sign up today at EquineGuelph.ca". On the right side, there is a photo of a woman smiling and holding a brown horse's head.

A promotional graphic for TheHorsePortal.ca. It features a banner that says "JOIN THE HERD" in red letters on a white background. Below the banner is a photo of three horses (two dark brown and one lighter brown) running in a green field. At the bottom, the text "TheHorsePortal.ca" is written in white on a black background.

**When you support EQUINE GUELPH you make a difference in horse health and well-being.
We can't do it without you.**



[Please make a gift online at www.EquineGuelph.ca](http://www.EquineGuelph.ca) or call 1-888-266-3108

Charitable registration Number 108161829 RR 0001

EquiMania! goes VIRTUAL

EquiMania! had a virtual presence at the Royal Winter Fair this year with all of its loyal sponsors pivoting with us. Thanks to their support of EquiMania! and Equine Guelph educational programs, that is not all that was on offer for horse-crazy youth missing out on the live version of the popular EquiMania! exhibit.

FREE FOR YOUTH!



HORSE BEHAVIOUR & SAFETY

*Online Course - Ages 13-17
Open until Feb 6 | Self-Paced*

TheHorsePortal.ca

An online course geared towards keeping youth engaged in learning about horses was developed and launched on November 6, 2020.

Its reach has been global with over 650 participants from around the world participating in the free online Horse Behaviour & Safety course.

With no specific time to be online, the self-paced on-demand format was developed to be super flexible and user-friendly, a perfect way for youth to fuel their passion and learn more about their favourite animal over the COVID-19 second wave months. There is approximately two-week's worth of material and activities, but with this special free offering, kids can keep coming back as often as they like until Feb 6, 2021.

"Thank you for doing the youth horse behaviour and safety course," says Lillian (a past student of the Horse Behaviour and Safety Youth Course). "I really enjoyed the course and learned a lot. The course was really fun, and I wish it was longer."

Now everyone can spend a little longer enjoying this self-paced special free offering!

We could not have done it without our loyal sponsors:

Thank you: ESSO, Kubota Canada, Ontario Equestrian, SSG Gloves, Shur-Gain/Trouw, System Fencing and Workplace Safety and Prevention Services.

There is still time to sign up for the on demand Horse Behaviour & Safety Free offering for Youth (recommended for ages 13 – 17). Go to TheHorsePortal.ca

EVENTS

Mark your calendar

Equine Guelph Winter Semester
12-week online courses begin
Jan 11

Equine Financial Futures
Monday night webinars resume
Jan 18

TheHorsePortal.ca short online
courses:

Equine First Aid Jan 25
Gut Health & Colic Prevention Feb 8
Fire/Emergency Preparedness Mar 8