

# WEST COAST VETERINARIAN

SEPTEMBER 2022 | N° 48

## THE BRACHYCEPHALIC DOG EYE: OH M-EYE, WHAT HAVE WE DONE?



**CANINE  
OSTEOARTHRITIS**

**ACCIDENTAL  
DRUG TOXICITY**

**EASTERN  
COTTONTAILS  
AS PETS**

**COACHING: HYPE  
OR HOPE?**

**STARTING LIFETIME CARE  
FOR KITTENS**

**LEGAL IMPLICATIONS FOR  
A CHANGING WORKFORCE**



**SBCV 2022  
FALL CONFERENCE  
SEE INSIDE**



# ONE AND DONE™

NexGard SPECTRA™ is the first and only **once-monthly** soft chew to protect against all of the following:

-  Ticks
-  Fleas
-  Intestinal worms
-  Heartworm
-  Lyme disease
-  Demodex mites

Canada's #1 preventative pet product\*

## NexGard SPECTRA™



\* Data on File (Impact Vet YTD June 2021). NEXGARD SPECTRA® is a registered trademark of Boehringer Ingelheim Animal Health France, used under license. One And Done™ is a trademark of the Boehringer Ingelheim Group. ©2022 Boehringer Ingelheim Animal Health Canada Inc. All rights reserved.

# Prescribe with Confidence



1-866-794-7387

[www.svprx.ca](http://www.svprx.ca)



**COREY VAN'T HAAFF  
EDITOR**

Enjoying afternoon tea with Canada Summer Jobs youth Jwan (on left) and Carly (on right) on their last day of work.

» **TO THE EDITOR**

Letters from members are welcome. They may be edited for length and clarity. Email us at [wceditor@gmail.com](mailto:wceditor@gmail.com).

» **ON THE COVER**

Corneal pigmentation is very common in brachycephalic breeds. In our feature on page 26, Dr. Marnie Ford outlines the ocular health concerns to watch for when treating brachycephalic breeds.

I'm certain Charles Dickens was not thinking about BC veterinarians when he once wrote, "It was the best of times, it was the worst of times." The sentiment, however, is apt. The worst of times is ugly and unfortunately, is here. People with animals needing veterinary care who cannot get in to see a veterinarian are heaping abuse on front-end staff whose only fault was answering the phone. People are demanding that rural and semi-rural veterinarians open 24-hour emergency clinics, either not understanding or not caring that the veterinarians would have to pay the million or more dollars to set up a clinic, find the time to set up the clinic, then somehow, from thin air, find trained staff and veterinarians to provide after-hours emergency care.

I even heard of one animal owner who suggested that anyone getting into the veterinary profession must also be willing to give up any private or family time and make themselves available 24/7 as a basic requirement of the job.

Social media attacks have been vile for a long time; they've gotten worse. The pure drivel coming out of some people's keyboards is thoughtless, factless, and tactless—designed only to defame and hurt. It's working.

It is, indeed, in many ways, the worst of times.

But one thing has saddened me more than all this: I've recently seen some veterinarians turn on their colleagues. Don't get me wrong—I understand the sentiment of having nothing left to give, being out of options and out of time and out of energy and out of luck. I understand that it is sometimes easiest to turn on those we most need. But this division is more harmful, in my view, than all the external maelstrom the profession has withstood in recent years.

A veterinarian wrote to me that a neighbouring clinic sent them an angry email, upset that they had to look after a client when their own clients were taking all their available time. The email suggested the veterinarian take responsibility for their own caseload rather than relying on others. Of course, the original veterinarian was also hurt and surprised, as they had been on unexpected house calls and were unable to deal with one particular client who insisted on some type of veterinary care that very moment. The choice to contact the second veterinarian was solely the client's; the criticism landed solely on the original veterinarian.

It is an impossible situation. I know that. But I also know that circumstances make us bitter or better; it is a choice, even when you think there's no choice. I wish you all the strength you need to get through the worst of times and journey toward the best. Dr. Klemmensen's article in this issue about how coaching can empower veterinarians to build stronger, happier teams is a reminder that we have so much power to help ourselves and each other. Without a doubt in my mind, veterinarians are the greatest people I know. **WCV**

Email: [wceditor@gmail.com](mailto:wceditor@gmail.com)

**WCV**  
SEPTEMBER 2022

WEST COAST VETERINARIAN ISSUE 48

West Coast Veterinarian is the quarterly magazine of the CVMA-SBCV Chapter



**EDITORIAL COMMITTEE**

Sarah Armstrong (she/her), DVM, Chair  
Ashlee Albright (she/her), DVM  
Christiane Armstrong (she/her), DVM  
Sarah Graham, DVM, DACVS (Large Animal), DACVSMR (Equine)  
Cori Stephen, DVM

**EDITOR**

Corey Van't Haaff (she/her)  
Email: [wceditor@gmail.com](mailto:wceditor@gmail.com)

**ART DIRECTOR**

Karim Sharobim, BDes

**COPY EDITOR**

Eva van Emden (she/her)

**PUBLISHER**

CVMA-SBCV CHAPTER  
Email: [cvma-sbcv@cvma-acmv.org](mailto:cvma-sbcv@cvma-acmv.org)  
Telephone: 604.406.3713  
PO Box 21088 Maple Ridge Square RPO  
Maple Ridge BC V2X 1P7  
[www.canadianveterinarians.net/SBCV](http://www.canadianveterinarians.net/SBCV)

**PUBLISHER'S ASSISTANT**

Lily Laverton (she/her)

**AD SALES**

Inga Limmatta  
Email: [ingal@telus.net](mailto:ingal@telus.net)  
Phone: 604.202.3826

**CVMA-SOCIETY OF BC VETERINARIANS  
CHAPTER 2022/2023 BOARD OF DIRECTORS**

**PRESIDENT**

Al Longair, DVM  
ANIMAL WELFARE COMMITTEE LIAISON

**VICE PRESIDENT**

Jessica Robertson (she/her), DVM  
HUMAN RESOURCES LIAISON

**SECRETARY-TREASURER**

Rob Ashburner, DVM  
DELTA EQUINE SEMINAR LIAISON

**PAST PRESIDENT**

Sarah Armstrong (she/her), DVM  
EDITORIAL COMMITTEE LIAISON

**DIRECTORS**

Christiane Armstrong (she/her), DVM  
MEMBERSHIP COMMITTEE LIAISON  
CVMA COUNCIL MEMBER REPRESENTING THE CVMA-SBCV CHAPTER  
Fraser Davidson (he/him), DVM  
PROJECTS COMMITTEE LIAISON

Paul Kennedy, DVM  
REGIONAL DIRECTOR FOR THE NORTH

Marco Veenis (he/him), DVM  
CONTINUING EDUCATION COMMITTEE LIAISON

© 2022 CVMA-SBCV Chapter. No part of this publication may be duplicated or reproduced in any manner without the prior written permission of the CVMA-SBCV Chapter. All efforts have been made to ensure the accuracy of information in this publication; however, the CVMA-SBCV Chapter accepts no responsibility for errors or omissions. **The views presented in West Coast Veterinarian are those of the respective contributors and do not necessarily represent the Chapter.**

With VetStrategy's support, I'm able to provide the best care for my patients.



You take care of animals. We take care of you.

Being part of Canada's leading veterinary community means there's always a team of trusted peers ready to support you. Whether you're an experienced vet or just starting your career, we have a place for you here. Our goal is to help you achieve your goals – no matter how big or small.

Ready to find your place with us?  
[vetstrategy.com/careers](http://vetstrategy.com/careers) | [careers@vetstrategy.com](mailto:careers@vetstrategy.com)



# 26

## THE BRACHYCEPHALIC DOG EYE: OH M-EYE, WHAT HAVE WE DONE?



# SEPTEMBER

- 04 FROM THE EDITOR
- 09 WCV CONTRIBUTORS
- 10 FROM THE CVMA-SBCV CHAPTER PRESIDENT
- 11 FROM THE CVMA PRESIDENT
- 12 FROM THE CVMA-SBCV CHAPTER WCVL STUDENT LIAISON  
GOVERNMENT OF BC COMES THROUGH WITH SUPPORT FOR WCVL STUDENTS, PRESENT AND FUTURE
- 14 FROM UBC'S ANIMAL WELFARE PROGRAM  
THE EVERYDAY WORK OF "ONE WELFARE"
- 16 NAVIGATING CANINE OSTEOARTHRITIS MANAGEMENT  
NEW CANADIAN CONSENSUS TREATMENT GUIDELINES BASED ON OA-COAST STAGES 1-4
- 24 EDUCATING CLIENTS ABOUT EASTERN COTTONTAILS  
TAKING A PROACTIVE APPROACH
- 45 SBCV TEAM  
A SYMPHONY OF TALENT AT YOUR SERVICE
- 47 FROM A LAWYER



## 20 COACHING: HYPE OR HOPE FOR VETERINARY MEDICINE?

## 32 SPECIALIST COLUMN: ACCIDENTAL DRUG TOXICITY IN COMPANION ANIMALS



## 40 A YEAR IN THE LIFE: SETTING KITTENS UP FOR A LIFETIME OF HEALTH

## Tails up for **Canada's first** oral flea and tick product for cats



### NEW Credelio<sup>®</sup> CAT (lotilaner)

### Introducing a small chewable tablet uniquely designed for cats.

- **Passes the "sniff test"** – made with vanilla and yeast, cats are attracted to it<sup>1</sup>
- **Easy dose it** – over 99% of cat owners administered it successfully<sup>2</sup>
- **Send fleas and ticks packing** – kills fleas and ticks, lasting all month<sup>3</sup>

Ask your Elanco representative for details.  
[Learn more at CredelioCat.ca](https://www.CredelioCat.ca)

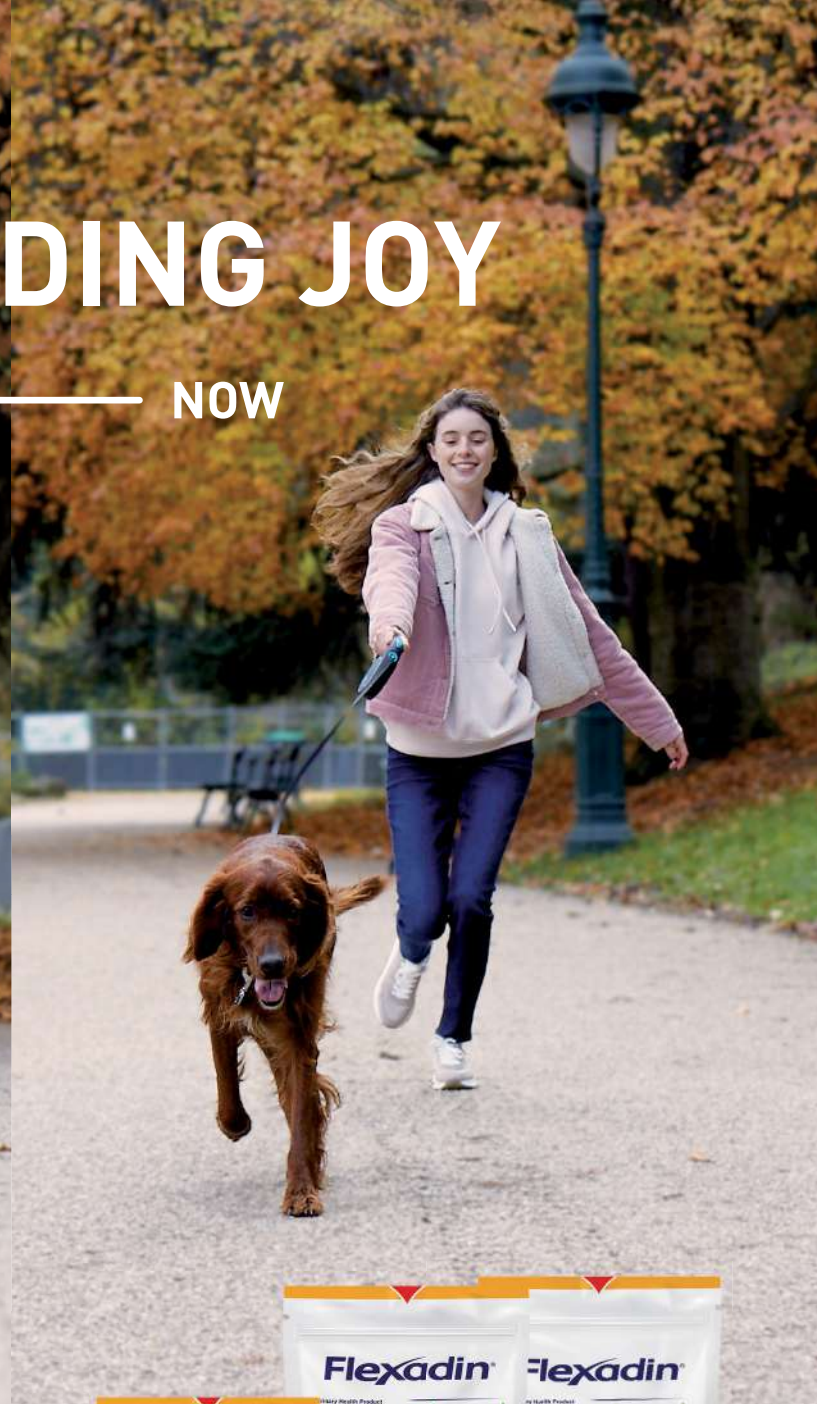


1. Toutain C, Seewald T, Jung M. Pharmacokinetics of lotilaner following a single oral or intravenous administration in cats. Parasite Vector. 2018;11:412.  
 2. Chappell K, Paarlberg T, Seewald W, et al. A randomized, controlled field study to assess the efficacy and safety of lotilaner flavored chewable tablets (Credelio<sup>®</sup> CAT) in eliminating fleas in client-owned cats in the USA. Parasite Vector. 2021;14:127.  
 3. Credelio Cat Canadian Product Label.



# EXTENDING JOY

THEN ——— NOW



CHECK OUT ITS MODE OF ACTION HERE!

## JOINT MOBILITY SUPPORT FOR DOGS



**Flexadin**® Advanced



**ASHLEE ALBRIGHT, BSc (Honours), DVM**, graduated from WCV in 2011. She has worked as a companion animal veterinarian in various regions of BC from Northern BC to the South Coast. Her current goal includes juggling the daily needs of motherhood, veterinary medicine, marriage, and personal sanity, all without taking herself too seriously. She currently lives and works in gorgeous Greater Victoria.



**CARSTEN BANDT, DVM, DACVECC**, graduated from the Free University of Berlin, Germany, in 1997. He followed this with an internship and residency in small animal internal medicine. From 2003 to 2006, Dr. Bandt completed a residency in emergency and critical care at the Tufts University Foster Hospital for Small Animals before starting the emergency and critical care service at the University of Florida and working as an Assistant Professor for Emergency and Critical Care at the Department of SACS. In 2015, his family moved to Vancouver and he started working at the Emergency Critical Care Department of Canada West Veterinary Specialists.



**MARNIE FORD, PhD, DVM, DACVO**, graduated from Ontario Veterinary College in 2000 after completing a Bachelor in Zoology at the University of British Columbia and a PhD in Physiology at Monash University in Australia. Following a rotating small animal internship at the University of Minnesota in 2001, Dr. Ford achieved diplomate status from the American College of Veterinary Ophthalmologists in 2006 following an ophthalmology residency at the University of Missouri-Columbia. After founding West Coast Veterinary Eye Specialists in New Westminster (2004-2013) she opened Pacific Animal Eye Specialty Services, providing mobile medical and surgical ophthalmologic care to patients in the Lower Mainland, Vancouver Island, and the Interior. In 2019, she returned to Australia where she works full-time and participates in resident training at Animal Eye Care in Melbourne, Australia.



**KIRSTEN HAMMOND, RVN**, qualified as a registered veterinary nurse with the RCVS in London in 2018 and has since worked and volunteered in a wide range of veterinary settings in Canada and the UK.



**ARLENE KEIS, BEd, MEd**, is a semi-retired professional whose career span includes work as a teacher, counsellor, human resources professional, and industry association executive. From 2002 until 2020, Arlene was the CEO for BC's tourism industry's human resources association, go2HR. Arlene loves horses and can often be found riding the trails with her 14-year-old Quarter Horse gelding. Arlene has an MEd in Counselling Psychology from UBC and a BEd in English from the University of Victoria. She is also designated as a Chartered Professional in Human Resources (Ret).



**ELAINE KLEMMENSEN, DVM, CEC**, is always up for an adventure, especially if it involves people, pets, and creating connections in veterinary medicine. A self-described nerd about leadership, workplace culture, and organizational development, Dr. Klemmensen is a Certified Executive Coach holding the ACC-level certification with the International Coaching Federation as well as a certificate in Values-Based Leadership. Dedicated to helping veterinarians and their teams move from surviving to thriving, she founded Evolve Leadership Coaching and Consulting and is currently studying visual facilitation and strategic thinking. She lives in the beautiful West Kootenays and when not learning something new is most likely exploring the world by bicycle with her husband, Rob.



**KATHERINE KORALESKY, MSc, PhD**, completed her MSc and PhD in the Animal Welfare Program at the University of British Columbia and is now a post-doctoral fellow in the program. She uses qualitative and social science research methods to understand the human dimensions of animal welfare on dairy farms, in companion animal sheltering and protection, animal welfare law, on-farm assurance programs, and in emerging agricultural technologies. Her doctoral work investigated how animal sheltering policies and animal protection laws organize what happens to animals. Her research illuminated frontline work practices involved with responding to concerns about animals in distress, helping animals with behavioural problems, and One Welfare initiatives.



