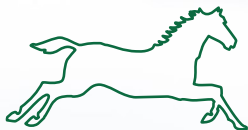


HORSE



UNIVERSITY OF
SASKATCHEWAN

HEALTH LINES

WESTERN COLLEGE OF VETERINARY MEDICINE

SPRING 2024



Dr. Nathalie Reisbig
📷 Christina Weese

Reisbig earns top RESEARCH PRIZE

By Cat Zens

Dr. Nathalie Reisbig's research work on an often-overlooked part of the equine anatomy earned the Western College of Veterinary Medicine veterinarian a top prize of \$10,000 at the Calgary International Equine Symposium in September 2023.

The annual event, which is hosted by the University of Calgary's Faculty of Veterinary Medicine, showcases equine sports medicine research from around the world and provides cash awards for the best research presentations.

Reisbig's award-winning platform presentation covered her research team's recent work on the equine temporomandibular joint (TMJ), which is often ignored as a potential pain source. All mammals – including humans — have these two joints that connect the lower jaw to the skull. In horses, these joints can experience additional stress when pressure is applied to the bit through rein tension.

Reisbig and her research colleagues investigated the effect of acute TMJ

inflammation on rein tension and horse movement when horses were long-reined on a treadmill. Their study showed that under rigorous conditions, TMJ inflammation in a horse can be a source of rein contact avoidance. Their findings were published in *Frontiers of Veterinary Science* in June 2023.

"My presentation [at Calgary] very much focused on the rider's side of it and 'their feeling' side of it — backed up by our objective data," says Reisbig.

Story continued on page 3.



Scientists bite into evasive **EQUINE DISEASE**

By Cat Zens

Pain in the temporomandibular joints (TMJ) — the two joints that connect the lower jaw to the skull — is a common health issue for people as well as dogs, cats and sheep. But up until a couple of years ago, the same couldn't be said about horses — and that always puzzled Dr. James Carmalt.

“If it's happening in horses and we're not picking it up, then maybe it could be the cause of poor performance, riding problems and eating problems,” says Carmalt, an equine specialist and scientist at the Western College of Veterinary Medicine (WCVN).

Carmalt's curiosity led to innovative research that confirmed the occurrence of TMJ disorders in horses — an aspect of veterinary medicine that has been chronically overlooked for decades. These studies showed that equine TMJs often do show signs of cartilage degeneration and arthritis which progress with age — just as they do in humans and other species. Carmalt recently spoke about his efforts to learn more about TMJ disorders in an episode of *Veterinary Vertex*, a podcast produced by the American Veterinary Medical Association (AVMA).

Dr. Nathalie Reisbig, a clinical associate in equine field service at the WCVN Veterinary Medical Centre, first became interested after encoun-

tering a case involving a horse with lameness exacerbated by TMJ issues. She was particularly intrigued by the distinctive cartilage found in the joint and the role that this cartilage plays in inflammation and healing.

“The cartilage in TMJ joints is fibrocartilage versus the cartilage in most other joints [which] is hyaline cartilage,” explains Reisbig, whose PhD degree in regenerative and translational medicine involved research targeting the healing of hyaline cartilage.

“So why does this joint have a different cartilage setup than other joints?”

With financial support from the WCVN's Townsend Equine Health Research Fund and the Mark and Pat DuMont Equine Research Fund, Carmalt and Reisbig are comparing the basic cellular metabolisms of the fibrocartilage and the hyaline cartilage along with their cellular responses to inflammation and anti-inflammatory treatments.

“We're going to see the proteins that are produced ... while they're treated,” Carmalt explains. “What is the cartilage producing now that I've treated you with X [product]? Do you go back to baseline and back to producing what you were, or have I fundamentally damaged you? If I use steroids in hyaline cartilage, is the response to treatment

different from the response in fibrocartilage?”

Carmalt and Reisbig hope that results from this latest study will provide important information for veterinarians and their clients.

