

EQUINE GUELPH

Research Update



Volume 21 - 2024

Welcome to Equine Guelph's digital newsletter
including researcher video interviews!

A Stable Gut: The Key to a Healthy Equine

Gastrointestinal issues (GI) are the number one cause of morbidity in horses other than old age. An unhealthy digestive system can cause poor performance, pain, discomfort, diarrhea, and a whole host of issues that can sideline your horse. It's no wonder researchers are paying close attention to the 'second brain' and its billions of inhabitants. Ontario Veterinary College (OVC) researcher, Dr. Luis Arroyo has been studying the equine gastrointestinal systems for many years with several research projects receiving funding from Equine Guelph. Arroyo discusses what we know about equine gut health, causes of GI disorders and the extensive continuing research to understand what unstable and stable gut populations look like.

Starting with some basic anatomy Arroyo says, *"The gastrointestinal track of a horse is extremely large, and there are many things that can cause disturbances to the normal functioning or health of the gut."* A healthy gut microbiome is essential for the horse's entire body to function optimally.

Common signs of disorders could include abdominal pain, bloating, changes in fecal consistency (including diarrhea or constipation), excessive drooling, decrease in water consumption, lack of or poor appetite, weight loss and low body condition score.

"Some cases are more obvious to owners," says Arroyo, *"like poor performance, or acute or chronic diarrhea."*



Changes of behaviour such as becoming cranky or moody can be tell-tale signs there is unrest in the GI system. Biting at the flanks can signal abdominal pain as well as reactivity to being saddled. When the horse stops wanting to perform and athletic abilities suddenly decline, if there is no obvious lameness, GI issues are high among the considerations.

"Horses are herbivores, designed to consume a diet of forage, and to break down complex sugars within that forage," says Arroyo. *"The gut microbiota does this job and is very important for healthy digestion."* Recent research is connecting the changes in diversity of microbial communities to conditions like colic, colitis, and gastric ulcers.

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Future Research

Stable Gut – Key to a Healthy Equine cont'

Exciting new research that could impact the future of diagnostics includes screening for biomarkers as indicators of intestinal health among equine microbiota. Dr. Arroyo is currently working with research partner, Dr. Marcio Costa, from the University of Montreal, looking for biomarkers that indicate changes in the inhabitants of the equine gut that take place during the early onset of illness.

Developing PCR testing to screen for biomarkers could be a game changer that could potentially provide speedy, economical early diagnostics and early treatment.

So far, the most remarkable finding in the preliminary data reveals that in horses with colitis, the whole bacterial population is very depleted.

“At this stage we are in the process of increasing our numbers to find significant differences in which bacterial taxa are more important,” says Arroyo. “Soon we hope to share which bacteria taxa are more promising for predicting dysbiosis in horses with gastrointestinal disease.”

The researchers are delving into a huge biobank of samples to identify potential markers of intestinal dysbiosis in horses, utilizing PCR testing as a faster and more economical alternative to the complex DNA sequencing technologies that have been used to characterize changes in microbiota thus far. The goal is to develop simple and reliable testing that veterinarians can take right to the barn that will result in early treatment and allow closer monitoring of horses at the first onset of GI disease.

Read the full article including: causes of GI issues, current diagnostics, top tips to protect digestive health, and more about GI research at: <https://thehorseportal.ca/2024/01/a-stable-gut-the-key-to-a-healthy-equine/>

-story by Jackie Bellamy-Zions

Thank You For Supporting Research



Over 130 equine research projects have been funded since 2004 and Equine Guelph would like to extend sincere thanks to our supporters in the racing industry and donors like you who have made it all possible.

[Read the lay summaries](#) for past and present Equine Guelph funded research studies.

EVENTS

Mark your calendar

Equine Guelph [12-week online courses](#)

Summer Semester May 13

Fall Semester September 9

[TheHorsePortal.ca short online courses:](#)

Horse Behaviour & Safety
Feb 12 - 23, 2024

Gut Health & Ulcer/Colic
Prevention
Feb 26 - Mar 8, 2024

Sickness Prevention in Horses
Mar 18 - Mar 29, 2024

Equine First Aid
April 22 - 29, 2024

Introduction to Forage
Apr 8 - Apr 19, 2024

Introduction to Body Condition
Scoring – On Demand

Business 101 – On Demand

Horse Behaviour & Safety for
Youth – On Demand

Visit [TheHorsePortal.ca](#) for free exclusive racing industry courses

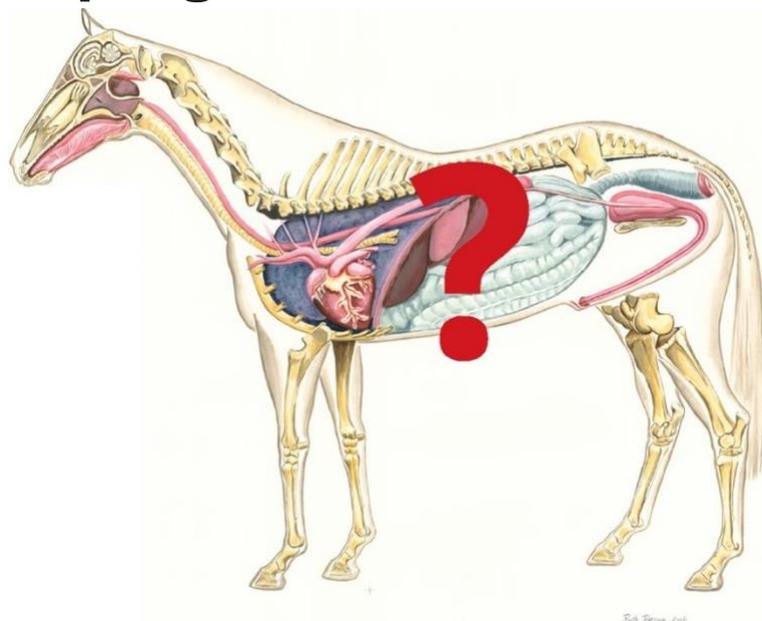
Contact slaymon@uoguelph.ca for upcoming offerings of Large Animal Emergency Rescue workshops.

2023 Research Recap

See How Research is Helping YOU!

Check out these research story & video links:

- ✚ A New Approach to Treating Kissing Spine
- ✚ Investigating a Parasite that may be involved in Equine Abortions
- ✚ A New Look at Lameness - Stem Cell Therapy Advances
- ✚ Air Quality and Air Pollutions Impact on Your Horse's Lungs
- ✚ Smoke Inhalation - Protect Your Horse's Health (info-sheet)
- ✚ Equine Asthma and Macrophage Responses
- ✚ Stem Cell Therapy Shows Promise For Equine And Human Joint Injuries
- ✚ Biosecurity - More Than Just Vaccination



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



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