**MARGIE SCHERK, DVM, DABVP (Feline)**, graduated from Ontario Veterinary College in 1982. In 1986 she opened Cats Only Veterinary Clinic in Vancouver, practising there until 2008. Dr. Scherk became board certified in feline practice by the American Board of Veterinary Practitioners in 1995, recertifying in 2004 and 2014. She founded the feline medicine folder on VIN in 1994. An active international speaker and past president of the AAFP, Dr. Scherk has authored numerous book chapters and scientific papers and is the co-editor of the *Journal of Feline Medicine and Surgery*.



**HANNAH WEITZENFELD, DVM**, is the senior manager of animal health for the BC SPCA. After graduating from Ontario Veterinary College, she made British Columbia her home and has been practising locally for over a decade. In her role at BC SPCA, Dr. Weitzenfeld provides animal health support, training, and oversight to all sheltering branches, including population-level shelter medicine and sanitation protocols. Her role also involves liaising with local veterinarians and connecting with the veterinary community.

“You may say I’m a dreamer / But I’m not the only one / I hope someday you’ll join us / And the world will live as one.” After listening to our spring CE sessions on equity, diversity, and inclusion (EDI), John Lennon’s song “Imagine” comes to mind. As a society, we need to be more aware that despite our skin colour, our religion, or our language, we are all one species. Unfortunately, too many people live with little to survive on. In our western world, we have not been exposed to the real world outside of our opulent society. Refugees are desperately trying to find places where they can live safely and adequately. We are finally starting to see the truths of what people are suffering—history from another perspective.

I had the opportunity to attend the Alberta Veterinary Medical Association Leadership Weekend in Calgary in June. This year they had two Indigenous speakers who talked about the world from their perspective. They stressed how important it is for their history to be told to reach the reconciliation that is so desperately needed.

Janice Makokis is a scholar and lawyer who is involved in international and national Indigenous advocacy work through various international bodies and United Nations mechanisms to advance the discourse on Indigenous peoples’ rights. She gave a presentation on “Truth First” and “Truth before Reconciliation,” and why it was important for non-Indigenous people to understand the history of Indigenous people. Lee Crowchild, Chief of the Tsuut’ina Nation on Treaty 7 Territory, talked about building bridges and creating pathways to bring better understanding to multi-cultured solutions for projects. He works on developing growth in knowledge and practice to both Indigenous and non-Indigenous worlds.

Both of these discussions made me uncomfortable, as I knew so little. Those of us who are settlers in Canada need to recognize what was done in the past and work diligently to

make reconciliation meaningful to all of us.

EDI is more than just an Indigenous concern. It involves people of colour, people of different religious backgrounds, and 2SLGBTQIA+ issues. Our province has a wide diversity of citizens, and we should be working in clinics and hospitals that reflect that diversity. Why do we pass by people with a different skin colour or religious background? Society in general seems to care less about learning about each other; instead, I see people ignoring concerns or denying that they exist. When I meet someone who is not white, I want to know what their heritage is, learn from them, and ask if they need any help that I can provide.

Our professional training and work revolves around communicating and helping others and their animals. We are trained to be good listeners. If you are unsure what you think of a person, take your open mind and listen to what they are saying. Do not ask demeaning questions. Learn more about the person. We are missing out on expanding our lives and work. At the same time, we need to treat all clients and staff with respect and care, regardless of their colour.

We all need to learn more about EDI issues and do our best to be open and honest with staff, clients, and neighbours.

The Canadian singer and songwriter Dan Hill wrote a song in 1975 called “People.” It certainly is relevant in this day and age. The chorus is “I love I hate / I live I die / For every single day / That passes me by / But for all the pain / That meets my eyes / I still believe in people.” We have to think beyond ourselves, acknowledge that we need to be more open about life and assisting others. Let’s see if we can reach John Lennon’s vision: “I hope someday you’ll join us / And the world will live as one.” We have so much to do.

Have a great fall. Take care of yourself, your families, and your fellow workers.

We can do it together. [WCV](#)



Al Longair, BSc, DVM, graduated from Western College of Veterinary Medicine in 1977. After graduation, he joined a mixed animal practice in Duncan, focusing on small animal practice from 1981 on. He has been involved with the BC SPCA for over 20 years, serving as the president of his local branch for 12 years and on the provincial management committee for 10 years, with four years as president. In the early 1990s, he served as chair of the CVMA Animal Welfare Committee. He lives on a small acreage with his wife, three horses, three dogs, and two cats and coaches youth soccer in his spare time.

As your CVMA president, it is my pleasure to update you on some of the CVMA’s initiatives.

#### ANIMAL HEALTH WEEK 2022—HABITAT PROTECTION AND PANDEMIC PREVENTION

Animal Health Week is an annual national public awareness campaign organized by the CVMA and hosted by veterinarians across Canada. During the first week of October, veterinary teams across Canada promote a significant animal health message and responsible animal ownership as part of Animal Health Week celebrations. This year, building on the previous two Animal Health Week campaigns, the CVMA is further exploring the One Health theme with a focus on habitat protection and pandemic prevention. From October 2 to 8, 2022, the CVMA will raise awareness about how disruption of animal habitats in various forms, from forests to farms, can impact the health of ecosystems and affect global human health. Canada’s veterinary professionals occupy unique positions within the national One Health community and can help educate clients about how protecting animals’ health and habitats protects everyone’s health. Promotional tools, including a robust social media campaign, resources, and articles, will be available to promote Animal Health Week across the country. A free Animal Health Week poster will be included in the July issue of the *Canadian Veterinary Journal*. An additional poster will be mailed to veterinary hospitals and clinics across the country in August. As Animal Health Week nears, visit the Animal Health Week section of the CVMA website at [canadianveterinarians.net/veterinary-resources/practice-tools/animal-health-week-ahw/ahw-2022](http://canadianveterinarians.net/veterinary-resources/practice-tools/animal-health-week-ahw/ahw-2022) to find tips and tools to help plan your celebrations. Generous support of the 2022 Animal Health Week campaign is provided by program sponsors iFinance Canada (Petcard) and Petsecure.

#### LIFELearn BENEFITS

CVMA members receive 10 per cent off at LifeLearn. If your practice website doesn’t save staff time and streamline administrative tasks to reduce stress, LifeLearn WebDVM websites are custom designed to do just that. Visit the Member Benefits section of our website for more information including how to request a free consultation and to learn more about putting WebDVM to work for your practice. [WCV](#)



Louis Kwantes, MSc, DVM, was born in Michigan and raised in Japan. He now lives Sherwood Park, Alberta, and has for the past 28 years. He graduated from Ontario Veterinary College in 1987 and completed an MSc in Tropical Veterinary Medicine at the University of Edinburgh in 1989. Dr. Kwantes’s professional background includes mixed animal practice in Ontario and overseas veterinary postings in Haiti, Uzbekistan, and the Middle East. He is presently at National Veterinary Associates at Park Veterinary Centre, a companion and exotic animal veterinary clinic he co-founded in 1997. He is a past board member of the Edmonton Veterinary Emergency Clinic, past president of the Edmonton Area Small Animal Veterinarians group, and served the Alberta Veterinary Medical Association for over 12 years in a variety of capacities, including as president in 2015. Dr. Kwantes was presented a CVMA award for scholarship and leadership in 1987, shared the CVMA Hill’s Public Relations Award in 2006, and was awarded a Rotary Integrity Award in 2015. He is grateful to have represented colleagues as executive member of the CVMA’s Executive Committee the past few years and is excited to serve as the 2021–2022 CVMA president. Together with his wife, Janet, he is now an empty nester, save for a spoiled cat. Dr. Kwantes still loves working with animals and people and feels honoured to share in the bond between pets and their caretakers.

# GOVERNMENT OF BC COMES THROUGH WITH SUPPORT FOR WCVM STUDENTS, PRESENT AND FUTURE

BY MADISON AUDEAU, BSc



Note from the editor: This is Madison's final column for WCV. As is typical, the student liaison gives up the role as they enter their final year of study. We thank Madison for all her great work, and we welcome Fiona Lamb as the next WCVM student liaison.

“A few days late for an April Fools’ Day prank,” I remember thinking when the news came in on April 4. That morning’s lectures had just wrapped up when a classmate in the row behind tapped me on the shoulder, “Have you checked your email yet today?”

The dean of WCVM, Dr. Gillian Muir, had sent a message notifying all students that the government of BC had at last agreed to provide funding to increase the province’s quota of seats at WCVM from 20 to 40 next year.

For some background, these 20 seats used to belong to Albertan applicants. The government of Alberta, through WCVM’s Interprovincial Agreement (IPA), formerly subsidized these seats, meaning students were only responsible for paying the standard tuition fee. However, the province of Alberta redirected its funding to the University of Calgary’s Faculty of Veterinary Medicine in 2019, and my class (WCVM’s class of 2023) was the last to contain Albertan students with provincially subsidized seats.

In 2020, WCVM renewed the IPA with its remaining partner provinces (BC, Saskatchewan, and Manitoba) and increased the class size from 78 to 83. For the first time, 25 of those spots became non-IPA seats, not subsidized by any province but open to all applicants in western Canada. However, those students had to pay that additional approximately \$55,000 per year themselves, on top of another approximately \$12,000 that the subsidized students were paying. In 2021, five more non-IPA seats were added for international applicants, bringing the class size to 88.

Now, in 2022, this BC funding announcement is for \$10.7 million, including funds to subsidize 20 more seats for BC students. The makeup of WCVM’s class of 2026 is given in Table 1.

The funding also includes approximately \$1.2 million to cover that additional \$55,000 per student next year for the 24 BC students currently enrolled with non-IPA seats. When the good news broke, these students were busy writing finals and wrapping up their first and second years.

“As a non-IPA student, I burst into tears when I saw the email,” said Emily Holmes, a second-year student from Nanaimo. “I was calling my parents, and they were crying. I am so grateful to be receiving this support from my home province. I look forward to going home and supporting pets and their families in a couple of years when I graduate.”

Holmes says this funding changes how she thinks about her financial future. “It means my partner and I will be able to buy a home sooner and think about having kids sooner after graduation than we could have ever dreamed. This is completely life-changing.”

As this decision essentially amounts to an 80 per cent reduction in tuition next year for current non-IPA students, it opens all kinds of doors. “This funding is incredibly important to me. It will pretty much change how I look at things post-graduation,” said second-year student Kirsten Chamberland. “I will be way more likely to consider an internship or residency because I won’t have that huge amount of debt weighing on me.”

It’s important to note that this provincial funding is so far only guaranteed for the 2022–2023 academic year. WCVM is hopeful that the government will continue to support these students beyond next year. Still, it acknowledges that current and prospective students face some ambiguity in the meantime.

“The WCVM appreciates that not having a firm commitment about B.C.’s provincial seat quota in the DVM program creates uncertainty for B.C. residents considering applying to the veterinary college. Since there is a critical need for all types of veterinarians in B.C. and throughout Western Canada, we strongly advise anyone interested in the profession to apply for the DVM program at the WCVM,” reads the 2022 application manual.

“Here in BC, we do not lack talented, driven, and eligible students who wish to become vets and to work in our beautiful province,” said Ruth Patten, a second-year student from Kelowna. “But we are lacking a long-term solution to address the lack of veterinarians here at home.” Patten and several of her classmates who hold non-IPA seats, though they appreciate now having their third year of study subsidized, are still left with about \$110,000 more debt than their IPA-supported BC classmates in the first three years of study. And there is still year four to consider.

“I think it’s a great start for BC to be contributing to help the non-IPA students for the 2022–2023 year. The amount of stress that extra tuition puts on students on top of the stress of vet school is substantial,” said Camryn Pettifer, a second-year student from Coquitlam. “But if we had had these 40 seats two years ago, no students would’ve had to pay this ridiculous amount of tuition. It would be very beneficial and appreciated for the BC government to forgive some student loans from the past couple of years at least and subsidize their final years.” Any additional provincial funding for the 2023–2024 academic year and beyond is pending a decision in March 2023.

From the students at WCVM, I’d like to thank the SBCV for the steadfast advocacy that got us here. The SBCV has been working for years alongside veterinarians, media, and politicians to bring attention to our province’s veterinary shortage and the need to train more veterinarians. Thank you to both the Minister of Agriculture and Food and the Minister of Advanced Education and Skills Training for prioritizing veterinary students. BC’s current and future WCVM attendees are grateful.

This decision is a real win for educational equity at WCVM, for overwhelmed clinics desperate for more veterinarians, and for farmers and pet owners across the province. [WCV](#)



PHOTOS COURTESY MADISON AUDEAU

Madison Audeau, BSc, WCVM class of 2023, is from Nanaimo, BC. After a career in radio broadcasting, she earned a BSc in Biology at Vancouver Island University before coming to WCVM. After graduation, she looks forward to returning to the BC coast as a small animal clinician.

## Meds Made Easy



This simple, mobile app gives your clients the convenience of ordering directly from your inventory of pre-approved Vet prescribed medications and consumables 24/7/365.

Orders are automatically sent to your accounting system to be processed for shipment or pickup.



Keeps your pharmacy sales in-house



All transactions are traceable and easily accessible



Hassle free label prep and printing



Meet all regulatory requirements



Eliminates double entries, reducing costly errors



Easy client management of prescription refills



Make it easy for clients to buy from you.

Contact us for a free demo.

[www.ervet.com](http://www.ervet.com)

Eastern Canada Call: 519-914-1779

Western Canada Call: 403-694-0436

Features are subject to accounting system used.

# THE EVERYDAY WORK OF “ONE WELFARE”

BY KATHERINE KORALESKY, MSc, PhD

If “One Health” has helped transform veterinary public health, “One Welfare” is transforming the work of animal protection officers. Traditionally, animal protection officers and special provincial constables were seen as enforcement officers working under the British Columbia Prevention of Cruelty to Animals Act by intervening whenever situations met the legal definition of animal “distress.” This often involved seizing animals and housing them in shelters in cases of hoarding, neglect, or abuse. While these actions are still necessary in some cases, the One Welfare concept has shifted the language of animal sheltering and protection toward keeping people and animals together and maintaining the human-animal bond. This involves initiatives like free or low-cost veterinary services, emergency animal boarding, and pet food banks. For officers, it also means providing alternative measures instead of traditional enforcement.

But what does this shift in language and organizational aims mean for the daily work activities and practices of officers? Part of my doctoral work under the supervision of Dr. David Fraser explored the new world of officers by accompanying them on ride-alongs as they conducted their typical, busy days of responding to calls. I used a research approach called “institutional ethnography,” which was developed by renowned Canadian sociologist Dorothy Smith. Institutional ethnography begins research by exploring actual, everyday work practices and then maps how these practices are being organized by institutional aims and procedures. During ride-alongs, I saw the complexity of the work officers did and how their choices in navigating challenging cases shaped what happened to the people and animals involved.

Officers would regularly receive and respond to calls from supportive housing, often single-room occupancy buildings, where people had pets. Sometimes animals were in poor condition and needed some support but did not meet the legal definition of distress. In these cases, providing alternative measures was a way to support people and their animals so they could stay together. Officers told me that they had traditionally tried to provide alternative measures in such situations, but now this option was becoming more formally linked to institutional aims. Hence, part of their work involved documenting requests for financial or veterinary assistance and the kind of assistance provided.

The actual work of providing alternative measures requires officers to assess the animal, talk with the owner, consider options (e.g., animal removal, issuing a citation, providing practical resources) and decide what to do. During one call, for example, an

officer referred a cat owner to a free veterinary clinic, but the owner did not have a carrier to transport the cat. The officer and I promptly went out to the truck, selected a carrier and some cat food, and gave the supplies to the owner. Officers’ ability to do this required them to regularly stock their trucks with supplies like food, treats, carriers, cat litter, dog waste bags, bowls, collars, leashes, and blankets.

In many cases, providing alternative measures improved animal welfare and allowed people and their animals to stay together. This was not always the case, however, for a variety of complex situations. Sometimes the situations involved owner limitations such as health problems or cognitive decline. In these cases, officers explained to me that they learned on the job and from other officers about available human social services (e.g., food banks, mental health agencies) they could refer animal owners to.

## “PROVIDING ALTERNATIVE MEASURES WAS A WAY TO SUPPORT PEOPLE AND THEIR ANIMALS.”

Many owners were already recipients of human social services, and thus officers also had to coordinate their work with other service providers. This is complex work that involves institutional and legal constraints and sometimes results in “miscommunications” between officers and social service providers. For example, miscommunications sometimes arose when officers received similar calls of concern from the same building, where supportive housing staff were not aware of the BC SPCA’s legal mandate: relieving distress in animals. In other cases, calls did not come soon enough. This was the case when frontline animal shelter staff received approximately 40 rats of different ages relinquished from a single supportive housing room. Providing daily care for the rats, some of whom were in poor condition, stretched the staff’s resources, which was frustrating to them, as knowing about the situation sooner would have likely made it easier to address.

The work of officers as well as frontline animal shelter staff is being transformed by a recognition that keeping people and animals together is often in the best interest of the person and the animal. The actual work practices involved, however, are complex, demanding, and warrant further inquiry. Future work might include observing how communication between animal protection officers and human social services happens, creating opportunities for animal protection officers to share best practices, assessing the success of different forms of alternative measures in various situations, and observing how people living in supportive housing actually use the alternative measures that are provided. **WCV**

PHOTO BY ZAC DURANT/UNSPASH.COM

# GET TO KNOW US IN A *heartbeat.*

Everyday, we are inspired by the joyful, openhearted pets we serve. We are here for them, and here for each other. Does that sound like an environment where your career dreams can come true?