“If you have solid data saying that one treatment is better than another or has a longer effect or a more positive effect, now you have a selling point for the owners,” says Reisbig. “None of these things are cheap, and so you want to give owners an idea of what to expect. This will really help owners to make good decisions for the best of their horses.”

Carmalt and Reisbig agree that there are probably many horses with chronic, undiagnosed TMJ disorders. They both hope to learn more about their actual incidence through a public group page on Facebook called *Equine TMJ Disease* that has more than 1,500 members from around the world.

While Carmalt and Reisbig are optimistic that their research will lead to better treatment options, they're also hopeful that their previous investigations to determine possible indicators of TMJ disease will expedite diagnosis and subsequent treatment. In this particular study, the researchers used subjective anecdotal evidence as well as objective measurements provided

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REISBIG EARNS TOP PRIZE *continued*



Dr. James Carmalt. Christina Weese

by rein sensors and kinematic cameras to confirm that TMJ pain causes behavioural changes — many so subtle that only the rider can detect them.

“For me, it was nice to prove that the rider’s standpoint and the rider’s feeling is incredibly important for a vet to listen to,” says Reisbig. She adds that the study’s anecdotal evidence and the rein sensors were more reliable indicators than the cameras.

“I think it’s an important lesson to us all that we shouldn’t disregard the rider’s feeling about how a horse has potentially changed.”

Based on their findings, Carmalt says veterinarians should consider adding TMJ disorders to the list of possible conditions when an equine patient shows lameness or behavioural issues. But on the other hand, there’s a danger of TMJ disorders becoming a “trendy diagnosis” — a growing tendency in certain disciplines.

To help address this issue, Carmalt recently published a paper in the *Journal of the American Veterinary Medical Association* that describes a logical approach to excluding common causes of poor performance in horses before investigating the potential role of TMJ disorders in cases.



From left: Dr. Renaud Léguillette, UCVM professor; WCVM researcher Dr. Nathalie Reisbig; and UCVM dean Dr. Renate Weller. Supplied

Her research team included University of Saskatchewan scientists from the WCVM and the College of Kinesiology as well as an equine researcher at the University of Zurich in Switzerland.

Originally from Norway, Reisbig took her veterinary training in Germany before coming to North America where she completed a combined large animal surgical residency-master’s program and a PhD degree in regenerative medicine at The Ohio State University.

Reisbig and her WCVM colleague, Dr. James Carmalt, are continuing to study the role of TMJ in relation to chronic pain in horses and treatment options. When she isn’t conducting research, Reisbig works as a clinical associate and member of the equine field service team at the WCVM Veterinary Medical Centre — a role that she has held since May 2022.

“When I did my PhD work, I was doing 90 per cent research and I wasn’t happy because I was missing the reality,” says Reisbig, who enjoys the hands-on aspects of equine practice. “Now I’m seeing what is actually going on and I can form the questions needed for research rather than doing research on things that might not actually be a problem to solve.”

Reisbig is passionate about her research directly tying into equine welfare — about improving horse health care and not settling for “good enough.” In recognition of her commitment to responsible horse health care, the Saskatchewan Horse Federation presented Reisbig with its Award of Distinction in Equine Welfare in March 2023.

Reisbig is grateful for the accolades and credits the industry’s support for helping her become more focused on addressing her patients’ smaller health issues before they become bigger — the essential goal of equine sport medicine.

“I’m focusing a lot more on talking to the riders about how the horse has changed,” says Reisbig. “If you can be on top of it [when treating] a tiny, tiny problem, then you can actually keep a horse happy and working and healthy for much longer.”

Cat Zens of North Battleford, Sask., is a fourth-year student in the University of Regina’s School of Journalism. She worked as a WCVM research communications intern in 2023.