Get to know NVA Canada. In a heartbeat you’ll discover why finding the right team means you never have to choose between reaching your potential—and enjoying every step of the journey.

**Follow your heart:**  
[NVACanada.ca/careers](https://NVACanada.ca/careers)



For the love of **animals**  
and the **people** who love them.



# NAVIGATING CANINE OSTEOARTHRITIS MANAGEMENT: NEW CANADIAN CONSENSUS TREATMENT GUIDELINES BASED ON OA-COAST STAGES 1-4

BY ASHLEE ALBRIGHT, DVM

Picture the scene: a flustered mother fills an exam room with her two newly adopted senior Boxers and her two young children. The Boxers pant and pace anxiously while the children squabble over who gets to hold their leashes and sprinkle the fishy crackers on the floor. The room is stuffy and anything but quiet as you scan the adoption papers and begin your physical examinations. Both dogs have histories of old cruciate ligament injuries, and the older Boxer struggles to sit on the slippery floor. They have been managed medically for their stifle injuries and have received monthly Cartrophen injections for several years. Your client, who you quietly realize is wearing her pants backwards, says, “Oh, but I don’t think they are in pain.” You begin to rattle off your vague osteoarthritis spiel for the fourth time today.

When I started veterinary school some 15 years ago, I would daydream about the awesomeness of my veterinary superpowers-to-be: to educate people and put an end to companion animal pain and suffering for good. I never dreamed how challenging and tedious it would be trying to convince an owner that their old dog was suffering through the all-too-common chronic osteoarthritis (OA) pain. And when you layer on the difficulties of assessing disease progression and choosing from an abundance of multimodal therapies, it becomes clear that this is a difficult disease to diagnose and treat.

A new open-source, Elanco-sponsored publication, “Proposed Canadian Consensus Guidelines on Osteoarthritis Treatment Based on OA-COAST Stages 1-4” provides a prioritized guide for veterinarians managing canine osteoarthritis. The report combines currently available scientific research and clinical experiences from a group of multidisciplinary veterinary experts in the field of osteoarthritis. See the sidebar for an overview of COAST staging and OA treatment recommendations at each stage.

Dr. Conny Mosley, the lead author of the OA treatment guidelines, wears many impressive hats: she is a practicing boarded veterinary anesthesiologist and heads the Newmarket Pain Clinic in Ontario. She is certified in acupuncture and is a founding director and the vice president of the Canadian Association of Veterinary Cannabinoid Medicine. Her passions

for integrative medicine and chronic pain management sparked the collaboration of veterinary surgeons, anesthesiologists, sports medicine and rehabilitation practitioners, a pharmacologist, and a general practitioner to create these guidelines for Canadian veterinarians. She recognizes that managing an OA case “must be a collaborative approach, and it is not just up to you as one veterinarian to deal with it. There is the possibility to consult with a veterinarian who has rehabilitation experience and to see what can be done for injury prevention, to work with a nutritionist, or a surgeon who can do or even teach you how to perform joint injections. We can delegate a technician to take over certain aspects of OA management such as weight/nutrition management.”

Dr. Mosley sees the need for a structured but integrative approach to the management of osteoarthritis. She emphasizes the importance of “looking at the different stages of OA, recognizing that we have to treat this disease earlier. Owners and even we as veterinarians have a tendency to wait until the pain is advanced before we start treatment.” For veterinarians who are reluctant to start a four-week NSAID course in an OA stage 2 patient, her advice is that “we need to get the inflammation controlled early so that it does not progress as fast and the only prudent way at this point is an NSAID at an effective dose.” She admits that the lowest effective dosing (LED) of an NSAID is controversial in veterinary medicine. “Using an LED and capping NSAID dosing comes from human medicine but the veterinary studies show that we lose a lot of the pain component when we cap the dose.”

When asked what is next on her to-do list, Dr. Mosley would like to continue to expand on the guidelines by creating simple handouts for pet owners and tools for veterinarians to make OA assessment and diagnosis easier. Another goal may include collaborating with sports medicine colleagues to create rehabilitation exercise handouts tailored to manage specific injuries.

Remember our overwhelmed client with the old Boxers and squirrely kids? I must confess that this client is indeed me. I have been known to work a shift with my pants on backwards because I am a busy mother, a wife, an owner of too many pets, and a hyper-focused veterinarian. I have three dedicated home pharmacies for my aging pets. I put medication reminder stickers on a giant poster calendar, keep daily medications (including the 180 ml bottle of

“I NEVER DREAMED HOW CHALLENGING AND TEDIOUS IT WOULD BE TRYING TO CONVINCING AN OWNER THAT THEIR OLD DOG WAS SUFFERING THROUGH THE ALL-TOO-COMMON CHRONIC OSTEOARTHRITIS PAIN.”

Metacam) visible on a high open shelf above the dog leashes, and aim for grace when I am two weeks late giving the Cartrophen. Managing two dogs and one cat with arthritis and comorbidities is a lot, and executing my own advice is impossible at times. It takes a village to raise kids, and the same applies to managing complex diseases like OA in our patients. We can’t “do it all” alone, and I suspect Dr. Mosley would agree. Her words “together is a good thing that we should be doing more of in veterinary medicine” are a gentle reminder to lean on collaboration with our veterinary teams and colleagues.

To save space, the references for this article are made available on the Chapter’s website at [www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine](http://www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine). [WCV](#)

## COAST

The canine osteoarthritis staging tool (COAST), published in 2018, provides a consistent way to approach the diagnosis and monitoring of OA. It combines owner and veterinarian assessments to provide standardized scores of OA risk and progression.

### Step 1a: Grading the dog

The pet owner completes a clinical metrology instrument such as the Liverpool osteoarthritis in dogs (LOAD) index or the canine brief pain inventory (CBPI) and records their opinion of the overall degree of their dog’s discomfort over the previous 30 days. The veterinarian evaluates the dog’s stationary posture and mobility parameters such as limb loading, body weight distribution between forelimbs and hindlimbs, and ability to remain standing.

### Step 1b: Grading the joint

The veterinarian performs a full orthopedic examination to determine the degree of pain and to assess range of motion. Radiographs provide additional information regarding severity of bone remodelling. A single COAST grade is given to each affected joint, and the most severely affected joint is used to guide treatment.

### Step 2: Staging the OA

The results of steps 1a and 1b are then compared to confirm and stage the diagnosis of OA from stage 1 to stage 4. Studies have demonstrated that one in four dogs live with osteoarthritis and that most of these dogs are not diagnosed until their senior years, when they show moderate to severe orthopedic changes. As in many chronic diseases, early diagnosis and intervention allow us to provide the most effective management by disrupting the multifactorial pathophysiology of joint deterioration. Client education about the risk factors, pain behaviours, and OA disease progression, and sending owners home with a LOAD questionnaire makes identifying mildly arthritic dogs easier. Table 1 ranks specific risk factors and owner/veterinarian observations into OA-COAST stages.

Elanco has launched an interactive COAST staging tool for veterinarians and a LOAD questionnaire for pet owners at [www.galliprantvet.com/us/en/coast-tools](http://www.galliprantvet.com/us/en/coast-tools) to facilitate quick OA staging in our patients.

## THERAPEUTIC GUIDELINES

Once we have staged the osteoarthritis, we can use the guidelines to develop a systematic multimodal treatment plan. Setting client expectations for regular follow-up visits to assess the patient’s response and disease progression is crucial. Regardless of OA stage, all patients should be provided with baseline information about nutrition, weight management, and regular exercise. Perhaps the most important risk factor for the development and advancement of OA is obesity, which not only increases joint load but also produces inflammatory cytokines and adipokines that promote systemic inflammation. Maintaining dogs at a lean body condition score is one of the most important goals of managing OA at every stage. Nutritional guidance by ensuring appropriate caloric intake and diet selection is a dynamic and important part of treating obesity. Regular exercise tailored to each stage of OA is crucial to limit joint trauma from excessive impact and torsion, to keep the joints mobile, to promote cartilage health, and to maintain muscle mass.

Table 2 summarizes the treatment guidelines by OA stage. Recommendations are subdivided into “core” and “secondary” treatments. Whereas core treatments required all nine authors’ votes based on available supporting scientific evidence, secondary treatments were not unanimously agreed on and were chosen based on individual clinical knowledge and experience.

In addition to the consensus guidelines, the report serves as a detailed reference and literature analysis for each treatment’s mechanism of action and pharmacology.

“... LOOKING AT THE DIFFERENT STAGES OF OA, RECOGNIZING THAT WE HAVE TO TREAT THIS DISEASE EARLIER. OWNERS AND EVEN WE AS VETERINARIANS HAVE A TENDENCY TO WAIT UNTIL THE PAIN IS ADVANCED BEFORE WE START TREATMENT.”

COAST stage	Owner/veterinarian observations
<b>Stage 1</b> Preclinical but at risk	<p><b>Risk factors</b></p> <ul style="list-style-type: none"> <li>Genetic predisposition</li> <li>Long-term participation in intense activity</li> <li>Joint injury or surgery</li> <li>Obesity</li> <li>Congenital joint abnormality</li> <li>Older age</li> </ul>
<b>Stage 2</b> Mild	<p><b>Pain behaviours</b></p> <ul style="list-style-type: none"> <li>Asymmetric posture when standing or sitting</li> <li>Subtle difficulty in rising and lying down</li> <li>Reluctance to jump into car/onto furniture</li> <li>Reluctance to play</li> <li>Young dog unable to keep up with peers</li> <li>Difficulty with stairs</li> </ul> <p><b>Veterinarian assessments</b></p> <ul style="list-style-type: none"> <li>Mildly reduced range of motion</li> <li>Mild radiographic osteophytes</li> </ul>
<b>Stage 3</b> Moderate	<p><b>Pain behaviours</b></p> <ul style="list-style-type: none"> <li>Obvious asymmetry of static limb loading</li> <li>Obvious shift in static body weight distribution</li> <li>Stiff gait</li> <li>Some difficulty rising and lying down</li> </ul> <p><b>Veterinarian assessments</b></p> <ul style="list-style-type: none"> <li>Decreased range of motion</li> <li>Muscle atrophy apparent</li> <li>Joint thickening</li> <li>Obvious radiographic osteophytes</li> </ul>
<b>Stage 4</b> Severe	<p><b>Pain behaviours</b></p> <ul style="list-style-type: none"> <li>Restless and reluctant to remain standing</li> <li>Severe shift in static body weight distribution</li> <li>Severely abnormal limb loading and lameness</li> <li>Reluctant to move</li> <li>Severe difficulty rising and lying down</li> </ul> <p><b>Veterinarian assessments</b></p> <ul style="list-style-type: none"> <li>Limited range of motion with crepitus</li> <li>Joint thickening</li> <li>Anatomical misalignment</li> <li>Advanced muscle atrophy</li> <li>Advanced radiographic osteophytes and bone remodelling</li> </ul>

TABLE 1: Risk factors and owner/veterinarian observations by OA-COAST stage.

COAST stage	Treatment recommendations
<b>Stage 1</b> Preclinical but at risk	<p><b>Goals:</b> Educate client about OA prevalence, early recognition, and prevention measures; maintain optimal joint health</p> <ol style="list-style-type: none"> <li>Client education about risk factors and disease prevention</li> <li>Omega-3 fatty acids 100 mg/kg daily of DHA/EPA from fish/marine based oils; joint-focused diets</li> <li>Exercise focused on building strength and endurance, reducing high impact and repetitive strain</li> </ol> <p>Note: all treatment recommendations for stage 1 apply to stages 2–4</p>
<b>Stage 2</b> Mild	<p><b>Goals:</b> Preserve healthy cartilage and treat flare-ups quickly; educate client about signs of OA</p> <p><b>Core</b></p> <ol style="list-style-type: none"> <li>Client education regarding progression of OA, regular orthopedic exams, monitoring response to therapy, exercise plan e.g., low-impact walks/swims, avoiding ball throwing</li> <li>Rehabilitation veterinarian referral to develop targeted therapeutic exercises</li> <li>Lifestyle/household modifications to avoid high-impact injuries and slipping</li> <li>Pain management: NSAID trial for 4 weeks to control pain and to reduce inflammation/peripheral sensitization; reassessment at 4 weeks; flare-up injuries warrant 3–5 days of NSAID and recurring flare-ups warrant long-term NSAID</li> </ol> <p><b>Secondary</b></p> <ol style="list-style-type: none"> <li>Laser therapy, pulsed-electromagnetic field therapy, acupuncture, cryotherapy</li> <li>Chondroprotective supplements</li> </ol>
<b>Stage 3</b> Moderate	<p><b>Goals:</b> Provide adequate pain control and maintain mobility</p> <p><b>Core</b></p> <ol style="list-style-type: none"> <li>Client education about disease progression, quality of life (QOL), and pain management</li> <li>Referral for formal rehabilitation program</li> <li>Lifestyle/household modifications to prevent injury and improve QOL e.g., ramps, baby gates, carpet runners, well-padded dog beds, nail grips, assistive harnesses, nail/foot fur trimming</li> <li>NSAID long-term with regular bloodwork and reassessments</li> </ol> <p><b>Secondary</b></p> <ol style="list-style-type: none"> <li>Gabapentin or pregabalin for neuropathic pain control</li> <li>Laser and acupuncture therapy</li> <li>Joint injections with platelet-rich plasma or hyaluronic acid/triamcinolone in refractory cases</li> <li>Cannabinoids with veterinary oversight</li> </ol>
<b>Stage 4</b> Severe	<p><b>Goals:</b> Provide adequate pain control, adapt mobility for maintaining QOL</p> <p><b>Core</b></p> <ol style="list-style-type: none"> <li>Client education regarding QOL throughout disease progression, pain management, and regular assessments</li> <li>Maintain muscle mass with frequent, short low-impact exercise</li> <li>Referral for formal rehabilitation program</li> <li>Lifestyle/household modifications to prevent slipping and injuries and to enhance comfort</li> <li>NSAID long-term as for stage 3 with consideration of comorbidities and regular reassessments/bloodwork monitoring</li> <li>Anti-NGF monoclonal antibody (not yet available in Canada but coming soon), which inhibits pain signalling pathway to treat and slow down peripheral nerve sensitization</li> </ol> <p><b>Secondary</b></p> <ol style="list-style-type: none"> <li>Gabapentin or pregabalin for neuropathic pain control</li> <li>Amantadine and/or tramadol in addition to NSAID</li> <li>Laser therapy, acupuncture, pulsed-electromagnetic field therapy</li> <li>Joint injections</li> <li>Steroid epidural for lumbosacral pain and hind-end weakness</li> <li>Cannabinoids with veterinary oversight</li> <li>Shockwave therapy</li> <li>Surgical intervention (e.g., joint replacement, arthroscopy, arthrodesis, denervation)</li> </ol>

TABLE 2: OA treatment recommendations by COAST stage.

# COACHING:

## HYPE OR HOPE FOR VETERINARY MEDICINE?

BY ELAINE KLEMMENSEN, DVM, CEC

**O**n February 25, 2022, CBC's *Marketplace* ran an episode called "Undercover Investigation: Life Coaches Caught on Camera." The title and the episode are great examples of how the media uses sensationalism to get our attention and draw us in. The episode was a one-sided investigation of the coaching profession where the goal, it seemed, was to expose coaching as an unregulated, unethical profession full of charlatans out to make a quick buck off their unsuspecting victims. Does any of this sound familiar? Perhaps you recall the September 2014 episode, "Vet Bills for Dogs and Cats: Are They Too High?" Or the June 2015 episode, "Is Your Dentist Ripping You Off? Hidden Camera Investigation." Sensationalism in the media exists because it works. We are drawn to it and to the promise of something compelling, which activates a specific dopamine pathway in our brains. That hit of dopamine keeps us coming back for more, even when we are aware of being the pawn in a larger game. It also grows an audience and boosts ratings.

The *Marketplace* episode on coaching identified the biggest challenge to building the legitimacy of the coaching profession: anyone can call themselves a coach. Founded in 1995, the International Coaching Federation (ICF) is a non-profit organization dedicated to establishing a professional code of ethics and standards in the coaching industry and providing accreditation for coaching training programs, administering a rigorous credentialing process for aspiring coaches and ensuring members commit to ongoing continuing education requirements and meet core competency standards. ICF-certified coaches hold themselves to the highest standard of professionalism and ethics and as such can be held accountable through the ICF's ethical review process. Unfortunately, regulating coaches who are not ICF-certified is challenging. There is no assurance of a coach's training, qualifications, or competency, and there is no recourse or accountability if you have a complaint. Similar to regulating unauthorized veterinary practice, often the only recourse is increasing awareness and education.

So what exactly is "coaching"? For many of us, the word recalls images of a high school basketball coach shouting from the sidelines, whistle in hand. Sports coaching is a small niche in a diverse and

growing profession that includes business, leadership, life, and health coaches. Regardless of the label, coaching is not only one of the most effective methods of developing leadership and management skills, it is also a promising intervention for improved well-being and reducing burnout symptoms in health care professionals. A 2019 study in the *Journal of American Medical Association Internal Medicine* demonstrated that the proportion of physicians with high emotional exhaustion decreased by 19.5 per cent and the prevalence of burnout symptoms by 17.1 per cent in participants who received professional coaching sessions as compared to those in the control group.

What makes coaching different from other "helping" professions like counselling, consulting, and mentoring is the equal playing field on which the coach-client relationship is built. Rather than being a diagnostician, an expert, or a giver of advice, a coach is a partner and a cheerleader committed to your personal and professional growth. Coaching is a collaborative process grounded in curiosity, where the client or team is seen as fully capable and an expert in their practice and life. Robert Hargrove, a thought leader in the field of talent development and coaching, said, "Masterful coaching is about inspiring, empowering, and enabling people to live deeply in the future, while acting boldly in the present."

Coaching has broad applications in an organizational setting. From strategic planning and goal setting to developing self-awareness of one's own perspectives and limiting beliefs, to building mindfulness and appreciation, the impact of coaching is diverse and far-reaching. Coaching can be focused on the individual during regular one-to-one sessions where the client sets the agenda based on their personal goals. It can also be offered to teams seeking better ways to work and learn together. In the current climate of uncertainty due to workforce shortages, high burnout, and constant change, coaching may be a lifeline the veterinary profession has not fully embraced.

How exactly can the benefits of coaching be leveraged in a veterinary setting? Before engaging a coach, it is important to spend some time in honest self-reflection. Do you want to improve some aspect of your life and performance? Are you willing to get curious, challenge your assumptions, and own your part in any dysfunction? Can you commit the time and energy needed to change existing patterns of behaviour? If the answer is yes, coaching can be a powerful resource for veterinary teams. Consider the following applications of coaching as well as the positive impact these interventions offer.

**"WHAT MAKES COACHING DIFFERENT FROM OTHER 'HELPING' PROFESSIONS LIKE COUNSELLING, CONSULTING, AND MENTORING IS THE EQUAL PLAYING FIELD ON WHICH THE COACH-CLIENT RELATIONSHIP IS BUILT."**



### 1. ONBOARDING NEW EMPLOYEES OR HELPING EMPLOYEES TRANSITION TO A NEW ROLE

A series of coaching sessions can be offered as an onboarding perk to all new employees. Coaching can help new and transitioning team members with assimilation, especially when typical mentoring relationships are overtaxed or nonexistent because of the overwhelm veterinary medicine is currently experiencing. A coach can also help team members identify their strengths and how best to leverage them to find fulfillment and enjoyment in their professional life.

### 2. PROVIDING WELLNESS SUPPORT

Coaching can take your commitment to wellness programs from talk to tangible action. An experienced and professional coach can support the development of mindfulness, self-care, and other well-being practices customized for individual team members. Coaching carries minimal professional stigma and can be more approachable than traditional mental health programs. While not a substitute for professional counselling and therapy, coaches can act as a facilitator of your team's well-being.

### 3. EMPOWERING INDIVIDUALS AND ELEVATING PERFORMANCE

Coaching can help team members set goals, take ownership of their professional development, and stay accountable to those goals. Coaching is an evidence-based intervention to support goal-based achievement. In a profession where many prefer a goal-oriented approach to professional development, it can be particularly effective. Coaching can also be employed following any training or continuing education program to help accelerate learning and identify the next steps to keep the momentum going.

### 4. IMPROVING TEAM COMMUNICATION

Coaching offers a safe, confidential space for team members to debrief on interpersonal communication challenges. Coaches can help team members build skills like reflective listening, empathy, and emotional intelligence, ultimately teaching teams how to deconstruct conflict and build a more caring and collaborative workplace.

### 5. CREATIVE PROBLEM SOLVING

By asking thought-provoking questions, an experienced coach can challenge current thinking and help reframe unproductive mental models to stimulate creative solutions that help teams move forward together.

If I am honest, I came to coaching with my own biases arising from overused jargon and the promise of 30-day programs and quick fixes. It was during the completion of my Values-Based Leadership Certificate that I started to see the potential for coaching to shift the narrative in veterinary medicine. A requirement for graduation from this program was doing a research project on a values-driven organization, and I found a successful technology start-up with a unique leadership model and cohesive culture that agreed to participate. During an interview, the CEO shared that every employee, from the C-suite executives to the building custodian, had access to confidential coaching services as part of their benefits package. Interested in the impact of coaching, I excitedly scheduled an interview with the organization's executive coach. When asked about his role, he succinctly said, "My job is to help every employee live more joyfully." This simple response, delivered with genuine passion, had a big impact on me. What if I could help every employee in veterinary medicine live more joyfully? How might this change the culture of our hospitals and the profession? What positive ripples might extend beyond our hospital doors to our employees' families and even into our communities?

At a time when many choose to see the negatives and the challenges in veterinary medicine, I choose hope. Hope for our clients, our teams, and our leaders to shift the narrative and develop human-centred hospitals. Coaching is a powerful tool to leverage the positive change veterinary medicine needs and lead us toward a bright future . . . together.

To save space, the references for this article are made available on the Chapter's website at [www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine](http://www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine). **WCV**

PHOTO SUPPLIED BY ELAINE KLEMMENSEN

## INTERNAL MEDICINE SERVICE

VCA Canada Vancouver Animal Emergency & Referral Centre is pleased to announce the expansion of our existing Internal Medicine department on October 1, 2022. Board-certified Internal Medicine Specialist Dr. Amanda Root will join Dr. Susan Ford and Dr. Casey Gaunt to provide specialist support for our referring veterinary community.

### INTERNAL MEDICINE DEPARTMENT SERVICES:

Advanced Diagnostic Imaging	Pancreatology
Chemotherapy	Immunology
Endocrinology	Infectious Disease
Gastroenterology	Nephrology and Urology
Hepatology	Respiratory Disease

Specialists perform a variety of state-of-the-art minimally-invasive procedures including gastrointestinal endoscopy, rhinoscopy and bronchoscopy.

To learn more about Dr. Root, our services, and the rest of our specialty team, please call or visit our hospital website.



Amanda Root DVM, DACVIM

Dr. Amanda Root was born in the American Midwest. She was an RVT and Practice Manager for 14 years before attending veterinary school at the University of Glasgow in Scotland, UK. After graduation in 2018, she followed her passion for specialty medicine and completed a rotating internship in small animal medicine and surgery in 2019 at Blue Pearl Veterinary Partners in Irvine, California. Dr. Root also studied in China to complete the Small Animal Veterinary Acupuncture course in 2018 through the Chi Institute of Traditional Chinese Veterinary Medicine.

In addition to her many fields of study, Dr. Root has specialized knowledge in clinical research. This is an area in which she has published two comprehensive

papers: *Canine Pseudopregnancy: An Evaluation Of Prevalence And Current Treatment Protocols In The Uk* and *Inaccurate Assessment of Canine Body Condition Score, Bodyweight, and Pet Food Labels: A Potential Cause of Inaccurate Feeding*.

Dr. Root's special interests include feline medicine, endocrinology, gastroenterology, nephrology, infectious disease, minimally-invasive interventional procedures, including endoscopy and ultrasonography, and integrative veterinary medicine.

Dr. Root is looking forward to exploring all Vancouver has to offer with her husband, Dr. Sam Root, a psychologist, marriage and family therapist, and their beautiful cat, Monkey.

# EDUCATING CLIENTS ABOUT EASTERN COTTONTAILS: TAKING A PROACTIVE APPROACH

BY HANNAH WEITZENFELD, DVM, AND KIRSTEN HAMMOND, RVN



**P**et owners' compassion for animals often inspires them to try to help other animals they come across. This can result in an unintended but very unfortunate situation when it comes to wild rabbits. To prevent unnecessary harm to eastern cottontail rabbits, it is important for members of the public to understand the biology of rabbits, and the difference between eastern cottontails and stray or feral domestic rabbits.

## RABBIT BIOLOGY

As with deer, rabbits will often leave their young while they forage, returning for only short periods to feed the young. Members of the public, believing these rabbits are orphaned, will often bring these animals into captive settings in an attempt to rescue them. If the nest is disturbed, rabbits will often abandon their offspring, although professional wildlife rehabilitators have been successful at reuniting rabbit families under certain circumstances.

## EASTERN COTTONTAILS

As compared to domestic rabbits, eastern cottontails are smaller and leaner (average 1.2 kg as adults) with a rougher-appearing brown coat. While eastern cottontails are not native to British Columbia, they are one of the few wild rabbit species with established populations on the coast in the province. They have been present in the Lower Mainland for more than 80 years and on southern Vancouver Island for more than 50 years. Unlike many stray or feral rabbits, eastern cottontails do poorly in captivity: once they have been removed from their natural habitat, the sudden change in diet, social structures, and ability to express normal behaviour often results in stress-related pathologies such as capture myopathy and gastrointestinal stasis. Attempts by members of the public to treat this wild species as a domestic pet raise significant welfare and disease management concerns.

## AN EMERGING CONCERN

In 2021, the AZ1 strain of rabbit hemorrhagic disease virus was identified in Alberta. This is the same strain that has been spreading across the US, fatally affecting both wild and domestic rabbits. Members of the public who bring eastern cottontails into their homes, veterinary facilities, or shelter settings increase the risk of this virus spreading within these settings.

To help reduce the strain placed on rehabilitation centres, animal shelters, and veterinarians, it is our responsibility to educate our clients to avoid unnecessary interactions with eastern cottontails. When taking phone calls from clients or members of the public, we can recommend observing the animal's behaviour from a distance over an extended period of time to determine if it is seriously injured or deceased.


The first link below is an informative article that veterinary clinics and hospitals can post to their social media accounts to inform their communities on this matter.

Anyone who is unsure whether an eastern cottontail needs help or who has found animals who are obviously injured (e.g., bleeding, broken limbs) can call the BC SPCA's provincial call centre for advice at 1.855.622.7722.

## RESOURCES

BC SPCA, "What's the Difference between Wild Cottontail Rabbits and Feral Rabbits?": [spca.bc.ca/faqs/wild-rabbit-feral-rabbit](https://spca.bc.ca/faqs/wild-rabbit-feral-rabbit)

BC SPCA, "Rabbit Hemorrhagic Disease (RHD) Found in Alberta": [spca.bc.ca/news/rhd](https://spca.bc.ca/news/rhd)

Government of Canada, "Rabbit Haemorrhagic Disease (RHD) Fact Sheet": [inspection.canada.ca/animal-health/terrestrial-animals/diseases/immediately-notifiable/rhd-or-viral-haemorrhagic-disease-of-rabbits/fact-sheet/eng/1526322490096/1526322490704](https://inspection.canada.ca/animal-health/terrestrial-animals/diseases/immediately-notifiable/rhd-or-viral-haemorrhagic-disease-of-rabbits/fact-sheet/eng/1526322490096/1526322490704) 

**"MEMBERS OF THE PUBLIC, BELIEVING THESE RABBITS ARE ORPHANED, WILL OFTEN BRING THESE ANIMALS INTO CAPTIVE SETTINGS IN AN ATTEMPT TO RESCUE THEM."**

## Island Veterinary Eye Specialist

Welcomes your ophthalmology referrals!



[IslandVeterinaryEyeSpecialist.com](https://IslandVeterinaryEyeSpecialist.com)

778-404-0680

## Filavac VHD K C+V

### Rabbit Hemorrhagic Disease Virus, classic and variant, killed virus Vaccine

For active immunization of rabbits from 10 weeks of age, to reduce mortality due to rabbit hemorrhagic disease caused by classical (RHDV1) and type 2 (RHDV2) virus strains.



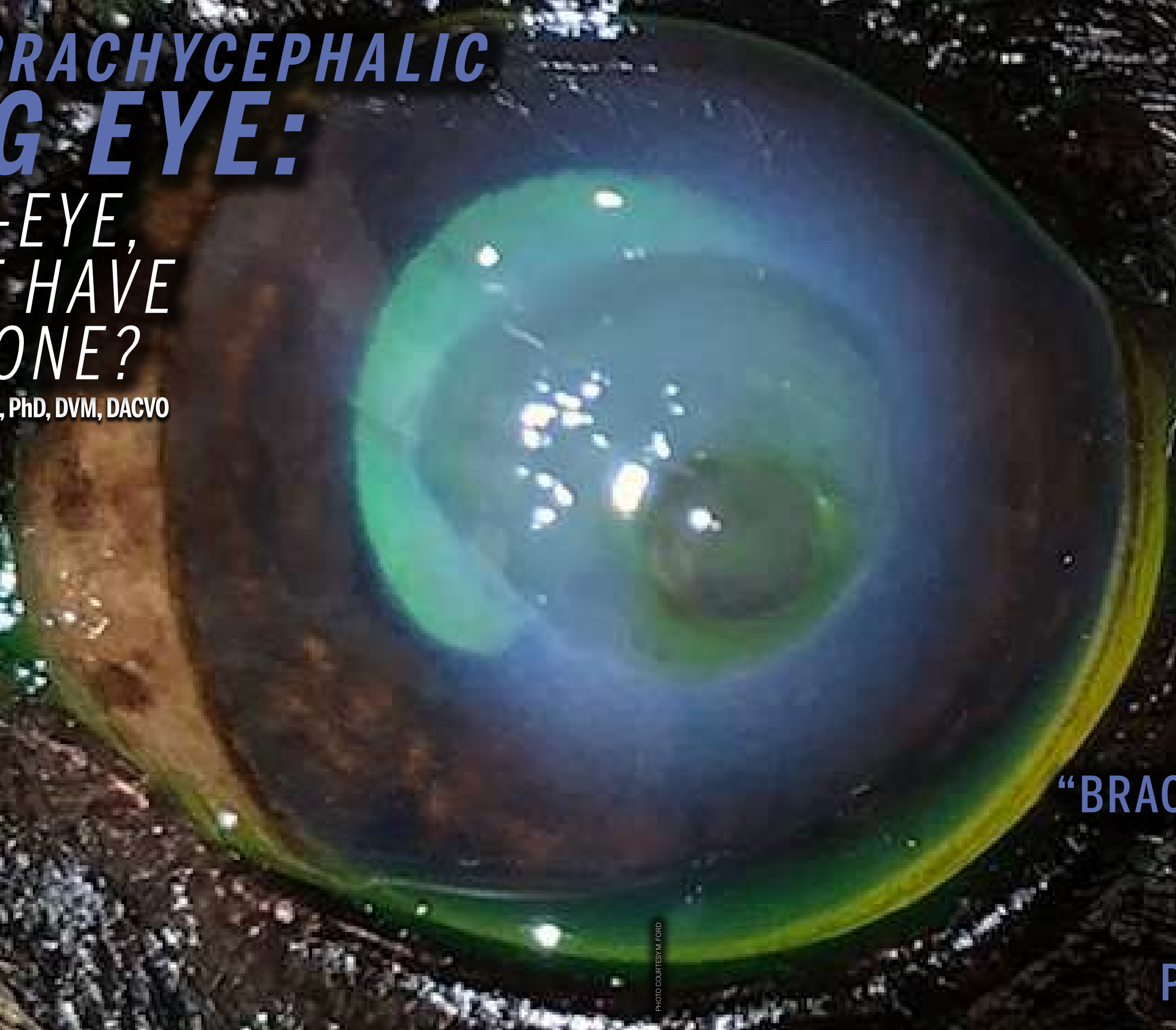
For more information on FILAVAC VHD K C+V Rabbit Hemorrhagic Disease Virus, classic and variant, killed virus Vaccine and how to acquire, please reach out to CEVA Animal Health at [service.canada@ceva.com](mailto:service.canada@ceva.com) or 1-800-510-8864.



# *THE BRACHYCEPHALIC DOG EYE:*

*OH M-EYE,  
WHAT HAVE  
WE DONE?*

BY MARNIE FORD, PhD, DVM, DACVO



**“BRACHYCEPHALIC  
OCULAR  
HEALTH IS  
PRECARIOUS.”**

PHOTO COURTESY M. FORD



**FIGURE 1:** A pug demonstrating the ocular consequences of extreme breeding. Protruding eyes, large eyelid openings, evidence of ulceration.

**FIGURE 2 (PREVIOUS SPREAD):** A very deep and infected corneal ulcer. Note the grey perilesional cornea with pupil distortion.

## “SADLY, THE ‘CUTE’ FACTOR POSES UNIQUE RISKS TO LONG-TERM OCULAR HEALTH AND VISION.”

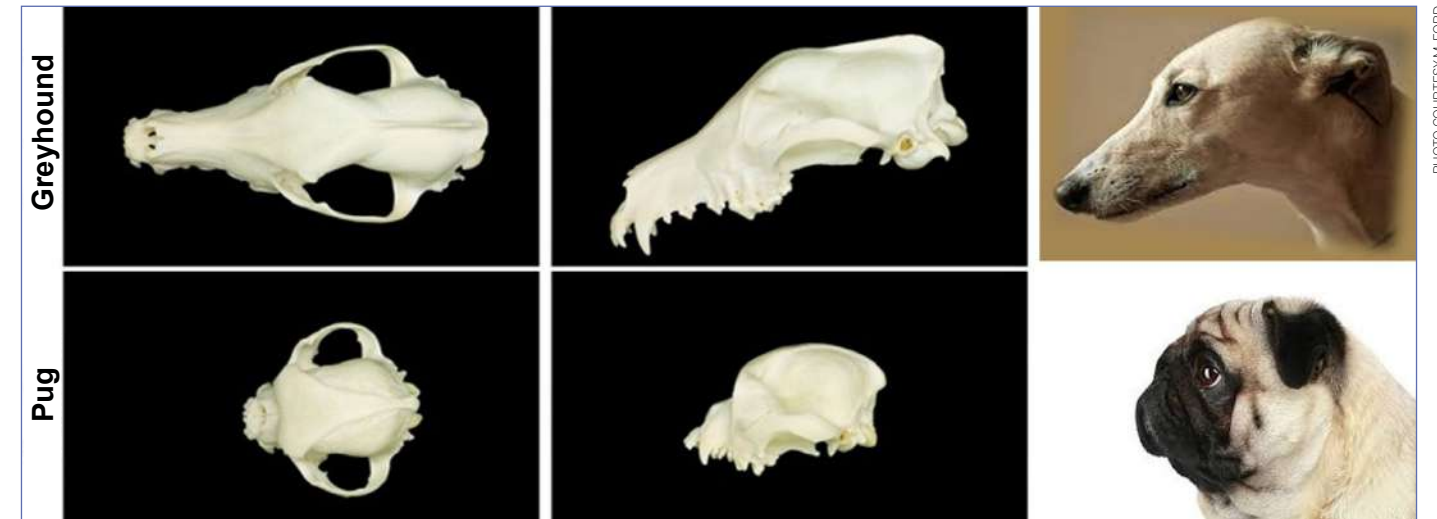
**B**rachycephalic is the term used to describe animals who have greatly shortened upper jaws and noses. This head shape also commonly includes exophthalmos (abnormal protrusion of the eyes), exaggerated eyelid openings (macropalpebral fissure), and lagophthalmia (inability to completely close the eyelids). Collectively known as brachycephalic ocular syndrome, these traits create large, “baby-like,” round eyes that are frequently the impetus that attracts people to these breeds (Figure 4).