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Horse Health Lines is the news publication for the Western College of Veterinary Medicine’s Townsend Equine Health Research Fund (TEHRF). Visit tehrf.ca for more information, Send comments and article reprint requests to:

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THE LIMB CHILL FACTOR

Study explores cold therapy options for laminitis cases

University of Saskatchewan (USask) researchers hope their review of previous studies assessing different types of cold therapies for preventing and treating equine acute laminitis will help veterinarians and serve as a starting point for a new cost-effective cooling boot.

The team's paper, which was recently published in *The Veterinary Journal*, evaluated the effectiveness of different types of continuous digital hypothermia (CDH) for preventing and treating laminitis. These interventions are also described as cryotherapy (cold therapy).

"This review can help veterinarians make decisions on which methods to attempt and which methods to maybe just stay away from — even if they may be more convenient," says Dr. Julia Montgomery, a specialist in large animal internal medicine and a professor at the Western College of Veterinary Medicine (WCVN).

"If you are a clinician in the field and you don't know if you have a horse with this disease, you don't know which techniques you can use to cool down these [the patient's] hoofs. You don't know the parameters that you need to follow to give the best treatment," says Ronaldo Avella Lavado, a USask graduate student and the paper's lead author.

Laminitis affects the lamellae of a horse's hoof. When these tissues are inflamed, damage to the connection between the tissue and hoof occurs, causing local pain. If left untreated, damage can worsen over time. Ideally, clinicians aim to prevent laminitis in horses at risk.

"With the hours and days passing by since the first clinical signs of [laminitis], it's harder to treat it and avoid further damage," says Lavado. "That's why it is so important to begin cryotherapy (CDH) treatment as soon as possible."


CDH helps cool down an animal's tissues to reduce tissue damage, inflammation and pain. Laminitis inflames the tissue through the effusion of harmful molecules and cells, affecting blood flow. As cooling decreases the blood flow circulation and metabolism of the affected region, less harmful molecules are produced — making CDH a standard preventive intervention for the disease.

When using CDH to prevent or treat laminitis, veterinarians cool a horse's hoofs below 10 C for 18 to 72 hours. Lavado recommends that the treatment continue for 24 to 48 hours after signs of inflammation recede. He also emphasizes that CDH is more effective as a preventive tool than as a treatment for an already existing condition.


The team's published review includes various CDH methods ranging in cost and efficiency along with the animals' reactions to different treatments. Options range from putting a horse's limb in a plastic bag of ice to using commercially available rubber ice boots. Most options are labour-intensive, timely and heavily reliant on ice, which isn't always available.

Montgomery and her collaborators are using the review's data to develop a more user-friendly and affordable cooling boot in partnership with RMD Group of Companies, based in Saskatoon, Sask.

"[The new cooling boot] can maybe be used in an ambulatory setting that doesn't require as much people power and moves away from the need for ice but still reaches the parameters that are clinically needed to actually be effective," says Montgomery.

The WCVN's Townsend Equine Health Research Fund provided financial support for this study. 

Cold therapy is most effective as a preventive tool than as a treatment for an already existing condition.

 Christina Weese



Preparing for the worst is the best plan for horse owners

By Cat Zens

No one wants a life-threatening disaster to occur at their barn or stable, but very few horse owners plan for potential emergencies, says Dr. Rebecca (Gimenez) Husted, a primary emergency response instructor.

“It’s actually pretty amazing what people don’t know about preventing problems with their animals,” says Husted, whose expertise is in large animal rescue. “If we spend more time on the prevention phase, we won’t have to do as much [work] on the response phase.”

Husted is the founder of Technical Large Animal Emergency Rescue, Inc. (TLAER), a Georgia-based organization that provides guidance in emergency prevention and response. In October 2023, she spoke at the Saskatchewan Equine Expo in Saskatoon, Sask.

Maintaining a sense of resilience

During any emergency, Husted says it’s vital to maintain a sense of resilience. To do so, equine facilities need to achieve two levels of emergency preparedness. Personal preparedness involves individuals practising evacuating themselves, families and animals in emergencies. Business preparedness involves planning what businesses might need during emergencies — from veterinary care to planning with their local fire departments.