Sadly, the “cute” factor poses unique risks to long-term ocular health and vision. Through continued selection of these exaggerated conformational traits that include shallow orbits, large eyelid openings, reduced corneal sensitivity, and low tear production, ocular problems are overrepresented. Brachycephalic breeds have been reported to be 8 to 20 times more likely to develop corneal ulcers compared to non-brachycephalic breeds, and the ulcers they suffer from are often deeper than those in non-brachycephalic breeds (Figure 2). The reasons, solutions, and mitigation options for these are outlined below.

The difference in skull shape between brachycephalic breeds (e.g., Pug) and dolichocephalic breeds (e.g., Greyhound) is striking (Figure 3). The severely shortened skull and muzzle of the brachycephalic head are inherited. The soft tissues of the head, however, are not similarly reduced in size, and herein lies the source of most ocular problems. In all breeds of dog, the orbit is made up by seven bones and

contains access routes for vessels, nerves, and extraocular and retrobulbar muscles and glands, as well as containing connective tissue and fat. Unlike the orbit of the dolichocephalic breeds, which surrounds and protects the globe, the orbit of brachycephalic head shape is much shallower—like a pie plate rather than a bowl. With the normal extraocular structures listed above and the shallowness of the space, it is easy to see how precarious the globe is. The orbital rim should be palpated as part of the ophthalmic examination, and with extreme skull shapes (e.g., Pug and Pekingese) the orbital rim will be noted to be posterior to the eyeball and unable to provide any protection to the globe. An owner can easily be taught to appreciate this anatomic shortcoming.

Very large eyelid openings contribute to both incomplete eyelid closure and globe coverage. These, coupled with a shallow orbit, increase the risk for proptosis following minor forms of trauma that may involve sudden forces applied to the head and orbit, stretching of the facial skin (e.g., during a fight with another dog), or even increased neck pressure (e.g., from pulling on a leash or venipuncture). Following the forward movement of the globe through the palpebral fissure, the eyelids quickly constrict behind the globe, thus trapping it in this forward and very painful position (Figure 5). Spontaneous return to the loosely defined “normal” position is hindered by retrobulbar hemorrhage, edema, possible tearing of the retrobulbar muscles, and the presence of the eyelid margins behind the globe. Without rapid manual replacement of the globe, traction on the optic nerve may result in permanent vision impairment, and rapid drying of the exposed globe can result in corneal malacia. This is not the case in dolichocephalic breeds, for which significant force is required to proptose the globe, and vision can rarely be retained. To test the ability for complete eyelid closure, the medial and lateral canthus can be lightly touched to stimulate the blink reflex. Similarly, ask owners to check if the dog closes their eyes fully when asleep. Incomplete blink closure not only increases the risk for proptosis as outlined above, but also increases the risk for direct trauma by external



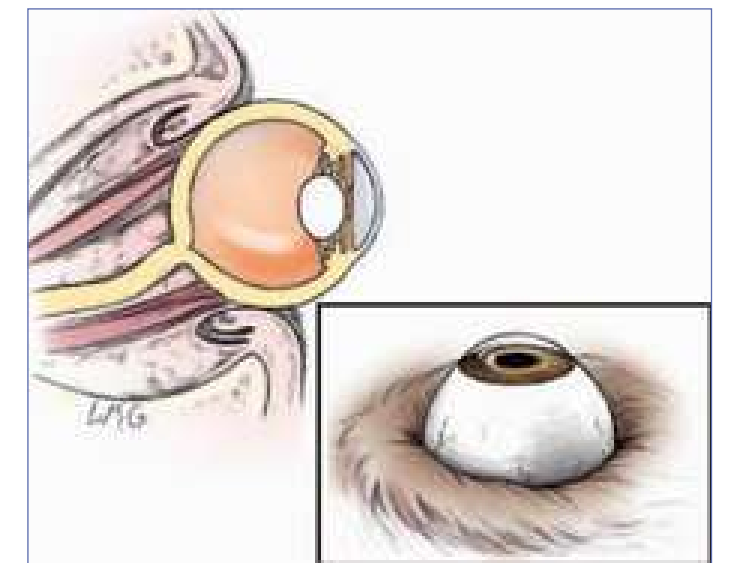
**FIGURE 3:** Skull photographs that highlight the degree of difference between the dolichocephalic skull shape (e.g., Greyhound) compared to the brachycephalic skull shape (e.g., Pug).

objects and indirect trauma by reduced spread of the tear film—a major factor in corneal drying, ulceration, and pigmentation. To help mitigate the potential consequences of incomplete eyelid closure, surgical narrowing of the medial and sometimes lateral canthus or frequent application of a corneal lubricant is strongly recommended.

Corneal pigmentation (Figure 6) is very common in brachycephalic breeds. The incidence reported in Pugs varies from 70.0 to 87.8 per cent. Not unlike skin chronically irritated by rubbing, corneal pigmentation is formed as a protective mechanism, and in brachycephalic breeds, is frequently caused by some degree of medial lower lid entropion associated with rounded eyelid openings. Sadly, this protective mechanism is not conducive to healthy vision. When noted during wellness examinations, corneal pigment can signal the presence of conformational (entropion, exposure) irritation that may be mitigated surgically or medically as outlined above. Other sources of corneal irritation associated with the eyelids include caruncular hairs, distichia, trichiasis from exaggerated nasal folds, and ectopic cilia. The pigment can be augmented by corneal vascularization and explains why corneal pigment is found to be worse after a corneal ulcer. The caruncle is the small fleshy knob of tissue just inside the medial canthus from which hair frequently grows—this is especially true of the longer-coated brachycephalic breeds. Similarly, trichiasis, hairs growing from a normal location but incorrectly contacting the cornea via entropion or excessive nasal folds, can also contribute to pigment formation on the cornea, and also to ulceration. Ectopic cilia can be present in any breed of dog, but in my experience, seem to be more prevalent in the Pug. Unless these sources of irritation are eliminated or reduced with surgery (especially ectopic cilia) or application of a thick corneal lubricant, pigment in some patients, especially Pugs, can cause blindness.



**FIGURE 4:** An especially sweet-looking young Pug. This article references the Pug breed frequently; however, the problematic traits listed apply to all brachycephalic breeds to varying degrees.

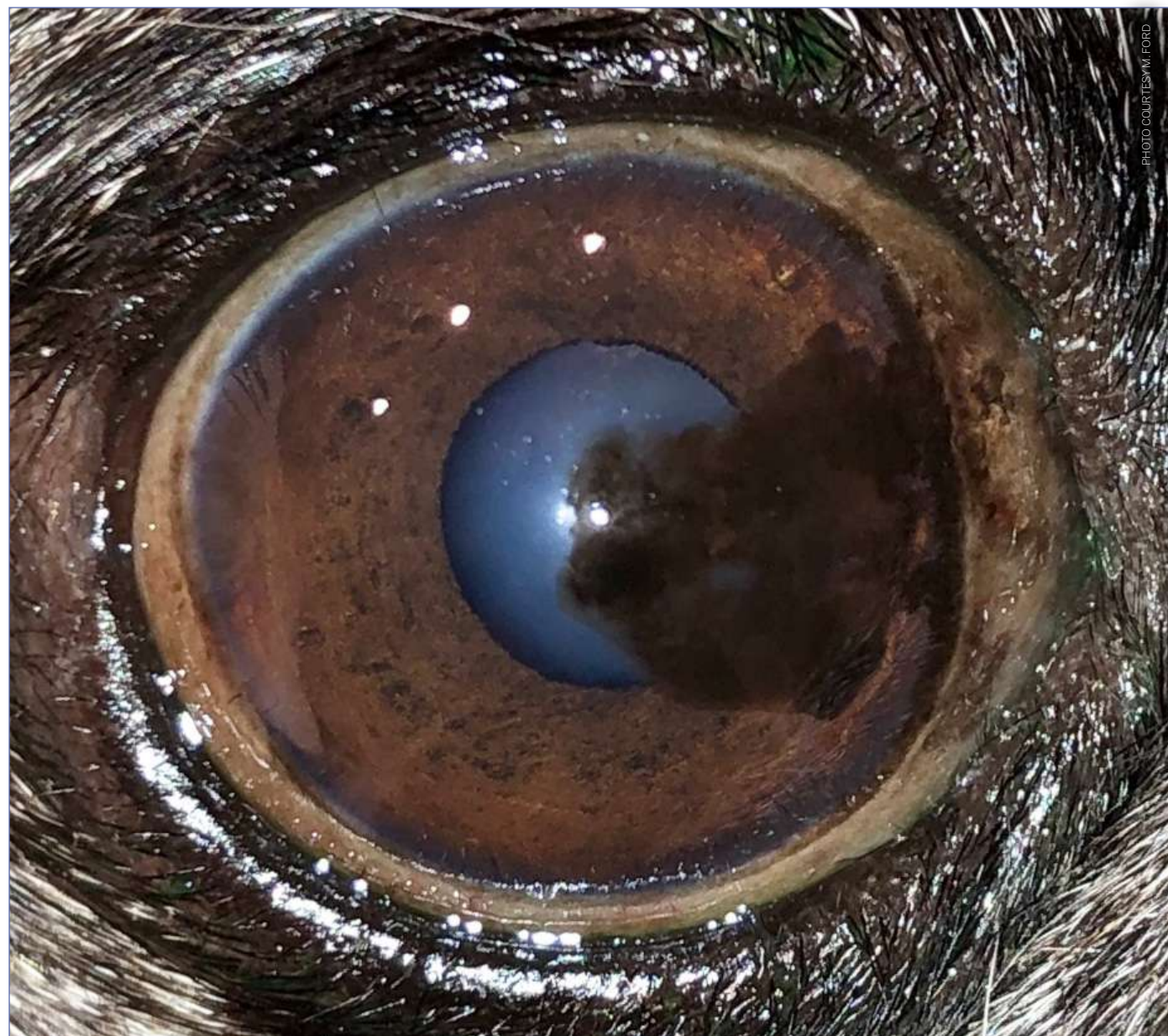


**FIGURE 5:** The location of the eyelids following proptosis.

## “IN BRACHYCEPHALIC DOGS, THIS DRAINAGE IS OFTEN DISRUPTED BY KINKING OF THE TEAR DUCT DUE TO THE EXCESSIVE SKIN FOLDING RESULTING FROM THE SHORT FACIAL BONES AND NORMAL SOFT TISSUE LENGTH, AND/OR BLOCKING OF THE PUNCTA BY THE LARGE, PROTRUDING EYE.”

Excessive tearing (epiphora) is a common finding in brachycephalic dogs. Normally tears drain through small openings (puncta) on the inside of each medial eyelid, via the tear duct into the nose. In brachycephalic dogs, this drainage is often disrupted by kinking of the tear duct due to the excessive skin folding resulting from the short facial bones and normal soft tissue length, and/or blocking of the puncta by the large, protruding eye. Excessive tearing may also be caused by caruncular hairs, which when long, may extend onto the medial canthus and beyond the palpebral fissure to wick tears away from the eye to continuously moisten the medial canthal region of the face. Overflow of tears onto the face results in tear-staining and dermatitis.

The short nose of the brachycephalic skull shape directly affects the safety of the cornea in two ways. Unlike a longer nose, which acts as a bumper between the cornea and external objects, the short nose of a brachycephalic breed puts the cornea under constant



**FIGURE 6:** Corneal pigment typically develops at the medial canthus and extends as a wedge shape toward the axial cornea.

threat of direct trauma by whatever the dog is sniffing. Likewise, actions such as rubbing the mouth or scratching the ears create a daily risk of damage to the globe that is compounded by incomplete lid closure. The length of the nose is also associated with corneal sensitivity. Researchers have demonstrated an additional vulnerability of the eyes of brachycephalic breeds, which is that they have a smaller number of trigeminal nerve fibres and branches innervating the cornea than dolichocephalic and mesocephalic skull types. Reduced corneal sensitivity, which invariably ensues, impedes the dog's response to pain (e.g., squinting, rubbing, tearing) following irritation or injury, which in turn delays owner awareness and makes owners less likely to seek treatment. Sadly, it is often not until the owner notices a deep defect or corneal greying that they seek treatment, and this may be why ulcers in brachycephalic dogs are initially diagnosed by a veterinarian at a more advanced stage (deeper, more infected, ruptured) than those of meso/dolichocephalic breeds. Owners must never ignore any corneal colour change, increased or persistent squinting, or tearing in any breed, but especially the brachycephalic breeds.

The brachycephalic dog has the trifecta of eye problems: shallow orbit (overly exposed globe), overly large eyelids (incomplete blink, entropion, trichiasis/distichiasis), and a short nose (reduced physical protection and reduced corneal sensitivity). One might think that these “design faults” were enough to contend with, but . . . sadly, no. The consequences of each are compounded by the presence of low tear production (keratoconjunctivitis sicca, dry eye), and rarely does one problem develop independent of at least one other factor. Aqueous tear production has been demonstrated to be lower in brachycephalic than in non-brachycephalic dogs, and this is thought to be linked to the reduced corneal sensitivity. The consequences of keratoconjunctivitis sicca include corneal vascularization and ulceration. Tear production should be measured via a Schirmer tear test in every brachycephalic patient at every examination. Evaporation of tears from the central cornea is a significant problem in most patients with incomplete lid closure, and so supplementing with artificial lubricants in dogs with borderline test readings (20–25 mm/min), and starting tear stimulants (e.g., cyclosporin or tacrolimus) sooner rather than later is sensible. Starting a tear stimulant when the tear reading is under 15 mm/min is not negotiable. In some cases, the Schirmer tear test value is normal, but strands of mucus are present across the corneas. This is suggestive of an imbalance of tear film composition (qualitative) and warrants use of a tear stimulant to level the components up.

Despite their many design flaws, we love our brachycephalic breeds for their delightful personalities, inquisitiveness, and size. However, the normalization of extreme traits that cause discomfort and threaten vision should be unacceptable. Caesarean section and artificial insemination have enabled selection for extreme forms of the conformation points discussed. From my perspective, two avenues of responsibility are required to redirect the extreme forms of brachycephaly to that of healthier dogs with improved quality of life: first, for breeders and judges to recognize conformational qualities that do not over-interpret breed standard descriptions and as a collective, agree that the less affected dogs are the gold standard to strive for;

second, for prospective owners to demand unaffected animals by choosing dogs who do not show any signs of brachycephalic ocular syndrome or whose parents have no signs or have not had surgical procedures or medical treatments to alleviate components of the condition. Other conformational conditions (e.g., length of nose, corneal sensitivity), however, cannot be corrected surgically or medically and must be addressed by the breeders. There appears to be a good case for neutering all animals who require corrective surgery as a means to tackle this welfare problem. Is it ethically acceptable to breed animals whose welfare is likely to be compromised by inherited defects? Opinions differ. With earnest dedication to create brachycephalic breeds made up of healthier individuals at less risk of these chronic and serious painful conditions, rapid improvement away from the extreme can be achieved.

Brachycephalic ocular health is precarious. While recognition by prospective owners can help to maximize selection of puppies without extreme traits, veterinarians can take a more proactive approach through early identification and mitigation of problems but also through education of owners. An appreciation of these breed-related variances helps the pet owner understand how both injuries to the cornea and proptosis can occur so easily. Overinterpretation of breed standards at the detriment of the breed followed by the normalization of these extreme traits is, in my opinion, the rankest form of hubris.

To save space, the references for this article are made available on the Chapter's website at [www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine](http://www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine). **WCV**



### The Scotia Professional® Plan for Veterinarians

Offering customized advice and solutions for every stage of your veterinary career. Speak to a Scotiabank Healthcare Specialist today.

#### Nicole Hui

Healthcare & Professional Specialist  
nicole.hui@scotiabank.com  
604.653.6760

#### Bart Bagrowicz

Group Lead  
Healthcare & Professionals, Western Canada  
bart.bagrowicz@scotiabank.com  
403.710.5977

**Scotiabank®**

© Registered trademarks of The Bank of Nova Scotia.



# ACCIDENTAL DRUG TOXICITY IN COMPANION ANIMALS

BY CARSTEN BANDT, DVM, DACVECC

**T**oxicity and exposure to hazardous substances remains one of the main reasons for dogs and cats to be presented to a veterinary emergency centre. A recent study reviewing data from the ASPCA's Animal Poison Control Center (APCC) for all US states over the timespan from 2005 to 2014 reported that the most common exposures were human medications, foods, plants, and veterinary medications. Of the reported cases, 86 per cent involved dogs and 14 per cent involved cats. Chocolate and lily plants were the most commonly reported exposures. Recreational and illicit drug exposure in this study involved only 1.83 per cent of the canine cases and 0.44 per cent of the feline records. This study grouped analgesics and painkillers into a different category, which accounted for 11.45 per cent of phone calls.

Another study looked at the same APCC data from 2006 to 2014 and reported that 2.72 per cent of the calls concerning dogs were related to an opioid exposure. The authors compared the risk of opioid exposure for dogs to the county-level human prescription rate and found a positive correlation. Researchers who evaluated trends in cannabis toxicosis in dogs living in Colorado after legalization of medical cannabis and found a significant correlation between the number of medical marijuana licenses and number of canine cannabis toxicosis cases. Over the past six years, the APCC reported a 448 per cent increase in reports of cannabis poisoning. The APCC reported a 765 per cent further increase of calls regarding cannabis toxicities compared to 2018.

Over the last two years at Canada West Veterinary Specialists in Vancouver, cannabis toxicosis and illicit drugs have been the main presenting reason of toxicities. Chocolate ingestion, grape toxicities, and NSAID overdoses in dogs and lily plant exposure in cats closely follow these. The APCC database reports cannabis, amphetamines, cocaine, heroin, and hallucinogenic mushrooms are the most common recreational and illicit drugs reported in companion animals.

**“IDEALLY, THE RESULTS OF THE DRUG TEST SHOULD BE COMPARED TO THE CLINICAL SYMPTOMS OF THE PATIENT SINCE FALSE POSITIVE AND FALSE NEGATIVE TEST RESULTS ARE COMMON.”**



PHOTOS COURTESY CARSTEN BANDT

FIGURE 1: A dog with cannabis toxicity.

The diagnosis of drug toxicosis can be difficult because of the lack of veterinary validated test kits. Most veterinary practices now have over-the-counter urine drug test kits to test for a variety of recreational and illicit drugs. Ideally, the results of the drug test should be compared to the clinical symptoms of the patient since false positive and false negative test results are common. Gas chromatography/mass spectrometry remains the gold standard for identifying recreational and illicit drugs but is costly and not readily available.

Over-the-counter urine drug tests are qualitative tests screening for a specific drug or metabolite. They detect substances by enzymatic immunoassays. However, many of them lack specificity and/or sensitivity, and they are generally limited to substances that reach detectable concentrations in the urine. Urine over-the-counter tests can screen for benzodiazepines, barbiturates, opiates, amphetamines, methamphetamines, THC, ecstasy, cocaine, and phencyclidines (PCP).

Psilocybin (magic mushrooms), imidazole receptor agonists (clonidine), ketamine, phenethylamine derivatives (bath salts), and the non-benzodiazepines (zolpidem) are not detected by over-the-counter-urine tests.

False positive test results have been reported frequently due to interaction with structurally similar drugs. False negative test results are caused due to different metabolic pathways and subsequent accumulation of different metabolites.

### CANNABIS TOXICOSIS

Cannabis contains two major cannabinoids: delta-9-tetrahydrocannabinol (THC) and its isomer, cannabidiol (CBD). Cannabis toxicosis has a wide range of onset times, from minutes to hours post-consumption. THC is highly lipophilic and therefore has a large volume of

distribution. Dogs mainly metabolize THC to 8-hydroxy-delta-9-THC and 11-hydroxy-THC, with 11-hydroxy-THC being an active metabolite.

Typical clinical signs in dogs involve urinary incontinence, bradycardia, mydriasis, and ataxia. Dogs have a higher concentration of CB1 receptors in their cerebellum compared to humans, which explains the pronounced ataxia seen in some cases. In higher doses, hyperexcitability, stupor, or coma have been reported. Severely intoxicated patients might develop hypoventilation or apnea and require mechanical ventilation.

The diagnosis of cannabis toxicity should be based on the clinical symptoms in combination with a history of possible or known exposure. Unfortunately, many pet owners will withhold accurate information. Urine drug tests for cannabis have frequently been shown to have false negative results. Most urine tests will test for 11-nor-9-carboxy-delta-9-tetrahydrocannabinol, not detecting the major metabolite for dogs 8-hydroxy-delta-9-THC. Early testing, small doses, or toxicosis with synthetic cannabinoids (sometimes marketed as “spice” and “K2”) can also cause false negative test results. False positive urine test results have been reported in cases with exposure to ibuprofen, naproxen, and proton pump inhibitors. Despite the possibility of false negative test results, many dogs with classical symptoms of cannabis toxicity in Vancouver will test positive on the urine drug screen.

Treatment options depend on the severity of the toxicosis. Mild cases are usually treated with intravenous fluid therapy, antiemetics, and activated



FIGURE 2: A dog with cannabis toxicity.



FIGURE 3: Over-the-counter drug tests can be used to detect substances by enzymatic immunoassays. The lack of a line in the test column indicates a positive result—the opposite of most rapid tests. These tests show a positive result for THC (left) and cocaine (right).

charcoal. Severe cases might need sedation to treat central hyperexcitability. Successful treatment with intravenous lipid emulsion has been reported in a dog with synthetic cannabinoid toxicosis. A severe case of THC toxicosis was treated successfully with charcoal hemoperfusion after medical management failed to restrain the patient. The treatment caused resolution of clinical signs one hour after treatment was started.

The majority of cannabis toxicities can be treated on an outpatient basis. Some cases might need in-hospital treatment, and severe cases should be referred for intensive care management.

### AMPHETAMINES AND METHAMPHETAMINES

Amphetamines are commonly used to treat attention deficit hyperactivity disorder (ADHD), narcolepsia, and obesity. They stimulate the central nervous system by increasing the amounts of dopamine, norepinephrine, and serotonin in the synaptic cleft. They are rapidly absorbed in the gastrointestinal tract, and peak plasma concentration is usually reached within one to two hours. The half-life depends on the urinary pH, as an acid urine prevents reabsorption of the metabolites. Both of amphetamines and methamphetamines are highly lipophilic.

The clinical symptoms include hyperthermia, agitation, arrhythmias, seizures, and possible death. Treatment is mainly supportive depending on the clinical symptoms. Control of hyperthermia and seizure control are important parts of the treatment. If clinical symptoms allow, decontamination should be attempted. Treatment with activated charcoal is helpful, as long as the clinical presentation allows safe administration. Hospitalization is usually needed to treat hyperexcitability (with acepromazine or chlorpromazine) or to provide thermoregulation or intravenous fluid therapy. Acidifying the urine with ammonium chloride can decrease the half-life significantly.

Blood pressure and electrocardiogram monitoring should be initiated. Tremors can be treated with muscle relaxants (methocarbamol). Seizures should be treated with anticonvulsants (phenobarbital). The use of a serotonin antagonist (cyproheptadine) by mouth or rectally is highly recommended. Intravenous lipid emulsion has been successfully used to manage a severe case of amphetamine toxicosis.

Available urine drug tests designed for human use usually detect d-amphetamine or d-methamphetamine. They usually lack a sensitivity to 3,4-methylenedioxymethamphetamine (MDA or “Sally”) and 3,4-methylenedioxymethamphetamine (MDMA or “Molly”), and toxicities with these substances might produce false negative test results. False positive urine drug tests can be caused by a variety of similar medications, like trazodone, phenylpropanolamine (PPA), ranitidine, chlorpromazine, selegiline, amantadine, pseudoephedrine, and phenylephrine.

#### COCAINE TOXICOSIS

Cocaine is the third-most-common non-medically used substance in Canada, ranking after alcohol and cannabis. It inhibits catecholamine reuptake at sympathetic nerve terminals, causing stimulation of the sympathetic nervous system.

At higher doses cocaine acts more like a local anaesthetic (class I anti-arrhythmic agent) by blocking myocardial sodium-potassium channels, causing cardiovascular depression and vasodilation. It has a poor systemic availability when given orally, its half-life is relatively short, and it has a large volume of distribution and is highly lipophilic.

Urine drug testing targets benzoylecgonine with good sensitivity and specificity in human drug testing, but this testing method has not been validated for use in animals. False positive results are rarely reported with cocaine toxicosis, but could include diazepam, coco leaf tea, salicylates, and fluconazole.

Clinical symptoms include hyperexcitability, ataxia, muscle tremors, hypertension, and hyperthermia. Severe cases may experience seizures, tachycardia, mydriasis, and vomiting. Treatment is usually supportive depending on the clinical symptoms and involves management of the arrhythmias (esmolol), hyperexcitability (acepromazine and benzodiazepines), and hypertension (propranolol). A recent case report describes the use of intravenous lipid emulsion therapy as a successful treatment in a severe case of cocaine toxicity. Many cases of severe cocaine toxicity require intensive care management with monitoring of blood pressure, ECG, and seizure control and are best transferred to an intensive care unit.

#### OPIATE TOXICOSIS

Opiates are naturally occurring alkaloids derived from the sap of the opium poppy. Structurally, they are subdivided into five different classes. They are generally well absorbed through the gastrointestinal tract with variable bioavailability due to first pass metabolism by the liver. They undergo hepatic metabolism and most metabolites are excreted through the kidneys.

“FUTURE RESEARCH WILL HOPEFULLY PROVIDE US WITH BETTER DIAGNOSTIC BEDSIDE TESTS.”

Clinical symptoms depend on the dose of the ingested opioid. Severe cases may present with CNS depression, hypotension, and hypoventilation. Treatment of choice is the opiate antagonist naloxone. Naloxone treatment might need to be repeated if clinical symptoms reoccur. Naloxone has a shorter half-life than most opioids. In some cases, respiratory support in the form of ventilation is necessary. Some animals develop severe dysphoric states and need to be treated with benzodiazepines.

Over-the-counter urine drug tests target natural alkaloids, including morphine and codeine. Diacetylmorphine (heroin) is usually detected. Synthetic opioids like fentanyl, methadone, oxycodone, buprenorphine, hydromorphone, meperidine, and tramadol are usually undetected unless the urine test has an specific immunoassay for these drugs.

False positive test have been reported with naloxone, diphenhydramine, fluoroquinolone antibiotics (levofloxacin, ciprofloxacin), rifampicin, tramadol, verapamil (for methadone), and poppy seeds.

#### LYSERGIC ACID DIETHYLAMIDE (LSD) TOXICOSIS

LSD is a recreational hallucinogenic drug. Its mechanism of actions is not completely understood, but it is structurally similar to serotonin (which acts on the 5-HT receptor). It most likely acts as a serotonin agonist on 5-HT<sub>2A</sub> receptors in the cortex. It also causes

release of glutamate. It is rapidly absorbed in the gastrointestinal tract and highly protein bound. In people, it is metabolized in the liver, and the metabolites are mainly eliminated through the feces.

Clinical symptoms are severe hyperexcitability, tachycardia, mydriasis, seizures, and hyperthermia. There is no antidote available. Treatment strategies involve restriction of sensory stimulation. Animals should ideally be kept in a dark and quiet environment. Diazepam can be used for treatment of anxiety and seizures. Use of selective serotonin reuptake inhibitors (like fluoxetine) should be avoided, since they can worsen the clinical symptoms. Most animals will recover within 12 hours with supportive therapy.

Urine drug tests for LSD have shown low specificity due to multiple drug interactions. Diltiazem, fentanyl, labetalol, metoclopramide, trazodone, and verapamil have all shown to cause false positive test results for LSD. Only a small amount of the metabolite is secreted through the urine, and false negative test results are also possible.

#### PSILOCYBIN (MAGIC MUSHROOM) TOXICOSIS

Mushrooms of the *Psilocybe* genus contain variable amounts of psilocybin and psilocin. They are similar in structure and mechanism of action to LSD (acting on serotonin receptors in the cortex). Clinical symptoms reported in dogs include hyperexcitability, mydriasis, ataxia, tachycardia, disorientation, hyperthermia, and anxiety. Seizure and tremors are more rare but have been reported. No rapid bedside tests are available for the diagnosis of psilocybin toxicity, and clinical diagnosis relies mainly on the honesty of the pet owner.

Treatment depends on the clinical symptoms. Some animals might need treatment with diazepam for anxiety or seizure. The majority of animals will recover within 12 hours with supportive therapy.

Recreational and illicit drug toxicosis is certainly a rapidly growing problem, especially in an urban environment. The lack of validation for over-the-counter urine tests for companion animals is currently still a major problem for the rapid diagnosis and appropriate treatment of toxicities. Future research will hopefully provide us with better diagnostic bedside tests.

To save space, the references for this article are made available on the Chapter's website at [www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine](http://www.canadianveterinarians.net/sbcv/west-coast-veterinarian-magazine). **WCV**



FIGURE 4: A puppy with psilocybin (magic mushroom) ingestion and toxicosis.

AlphaVet Science™  
Just Natural Science™

Providing Complementary  
Nutraceuticals for Over 30 Years

**AVP**  
Associated Veterinary  
Purchasing Co. Ltd.

Products are  
now available  
through AVP.



**Dr. Igor Goloida, MD**  
Director of Professional Brands  
igoloida@alphasciencelabs.com  
Head Office: 416-297-6900

**Tom Lawless** - British Columbia  
tlawless@alphasciencelabs.com  
Tel: 250-826-7084

AlphaVetScience.com • 1-888-299-0318 • 795 Pharmacy Ave., Toronto, ON • CANADA • M1L 3K2

Any Questions?  
**ASK FLASH!**



**WE KNOW  
THE VALUE  
OF YOUR  
PRACTICE**

Offering appraisal, consulting  
and brokerage services



**Elliott Broad**  
(604) 690-4822  
elliott@roicorp.com

**ROI**  
CORPORATION  
BROKERAGE / COURTAGE



roicorp.com  
(844) ROI-2020



**P3 VETERINARY PARTNERS**

Pets. People. Practice.



Canadian  
founded,  
owned, and  
operated.

Join the  
**P3 family**



**NURTURE YOUR CAREER, YOUR PASSION  
FOR PETS, AND YOUR WELL-BEING**

Work with people who share your professionalism and who value your expertise. Our Canada-wide, community-based practices have the resources and capabilities of a large company combined with the personality and flexibility of an independently owned hospital.

**8 reasons why you'll love being part of the P3 family**



- Competitive, flexible compensation
- Comprehensive benefits
- Schedules that suit you
- Mentorship program
- Customized continuing education
- Canadian founded, owned, and operated
- A deep commitment to community
- Associate ownership opportunities

**Book a time to chat (the coffee is on us!)**

[www.p3vetpartners.ca](http://www.p3vetpartners.ca)

435 Reynolds St., Suite 306  
Oakville, ON L6J 3M5

1 888-473-2046

Copyright © 2022. All rights reserved.

Follow us



West Coast Veterinarian is pleased to introduce a new topic for “A Year in the Life.” Each four-part column is written by one veterinary specialist about one topic that has four distinct life phases. Through the course of the year, each instalment highlights how this topic affects animals at a certain life stage and what veterinarians should know about how to treat it. This year’s focus is feline health.

# SETTING KITTENS UP FOR A LIFETIME OF HEALTH

BY MARGIE SCHERK, DVM, DABVP (FELINE)

**D**uring the pandemic, the Great Adoption occurred. More cats were adopted than dogs. And, perhaps because so many people worked from home and were more aware of subtle changes, there was an increase in the number of cats seen in veterinary clinics. However, until 2020, only 58 per cent of cats compared to 86 per cent of dogs saw a veterinarian at least once per year despite the fact that there are more cats (8.1 million) than dogs (7.7 million) in Canadian homes.<sup>1</sup>

Why are people less likely to bring their cats in for preventive care (and possibly wait longer in illness) than dogs? Many people believe that cats are low maintenance and, especially if confined indoors, are at lower risk for problems that are preventable. Certainly, it can be more stressful to bring a cat to the clinic. Clinic teams are often more comfortable seeing dogs, believing cats to be unpredictable and less easy to work with. What role can we in our veterinary teams play in promoting feline wellness and delivering a consistent message to clients?

Over the next year, WCV will publish a series on caring for cats throughout their life from cradle to grave, loosely organized by life stage.

One of the strengths of our profession has been its role in promoting preventive healthcare. We vaccinate against preventable infectious diseases, deworm routinely, test for retroviruses and offer life-stage nutrition. The potential exists to offer much more for the well-being of our patients and their people. Preventive care can avert illness through addressing behaviour, environmental enrichment, toileting and elimination, microchip and tag identification, nutrition, oral health, and mobility, as well as medical and surgical wellness strategies.

While disease incidence often increases with advancing age, some conditions and infectious diseases are more likely to occur in younger patients (Table 1). Taking these different needs and risks into consideration throughout a cat’s life, preventive health care needs change and can be used to guide conversations and recommendations.

The 2021 AAHA/AAFP Feline Life Stage Guidelines ([catvets.com/guidelines/practice-guidelines/life-stage-guidelines](http://catvets.com/guidelines/practice-guidelines/life-stage-guidelines)) (see sidebar) classify a cat’s life chronologically based on health needs and behaviour. These guidelines use five stages to describe a cat’s life with four age-related stages as well as an end-of-life stage that can, of course, occur at any age.