Planning can mean different things to facilities located in different regions. For instance, preparing for extreme cold, blizzards, tornadoes or grassfires is integral on the Canadian Prairies. Barn fires, which can happen anywhere, are one of the most crucial situations to plan for.

Husted recommends that stable owners develop an emergency management plan for their facilities. Horse owners should meet with their local fire department and other emergency response teams to ask questions about disaster planning. Facility owners should talk with their insurers to confirm their coverage.

Horse owners also need to understand the importance of preparing to evacuate their horses. Husted urges owners to train their horses in handling, horsemanship and trailer loading so they’re prepared to evacuate when needed.

Adopting ‘best practices’


Husted recommends implementing “no smoking” and “no alcohol” policies within 75 metres (250 feet) of the barn to prevent fires. As well, horses should be microchipped or tattooed and up to date on their vaccinations. Trailers and trucks should be regularly serviced in all seasons.

Ensure that people can communicate with each other by cell or internet in

an emergency and make sure to have alternatives — such as mobile radios — available. Phone tree lists to communicate with staff, clients, horse owners and families are also ideal.

Husted encourages stable owners to meet with clients and staff to talk about preventing injuries, maintenance issues, animal handling and safety concerns. People’s input can help stable owners make decisions to improve operations.

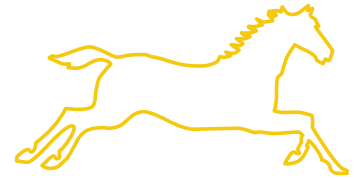
When the time comes to evacuate, timing is everything. Animals need to be evacuated as soon as possible, so Husted says it’s crucial to have a pre-planned site that can take in evacuated animals. She also recommends that barns have exterior stall doors so it’s easier to evacuate stabled horses during emergencies.

“I help people all over the world with these issues because it’s important and we’ve got to get better at being able to do [emergency and disaster prevention planning] — not only to keep our horses safe, but to keep people safe ... to keep emergency responders safe,” says Husted. 

QUESTIONS? Please contact Husted through the TLAER’s Facebook group, by email (delphiacres@hotmail.com) or by text (214-679-3629).

Visit tehrf.ca to read full story and a profile of Dr. Husted.

GALLOPING GAZETTE



EQUINE ENDOCRINE DISEASES

More than 75 local horse owners attended an equine health education session at the WCVM's Ryan/Dubé Equine Performance Centre in October 2023. Sponsored by Boehringer Ingelheim Canada (BI), the evening included a presentation about pituitary pars intermedia dysfunction (PPID) and equine metabolic syndrome by Dr. Valentina Ragno, a large animal internal medicine specialist at the WCVM. These two endocrine diseases are often diagnosed in obese and/or geriatric horses and require careful management. Dr. Julia Montgomery, another large animal internist at the WCVM, talked about the endocrine diagnostic testing that's now available through Prairie Diagnostic Services (Saskatchewan's provincial veterinary laboratory). Dr. Doug Myers, BI technical services veterinarian for Western Canada, concluded the evening with his presentation on Prascend (pergolide), the drug therapy that's available to treat horses diagnosed with PPID.

An audio recording of the evening's presentations is available on the WCVM site along with video recordings of the college's EquineED Talks. Visit wcvm.usask.ca and click on "Education" for more details.



WCVM clinicians demonstrate body condition scoring to local horse owners.



WCVM students Annette Gaudet (left) and Mackenzie Newlands review equine anatomy with participants at the Equine Education Day.

HORSE HEALTH 101 FOR RIDERS

More than 150 young riders and their chaperones braved frigid conditions in mid-January to attend the 2024 WCVM Equine Education Day on the University of Saskatchewan campus.

Organized and hosted by the college's veterinary students, the annual outreach event is the ideal opportunity for elementary and high school students to explore the world of horses, health care and health management. Using mini-lectures, demonstrations, tours and games, WCVM students covered a range of topics: equine anatomy and physiology, first aid, infectious diseases, bandaging, nutrition, dentistry, lameness and more.