Kitten: birth to 1 year	Young adult: 1–6 years	Mature adult: 7–10 years	Senior: 11 years and older
<ul style="list-style-type: none"> <li>Genetic and congenital (e.g., cleft palate, heart disease, hernia)</li> <li>Infectious diseases:                             <ul style="list-style-type: none"> <li>Viral (panleukopenia, upper respiratory, retroviral, FIP, enteric)</li> </ul> </li> <li>Parasites (external and internal)</li> <li>Dermatophytosis and systemic fungal diseases</li> <li>Injury from fighting or other trauma</li> <li>Behavioural problems</li> <li>Dental disease</li> </ul>	<ul style="list-style-type: none"> <li>Injury from fighting or other trauma</li> <li>Urinary tract problems:                             <ul style="list-style-type: none"> <li>Idiopathic cystitis</li> <li>Struvite crystals</li> <li>Calcium oxalate uroliths</li> </ul> </li> <li>Bronchial disease</li> <li>Cardiomyopathy</li> <li>Chronic enteropathy (including IBD)</li> <li>Atopic dermatitis</li> <li>Behavioural problems</li> <li>Dental disease</li> <li>Obesity</li> </ul>	<ul style="list-style-type: none"> <li>Obesity</li> <li>Diabetes</li> <li>Hyperthyroidism</li> <li>Heart disease</li> <li>Hypertension</li> <li>Urinary tract problems:                             <ul style="list-style-type: none"> <li>Calcium oxalate uroliths</li> </ul> </li> <li>Early kidney disease</li> <li>Dental disease</li> <li>Asthma</li> <li>Liver disease</li> <li>Chronic enteropathies (including IBD, lymphoma)</li> <li>Pancreatitis</li> <li>Early to moderate arthritis</li> </ul>	<ul style="list-style-type: none"> <li>Underweight and muscle wasting</li> <li>Dental disease                             <ul style="list-style-type: none"> <li>Periodontal disease</li> <li>Resorption</li> </ul> </li> <li>Chronic kidney diseases                             <ul style="list-style-type: none"> <li>Urinary tract problems                                     <ul style="list-style-type: none"> <li>Calcium oxalate uroliths</li> <li>Bladder infection</li> </ul> </li> </ul> </li> <li>Hyperthyroidism</li> <li>Heart disease</li> <li>Hypertension</li> <li>Diabetes</li> <li>Neoplasia</li> <li>Moderate to severe arthritis</li> <li>Dehydration and constipation</li> <li>Cognitive dysfunction</li> </ul>

TABLE 1: Conditions cats are predisposed to by age. (Note that they are not exclusive to these ages).

Kittenhood is the ideal time to set the cat up for success. During the first year, the client brings the kitten in for repeated visits for vaccination, surgical altering, and to pick up anthelmintics and external parasiticides. By implementing a first year of life program, we can preschedule short appointments to educate clients about their kitten’s needs and answer questions, thereby establishing a solid and mutually beneficial relationship.

Teaching the cat to feel comfortable in their carrier is extremely important. When the struggle and guilt of bringing a cat in to the clinic is removed, it is a lot easier on clients to follow preventive care recommendations. While there are good resources ([catfriendly.com/be-a-cat-friendly-caregiver/getting-cat-veterinarian](http://catfriendly.com/be-a-cat-friendly-caregiver/getting-cat-veterinarian)) to educate the client on this, the conversation begins on the phone or in the clinic.

#### FIRST YEAR OF LIFE PROGRAM

Your clinic can offer a first year of life program that includes everything the veterinarian and clinic team consider to be important. A sample set of components is as follows:

- Comprehensive physical examination discussing nutrition, environment, and behaviour at every exam
- FVRCP vaccine given every three to four weeks until 20 weeks of age and boosted one year after last dose
- FeLV vaccine two doses given three to four weeks apart and boosted one year after last dose
- Rabies vaccine: two doses given three to four weeks apart and boosted one year after last dose
- FeLV and FIV test; if positive, repeat (at additional cost)
- Deworm with a broad-spectrum anthelmintic every two weeks from three to nine weeks of age and then monthly until six months of age
- External parasite control at appropriate intervals based on product
- Surgical sterilization before 16 weeks of age or no later than six months of age
- Dedicated nutrition consultation at nine months of age
- Comprehensive physical examination discussing nutrition and behaviour one year after last kitten vaccine

“YOUR CLINIC CAN OFFER A FIRST YEAR OF LIFE PROGRAM THAT INCLUDES EVERYTHING THE VETERINARIAN AND CLINIC TEAM CONSIDER TO BE IMPORTANT.”

PHOTOS COURTESY MARGIE SCHERK UNLESS OTHERWISE NOTED



FIGURE 1: A large, clean litter box in a well-ventilated location.



FIGURE 2: A simple homemade puzzle-feeding box.



FIGURE 3: A wet-food puzzle, dry-food indoor hunting device, and a shallow bowl with the quantity of dry food equivalent to the calories provided by a mouse.

A possible approach is to set the cost of the program as the sum of the individual components less 10 per cent to encourage compliance. This reassures the client (and the clinician) that the kitten will receive everything they need while the client receives a slightly reduced cost. The cost can be paid in full at the first appointment or half then and the balance at the second appointment. Booking each appointment before the client leaves the clinic helps reinforce the idea of the need for ongoing care, not just for this program, but at any time in the cat's life.

At one of the early appointments, clients can be counselled to actively observe their kitten so that they recognize what behaviours are normal for that individual: they might be different from previous cats they have known. When does the kitten like to eat? Do they eat the entire meal at once or nibble throughout the day? How do they drink? Do they tap the surface of the water? How do they use the litter box? Do they dig a depression and bury their elimination or leave it uncovered? Do they avoid digging in the litter or leave their feces uncovered? Do they balance on the edge of the box?

It is really important to discuss at one of the vaccine booster appointments what cats need in their environments to be able to express their cat-specific behaviours. Two excellent resources are AAFP/International Society of Feline Medicine (ISFM) Environmental Needs Guidelines ([catvets.com/guidelines/practice-guidelines/environmental-needs-guidelines](http://catvets.com/guidelines/practice-guidelines/environmental-needs-guidelines)) and an article by Dr. Tony Buffington. The latter includes a useful resource checklist: [www.cliniciansbrief.com/article/what-cat-owners-can-learn-about-captivity](http://www.cliniciansbrief.com/article/what-cat-owners-can-learn-about-captivity).

This is also a perfect time to discuss toileting. The box used as a litter box (see Figure 1) should be about one and half times the length of an adult cat, be situated in a well-ventilated area, and be readily accessible. It should be cleaned or scooped at least once a day and completely emptied and washed out when it becomes soiled. Most cats prefer a sand-like substrate at a depth of 3–4 cm. Clear storage containers are ideal and can be modified for the location where they are placed.

It is a good time to familiarize the client and kitten with feeding devices or puzzles to simulate indoor hunting behaviours ([foodpuzzlesforcats.com](http://foodpuzzlesforcats.com)). Not only will the kitten be more active, but they will also get used to eating small quantities of food frequently, thereby mimicking their native behaviour (see Figures 2 and 3). Around the ninth month, schedule an appointment to specifically discuss nutrition helps to review what and how the cat is eating, where their bowls and feeding devices are, and what the cat prefers. At this time, the client can be taught how to body condition score their cat, with the goal of preventing obesity (see Figure 4).

While the kitten is still impressionable, encourage the client to handle their ears, lift their tail, and play with their paws. Rewarding the kitten when trimming their claws will make this task easy throughout life. If the cat is used to having their tail and ears handled, this will be less stressful in the clinic.

There is a lot of important information to offer over the first year. Thankfully, with the number of repeat visits during this period, we have the opportunity to communicate it to the kitten's caregivers and set them off on a long, healthy life together. <sup>WCV</sup>



FIGURE 4: Body condition score chart.

## AAHA/AAFP LIFE-STAGE GUIDELINES

The American Animal Hospital Association (AAHA) and American Association of Feline Practitioners (AAFP) recommend discussing all of the following during the kitten's first year:

- Preventive care requires annual check-ups and ongoing care throughout each year
- While vaccines may not need to be boosted annually, year-round broad-spectrum antiparasitics with efficacy against heartworms, intestinal parasites, and fleas are needed regardless of indoor/outdoor status
- Importance of sterilization and identification (microchip, tattoo, tag on breakaway collar)
- What normal cat behaviours are, including scratching
- The subtle signs of sickness: changes in behaviour, pain, anxiety, and illness

1. Inappropriate elimination behaviour	6. Unexplained weight loss or gain
2. Changes in interaction	7. Changes in grooming
3. Changes in activity	8. Signs of stress
4. Changes in sleeping habits	9. Changes in vocalization
5. Changes in food and water consumption	10. Bad breath

- Providing an environment that supports normal feline behaviours, including outdoor exploration (leash walking, enclosed "catio")
- Acclimation to being handled, having nails trimmed, having mouths handled and teeth wiped, and being combed
- Acclimation to the carrier and the car
- What is needed for a suitable litter box setup (unscented clumping litter, depth, location, cleaning frequency, number of boxes) and what normal elimination behaviour looks like
- How to assess fecal appearance and urine clumps
- How to offer food and water (number and location of resources)
- Specifically what foods, treats, and supplements are being offered, including quantity, frequency, and feeding method
- Recommendations to feed a wide variety of feline diets, feed to optimal body condition score, and use puzzle feeding
- Introducing kittens to a variety of people, other animals, and experiences gently and with positive rewards
- Encouraging play that does not involve a person's hands or feet
- How to prevent zoonotic risks
- Pet insurance
- The need to include pets in disaster preparedness plans

<sup>1</sup>Canadian Animal Health Institute Pet Population Survey of 2020: [cahi-icsa.ca/news/2020-canadian-pet-population-figures-released](http://cahi-icsa.ca/news/2020-canadian-pet-population-figures-released)

# Thinking of buying or selling a veterinary practice?

Partner with the industry leader to optimize your transaction



**Simmons**  
Veterinary Practice Sales & Valuations

Simmons has transacted almost **\$2 Billion** in veterinary practice sales including over **\$600 Million** in corporate sales in North America.

## Testimonials

*“Dr. Elizabeth Bellavance helped us sell our practice in 2021. It was a big decision, and a long process with many facets. Thankfully, due to Elizabeth’s experience, calm demeanour and good communication skills, we were able to achieve our goals. We knew she had our best interest in mind as she took the time to discuss the pros and cons of each offer. With Elizabeth’s guidance, the process was less stressful, we received a higher selling price and we were confident that we got the best deal possible for our staff, clients and ourselves.”*

Dr. M

*“I would highly recommend the services of Dr. Elizabeth Bellavance for those wishing to sell their veterinary practice. She managed to negotiate a deal that went well beyond our expectations. The financial windfall certainly justified the cost of her services. Her expertise and negotiating skills were indispensable for such a deal to occur...one far more favourable than what we could have achieved on our own.”*

Dr. B

*“Having gone through a process of purchasing and selling a hospital with a professional (who is also a veterinarian!), we can only highly recommend this to anybody who is thinking about either. It will be money well spent. Negotiations between the sellers initially, and the purchasers subsequently, of the hospital, in the end were left to Elizabeth. Not only was this less stressful for us and a great time saver, it also vastly improved the outcome of the negotiations. Elizabeth was extremely diligent and detail oriented and worked very hard on our behalf.”*

Dr. J

Contact us today:

800.333.1984 | [canada@simmonsinc.com](mailto:canada@simmonsinc.com) | [simmonsinc.com](http://simmonsinc.com)

Practice Valuations · Practice Sales · Buyer Agency · Sale Facilitation

## SBCV TEAM

### A SYMPHONY OF TALENT AT YOUR SERVICE

**BY ARLENE KEIS, BEd, MEd** A well-functioning organization is much like a symphony orchestra, where every individual or team has clearly defined roles and responsibilities. They know when to play, when to sit back, when to be quick, and when to slow down. When everyone is in tune and playing their part, harmony is created and beautiful music is produced.



Maestro Corey has created an ensemble that works hard to provide exceptional service to the members of SBCV. Having been at the conductor’s podium for almost 10 years, Corey knows the score. She is an engaged and engaging leader, cares about each member of her team, and encourages all to have a laugh every single day. While she doesn’t play any musical instruments, she does have some other secret talents such as art collecting, cooking, fiction writing, and helping people solve problems. Corey has even dabbled in acting—she played a cat-loving senior in a video produced by Maple Ridge’s emergency preparedness organization. Corey is passionate about animals and has three dogs and one cat. Her favourite place is being at home with her husband, surrounded by these furry friends.

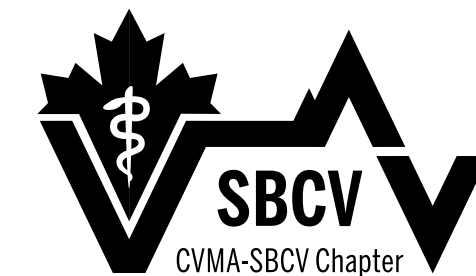
A critical success factor for an orchestra is the quality of the beat, which is provided by the drums. If the musicians can’t see the conductor, they just need to listen for the percussion to stay in sync.



Administration Coordinator Lily is the drummer of the organization—she does a little bit of everything, runs the day-to-day operations, is Corey’s “right-hand woman,” and keeps the beat going. Often working behind the scenes, Lily describes herself as being like the vanilla flavouring in a cake—you don’t see it, but when it’s not

there, something is missing—similar to the percussion missing in an orchestra. Lily did join a band and play the drums, but currently the only thing she has time for when not working is her role as district leader for Toastmasters. Lily is a good listener, is empathic, and loves her job because she is indirectly helping both people and animals. She also loves reading, hiking, and relaxing with her ginger cat, Preston.

The string, woodwind, and brass sections carry the melodies and harmonies and support the rhythm of the music. These sections often recruit new musicians to learn and grow in their performances. Principal contributors in this function this summer were Canada Summer Jobs students Jwan and Carly.



WEST COAST  
**VETERINARIAN**



Jwan, a Canada Summer Jobs student, is studying sociology at UBC and has plans to go on to graduate school and possibly law school. In her second summer with the SBCV, Jwan primarily focused on member services and helped with communications, conferences, magazine content, the website, and digital conversion. She saw this role as a great learning opportunity to help her both with her studies and her professional career. Jwan does play two instruments—the bass guitar and euphonium—both of which are rhythm instruments. A fun fact about Jwan is that she loves trains and the history of old train stations, such as the historical building at Vancouver’s Waterfront Station. She also loves dogs, but does not currently have a pet because of her busy schedule.



Carly, also a Canada Summer Jobs student, started her bachelor’s degree in psychology at UVic this fall. She is considering a number of career pathways in the helping professions or law. Her role this summer was to help the SBCV with a variety of tasks that will add value to members through

our programs and services. When not working or studying, Carly is a competitive dancer, which she has done for 14 years. She trained in tap, jazz, lyrical, contemporary, musical theatre, hip-hop, stage, and ballet. This activity has kept Carly’s physical fitness very high, and she is proud of her agility and flexibility, and—ahem—she can even make her joints pop on command. Carly loves animals and has a rescue dog named Ollie.

Some instruments, such as trumpets, piano, harp, or organs, may be used less often, but have a very specialized purpose. They come in with a flourish when needed and fade away when not. Contractors Eva, Karim, Inga, and Arlene are critical members of our SBCV ensemble and have specific and precise roles at timely intervals.



Eva is the copy editor of the quarterly West Coast Veterinarian magazine, a service she has provided for SBCV since 2019. Eva is certified as a copy editor and proofreader by the Editors’ Association of Canada, and her job is to edit the articles to ensure they are readable and presentable and meet

editorial standards. Eva lives in Squamish and loves the outdoors, especially rock climbing. A little-known fact about Eva is that she has a bachelor’s degree in biology and a master’s degree in software engineering. However, her career path has led her to working in her current field, which she enjoys very much. Eva loves animals and recently said goodbye to her elderly cat, Pico.



Karim is a graphic designer who is in charge of creating the entire front-to-back design and visual appeal of both the print and digital versions of West Coast Veterinarian magazine. This includes printing, labelling, and distribution, and ensuring accurate digital links in articles and ads. When not working, Karim loves to spend time walking and biking along the river trails near his home in Port Coquitlam. He is very family oriented and loves animals, so the work he does for the magazine has much personal appeal. A little-known fun fact about Karim is that he has gone para-sailing—an activity way out of his comfort zone—and still can’t believe he actually did it.



Inga is the marketing consultant for West Coast Veterinarian magazine, a role she has held for 10 years. Her job is to reach out and sell ads to businesses that provide products or services for the veterinary community. Inga recently

reduced her work commitments so she can focus on other interests. She and her husband are in the process of completely renovating an older home, and she is excited about all the new things and skills they are learning as they go along. Inga loves animals—both domestic and wild—and their pets have always been rescues or hard to adopt. She currently has two chihuahuas and enjoys watching the squirrels, birds, raccoons, and other wildlife around her home.



Arlene retired in 2020 after a successful career in counselling, human resources, and association management. Like many baby boomers, after six months of retirement Arlene was bored and went back to work on a contract

basis with a variety of organizations. She recently joined SBCV to help the team with various projects and programs such as the Veterinarians for Veterinarians Peer Support Program. Arlene loves animals of all kinds, especially horses. She has been riding her entire life and currently owns a 14-year-old Quarter Horse gelding named Riley. When not working, gardening, cooking, or spending time with family and friends, you will find Arlene and Riley on the beautiful equestrian trails in Maple Ridge or Langley.

# HELP STOP THE SPREAD OF AVIAN INFLUENZA VIRUS (AIV)

British Columbia is at extreme risk for avian influenza virus in fall/winter 2022/2023



Ministry of Agriculture and Food

For more information, scan the QR code or visit: <https://qr.codes.pro/QhqdqE>

**REINFORCE**

Support your clients in developing robust biosecurity programs for their flocks

Recommend clients enrol in BC's Premises Identification Program so that they can be notified of local outbreaks

**RECOGNIZE**

The most common clinical sign is a sudden increase in mortality

Birds can also present with coughing, sneezing, nasal discharge, diarrhea, etc.

**REPORT**

If you suspect AIV, report it to your CFIA district veterinarian

IMAGE COURTESY CHELSEA HIMS WORTH

CUT OUT THIS PAGE IF YOU WISH TO SAVE IT.

**T**he workforce is changing. The COVID-19 pandemic has accelerated a societal shift as an increasing number of people seek remote work arrangements and an increasing number of employers offer these. This is not another column focused on your legal obligations concerning COVID-19 safety plans. This column examines another aspect of the workforce in which people seek flexibility: their status as a worker. Many employees are simply no longer content, in the words of the inimitable Dolly Parton, with working nine to five. They are looking for work arrangements that provide flexible work hours and locations. This results, in some cases, in employees becoming independent contractors. Employers in the modern workplace need to be able to accommodate these desires and need to understand how to protect their business at the same time.

Identifying and understanding the different obligations that pertain to employees and independent contractors is an important function for employers. There are some aspects of the employment relationship that do not change significantly. There are others, however, that are completely different and that create very different obligations for both employer and employee. Each of you must know and understand the differences and how they affect the relationship in the workplace, both during and after the employment relationship.

dismissal damages by the courts if employees are terminated without proper notice.

### INDEPENDENT CONTRACTORS

Independent contractors have a somewhat more complicated relationship with the business for whom they contract. They are self-employed and they are very specifically not limited to working for one client or company. It is often the case that where an individual works for only one entity, CRA and the Employment Standards Branch tend to take that as an indication that they are in fact an employee and not an independent contractor. A contractor typically retains control over how and when the work is performed, but this is not inviolate. It is the case, however, that the less discretion the worker has in this respect, the more likely it may be that entities such as CRA and the Employment Standards Branch will consider them to be employees. Independent contractors can hire their own employees or subcontractors without the need for any permission from anyone else, unless the contract specifically provides for such limitation. Perhaps most importantly for the contractor, they have the opportunity to make profits or incur losses from their work, depending upon the terms they negotiate and how effectively and efficiently they perform their tasks. They do not typically have benefit plans as part of any contract of work, and they are not afforded protection from any worker's rights or employment legislation.

Our focus in this column will be on helping both employer and employee understand the distinction between an independent contractor and an employee. We will provide an overview of each category, consider the most significant legal implications, and examine some cases that illustrate how the categories are distinguished.

You can see that the distinction between employees and independent contractors is easy to recognize. Or is it? A body of caselaw has developed specifically around the different factors involved in determining whether someone is an employee or contractor. It may not be as clear, therefore, as it may first appear. The amount of caselaw that has arisen on this point actually suggests that the difference between an employee and independent contractor can be difficult to distinguish. A frequent reader of this column will not be surprised to learn that the courts have not articulated a single clear test for determining if an individual is an employee or independent contractor. Courts much prefer more nuanced and long-winded analyses of such questions. Accordingly, they have very helpfully identified several key factors to assist in the assessment.

### EMPLOYEES

We will begin with the easiest and generally best-known facts about the employment relationship. Employees work for one client or company and the employer has direct and effective control over how the employee's work is performed. An employee cannot hire an assistant or other individual to work for them without the consent of the employer. Employees are not responsible for the operating expenses of their client or employer. Employees generally do not have the opportunity to profit from their work and they are paid a fixed amount, although this can be replaced by commissions or augmented by bonuses. They can also be entitled to benefit plans as an additional taxable benefit, the cost of which is typically shared with the employer. Employees are also typically provided tools and equipment by their employer for their work, and similarly, employers are typically responsible for the repair, maintenance, and insurance costs of that equipment or premises related to the activity of the employment.

Independent contractors do not have the same rights that employees are granted under the Employment Standards Act. Generally, independent contractors are not entitled to notice upon termination and they can be terminated without reasonable notice, unless they have negotiated contrary terms in advance. Therein lies the rub, so to speak. Contractors can indeed have entitlements very similar to employees, but only if they are able to negotiate such terms with the "employer" in advance. Prudent contractors can often have contracts that provide them terms considerably more beneficial than those provided to employees in the same workplace. It is entirely up to the contractor and the business owner.

Employees also have specific protections afforded by the Employment Standards Act.<sup>1</sup> Under this legislation, employees have the right to vacation, statutory holidays, and a certain amount of notice upon termination, although the common law typically provides a greater amount of notice. Employees may also be awarded common-law wrongful

dismissal damages by the courts if employees are terminated without proper notice. It is important to understand, however, that a contractor may not be considered a contractor by such entities as CRA, the Employment Standards Branch, or the courts simply because they enter into an agreement that says they are one. While an agreement may expressly state that an individual is an independent contractor, that clause alone is not sufficient to make it so. The courts and other entities look beyond the simple wording of agreements and also consider the circumstances of the relationship to determine a worker's status.

### CHO V. STONEBRIDGE SOLUTIONS INC.<sup>2</sup>

In the *Cho* decision, the court considered the question of whether Mr. Cho was an employee of the defendant company, Stonebridge Solutions Inc., or an independent contractor. Stonebridge hired Cho for a new company it intended to form and described the role as a contract position with

Western Drug Distribution Center Limited

35 years of Professional Service

"Your Success is Our Business"

## MEMBER OWNED SERVICE DRIVEN INNOVATIVE

- Largest selection of veterinary products in Canada with over 26,000 products sourced from 310 suppliers
- Annual product catalogue and full color instrument picture catalogue
- Late order cut-offs with overnight delivery to most clinics in Western Canada
- Delivery utilizing the WDDC fleet of ambient temperature controlled trucks
- Ability to receive orders from popular practice management system using electronic bridging technology
- Weekend order fulfilment for Monday delivery
- Case lot discounts for members and annual dividends based on purchases
- 4% discounted pet food pricing program (value pack)
- Multiple payment methods (Visa®, Mastercard®, Pre-authorized withdrawals and online banking payment option)
- 2% prompt payment discount off statement
- Online ordering with up-to-date product pricing, quantities on hand, expiry dates, ETA on back ordered items, customizable retail price ticket feature, and human & veterinary Compendiums
- Integratable web link from our Professional Pet Products retail website
- Full line of instruments, kennels and cages, surgery tables and lights, veterinary and dental equipment
- Returns processed and credits issued within statement periods
- Extensive assortment of retail pet products and annual full color retail catalogue
- Custom member sales reporting, price ticket, shelf labels & barcode technologies
- Member Affinity Programs such as long distance, discounted courier rates, fuel discounts, waste disposal, office & janitorial supplies, blade sharpening & equipment repair, office equipment, educational programs, printing & promotional items & digital imaging, Staples Advantage, TD Merchant services, clinic insurance and financial lending programs
- Human Resource education and support for members
- Online controlled substance ordering with next day delivery (electronic signature)
- Vantage suite of programs ClientVantage™ (client based web ordering tool) Advantage™ (informational media tool) PracticeVantage™ (complete practice management suite) EVantage™ (electronic educational tool), mobile and batch scan ordering tools
- Veterinary apparel including clothing, footwear and coveralls
- Practice management CE (continuing education) for Veterinarians and Technologists

For further information on the above services contact Customer Service  
Toll Free Phone 1-877-746-9332 • Toll Free Fax 1-800-329-9332 • [msservice@wddc.com](mailto:msservice@wddc.com)



an option to shift to a salaried position. Stonebridge agreed to pay Cho a fixed annual salary, a signing bonus, provide medical and dental benefits and provide a cellphone allowance. Cho was also provided with a laptop, software services necessary for his job, and an email account. Cho asked for a letter of employment confirming the terms of employment, but Stonebridge stated that this would need to wait until after the new company was formed. Similarly, Stonebridge informed Cho that the benefits and signing bonus would need to wait until Cho signed an employment contract with the new company.

Cho was paid by money that came out of Stonebridge's primary shareholder's bank account, not the company bank account, and no statutory deductions were made. Each payment took the form of a bank draft that stated "contract payment" on it. Significantly, however, Cho never invoiced the company for any of the amounts owing to him. Cho worked without an employment contract for six months when Stonebridge terminated the relationship. Stonebridge rejected Cho's proposed departure terms, and Cho was not paid for the work that he performed before his termination.

The court found that while Cho exercised some independence, it did not amount to the degree of independence of an independent contractor. Stonebridge provided direction to Cho and also provided the tools necessary for Cho to do his job. He was also paid a fixed salary every two weeks. Unsurprisingly, the Court found that Cho was in an employment relationship with Stonebridge, despite being classified by both the employee and the employer as a contractor.

#### THE DEPENDENT CONTRACTOR

The standard distinction you hear in business is that between an employee and an independent contractor. The terms are reasonably self-explanatory and are not difficult to discern the meaning of. There is a third designation, however, that is less well-known within the thick-carpeted and wood-panelled corridors of commerce: the legally recognized third category of the dependent contractor.

You will not be surprised to learn that dependent contractors fall legally between employees and independent contractors. Dependent contractors are not generally on an employer's payroll, yet operate as and are treated as an employee.<sup>3</sup> They work mostly for one client or company, and they are subject to the

client or company's control concerning how their services are provided. They will often use their own tools in the provision of their services. It is also generally the case that dependent contractors have long-standing relationships with the "employer." As a dependent contractor, you are entitled to reasonable notice of termination and you may also be entitled to wrongful dismissal damages if you are terminated without proper notice, as demonstrated by the case below.

#### KHAN V. ALL-CAN EXPRESS LTD.<sup>4</sup>

Khan operated as a courier truck driver for Ace-Courier using his own vehicle. Khan signed a contract with Ace-Courier stating he was an independent contractor. The contract stated that Khan was responsible for all costs associated with his vehicle's operation. Khan also declared himself self-employed when filing his taxes and he received no extended benefits from Ace-Courier, nor was he paid vacation pay. Thankfully, for our purposes at least, Ace-Courier eventually terminated Khan.

The court found that Khan was a "dependent contractor." In reaching this conclusion, the court noted that Khan worked for Ace-Courier for five years on a full-time basis. Further, he wore the company uniform and the company's logo was displayed on his vehicle. Ace-Courier did not want Khan to work for its competitors, and Khan's contract included an express non-compete clause. Khan was also bound to follow Ace-Courier's policies. Accordingly, while there were certainly elements of an independent contractor relationship, the predominant nature of the relationship was that of employee. Accordingly, the relationship was characterized as a "dependent contractor," and the court awarded Mr. Khan wrongful dismissal damages.

#### FINAL THOUGHTS

We trust we have sufficiently set out the importance of recognizing the different categories of workers. The distinction between employees, independent contractors, and dependent contractors may in many instances be relatively easy to discern. Certainly, the difference between an employee and an independent contractor may be sufficiently straightforward that you need no further assistance dealing with either one. If you are tempted to think that simply stating that a worker is a contractor is sufficient to make that worker a contractor, however, then I urge you to read this column again, and this time more slowly.

It is my view that the courts got this one right in that they have decided that it matters less what you call the position and much more what the position actually does. The famous "duck test" ("If it looks like a duck, walks like a duck, and quacks like a duck, then it just may be a duck") can be applied here with considerable utility. As an employer, you want to avoid hiring a duck when what you intended to hire was a goose. If you are in doubt, consider consulting your lawyer. They can help you get the goose you want and not the duck you don't. **WCV**

<sup>1</sup>RSBC 1996, c 113.

<sup>2</sup>2020 BSC 1560.

<sup>3</sup>Glimhagen v. GWR Resources Inc., 2017 BCSC 761 at paragraph 44.

<sup>4</sup>2014 BCSC 1429.



Scott Nicoll, BA, MA, LLB, is a member of the Law Society of British Columbia and a partner at Panorama Legal LLP. He acts for professionals, including defending professionals who are the subject of complaints to their professional colleges.



Gurinder Cheema, BA, LLB, is a member of the Law Society of British Columbia and an associate lawyer at Panorama Legal LLP.

CUT OUT THIS PAGE IF YOU WISH TO SAVE IT.



**4** **6**  
**NOVEMBER TO NOVEMBER**  
**FRIDAY SUNDAY**  
at the Pinnacle Harbourfront Hotel



Those wishing to attend remotely can still access the sessions and ask questions in real time. This hybrid event has something for everyone.

**ALL IN PERSON INCLUDING**  
the return of our fabulous fun and friendly **TRADE SHOW**

Tickets available at:  
[www.canadianveterinarians.net/sbcv/continued-education-ce-and-events](http://www.canadianveterinarians.net/sbcv/continued-education-ce-and-events)

## 2022 FALL CONFERENCE & TRADE SHOW


Live and in person in downtown Vancouver

<p><b>FRIDAY NOVEMBER 4, 2022</b> 6:00 p.m.–7:00 p.m. Telemedicine with Dr. Serge Chalhoub, DVM, DACVIM (SAIM) GENEROUSLY SPONSORED BY </p> <p>7:00 p.m.–9:00 p.m. Medical Record Keeping with Dr. Linda Crews, DVM GENEROUSLY SPONSORED BY </p>	<p><b>SATURDAY NOVEMBER 5, 2022</b> 8:00 a.m.–11:30 a.m. Undetected Pain and Subsequent Behaviour Problems with Dr. Katherine Pankratz, DVM, DACVB GENEROUSLY SPONSORED BY </p> <p>1:00 p.m.–4:30 p.m. Cats, Kidneys, and Bladders with Dr. Serge Chalhoub, DVM, DACVIM (SAIM) GENEROUSLY SPONSORED BY </p>	<p><b>SUNDAY NOVEMBER 6, 2022</b> 8:00 a.m.–11:30 a.m. Dermatology with Dr. Allison Foster, DVM, DACVD GENEROUSLY SPONSORED BY </p> <p>1:00 p.m.–4:30 p.m. Anaesthesia with Dr. Odette O, DVM, DACVAA GENEROUSLY SPONSORED BY </p>
--	---	--

5:30 p.m.–7:00 p.m.  
**Annual General Meeting of the SBCV**

# Built BIG

for the needs of **Large Animal Vets**




In the field or in your clinic, **SoftVet** manages all your scheduling, care notes, prescriptions, invoicing and more, all from one cloud-based platform. This simple all-in-one, mobile solution is everything you need to run a thriving practice.



Produce detailed digital records and reports



Create and issue invoices in the field



Calendar so your vets know where to be and when



Records created in the field are auto-synced with the office

**Don't Wait!**

If you're a **large animal vet** or clinic manager and want to foster a thriving practice, you need to take a closer look at SoftVet.



Harness the power of **SoftVet!**  
Contact us today for a Free Demo.

[www.soft-vet.com](http://www.soft-vet.com)

**Eastern Canada Call: 519-914-1779**  
**Western Canada Call: 403-694-0436**

Features are subject to accounting system used.

# IS THIS ARMAGEDDON OR CAN I RELAX?

Earlier this month, an acquaintance asked me about all the market volatility we've seen this summer. He wanted to know if he should stay relaxed...or if this was the beginning of a financial crisis. After all, he pointed out, inflation has skyrocketed this year. Interest rates are on the rise, and the media is constantly talking about the possibility of a recession.

How can an investor stay calm in these turbulent times?

In response, I asked him if he remembered early 2020. Who could forget? COVID-19 spread across the planet like wildfire. Stocks plunged into one of the fastest bear markets in history. At one point, oil prices were actually below zero! So many things happened in so short a time, it seemed like financial Armageddon.

But it wasn't.

By the end of spring, the markets had largely recovered – and investors who kept their heads, stayed calm, and held to their long-term strategies got in on the ground floor of an incredible bull market.

It's true that there is a lot of uncertainty in the markets right now. Inflation hit 8.1% in June. In response, the Bank of Canada raised interest rates by 100 basis points, the largest single rate hike since 1998. And with so many Canadians in debt and home prices plunging, it's hard to feel confident about what the future holds.

As uncomfortable as this is, though, none of it is new. The events we're seeing are important, and they unquestionably have an effect on how regular Canadians like you and me live our daily lives. But as long-term investors – which we are – periods of market volatility and economic uncertainty are just sequels to movies we've already seen before. And just as in early 2020, investors who stay patient and relaxed will benefit in the long-run.



**Derek Lacroix**  
Associate Portfolio  
Manager

**Eric Muir**  
Senior Portfolio  
Manager

**Tracey McDonald**  
Portfolio Manager

**PHOVIA**  
Skin care by the speed of light

HELPS REDUCE  
RECOVERY TIME UP TO  
TWICE AS FAST?

**YES**  
with PHOVIA®



SEE THE RESULTS FOR YOURSELF

For more details, visit [phovia.ca](http://phovia.ca) or  
contact your territory manager directly.



PHOVIA.CA

\*Studies available upon request of a veterinarian.



604-451-3100

[www.muironmoney.com](http://www.muironmoney.com)

MUIR INVESTMENT TEAM

RAYMOND JAMES

Raymond James Ltd., member -  
Canadian Investor Protection Fund



itching eased  
joy retrieved



**Nutrition specially formulated to support skin health in puppies.**

- 1** Nutrition formulated to help reduce allergic responses, including licking, scratching, headshaking and skin redness
- 2** The only clinical nutrition for both food and environmental allergies in puppies (among leading brands in North America)

**SCIENCE DID THAT.**