While the Equine Education Day benefits the local horse community, it's also a valuable way for WCVM veterinary students to practise their communication skills with people of all ages. The event's sponsors included Saskatchewan Horse Federation, Early's Farm and Garden Centre, Greenhawk, Coutt's Agro, Community Horse Journals and the Townsend Equine Health Research Fund.

RESEARCH IN PRINT

A round up of WCVM-related equine research articles that were recently published in peer-reviewed journals.

Carmalt J. “Equine poor performance: the logical, progressive, diagnostic approach to determining the role of the temporomandibular joint.” *Journal of the American Veterinary Medical Association*. Nov. 2023. <https://doi.org/10.2460/javma.23.09.0513>.

Esdaille E, Knickelbein KE, Donnelly CG, Ferneding M, Motta MJ, Story BD, Avila F, Finno CJ, Gilger BC, Sandmeyer L, Thomasy S, Bellone RR. “Additional evidence supports GRM6 p.Thr178Met as a cause of congenital stationary night blindness in three horse breeds.” *Veterinary Ophthalmology*. Oct. 2023. doi:10.1111/vop.13151.

Ramirez M, Duncan C, Schaffer PA, Wobeser B, Magzamen S. “Environmental risk factors for UV-induced cutaneous neoplasia in horses: a GIS approach.” *Canadian Veterinary Journal*. Oct. 2023. 64(10):971-975.



Ricard M, St-Jean G, Atwal HK, Wobeser B. “A retrospective study of equine perinatal loss in Canada (2007 to 2020).” *Canadian Veterinary Journal*. Oct. 2023. 64(10):933-940.

Avella Lavado R, Lewis J, Montgomery JB. 2023. “Continuous digital hypothermia for prevention and treatment of equine acute laminitis: a practical review.” *The Veterinary Journal*. Vol. 300-302, 106016, ISSN 1090-0233.

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Dr. Valentina Ragno (at left) gives a laminitis presentation to Expo visitors.

📷 Krissy Thiessen

EQUINE EXPO 2023

In October 2023, Saskatchewan Equine Expo visitors had the chance to brush up on their knowledge of all things equine during the four-day show. Hosted by Saskatoon's Prairieland Park, the WCVM and the Saskatchewan Horse Federation (SHF), the annual expo showcases a variety of equine disciplines, training approaches and education through events, demonstrations and displays.

As part of the show's education component, veterinary students gave bandaging and dentistry demonstrations in the equine education area, which is annually organized by

the WCVM and SHF. Over in the agriculture centre, WCVM veterinarian Dr. Valentina Ragno paired up with Kim Lacey, a certified farrier from Alberta, to offer presentations on laminitis and lameness during the weekend. Another highlight was Dr. Rebecca Husted who offers training in technical large animal emergency rescue techniques to individuals and groups throughout North America. Husted gave several presentations on equine emergency planning, barn fire prevention and hazard-proofing stables as part of the show's information theatre events (see story on page 5).

HONOUR THEIR LIVES WITH THE GIFT OF EQUINE HEALTH

Pay tribute to the lives of your patients, clients and loved ones by making a donation to the Townsend Equine Health Research Fund (TEHRF) through its memorial program. Each time you give to the fund, we will send a letter to the client or loved one's family acknowledging your gift to the equine health fund.

"Our practice (Paton & Martin Veterinary Services) began to make contributions to the fund on behalf of clients when their horses passed away. We have found this to be a gratifying contribution and have been humbled by the responses that we have received from many of our clients. I think that it is very helpful for them to know that their horses have been honoured in such a fashion. The fund gives horse owners the additional opportunity to contribute to this very worthwhile cause: supporting vital research in the areas of equine health."

Dr. David Paton (DVM'78)
WCVM alumnus and TEHRF donor

Questions?

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