

THE
AUSTRALIAN
VETERINARIAN MAGAZINE

The Dawn of AI in Veterinary
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**Benefits of hydrotherapy to
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References: 1 Paterson S, 2018. "The use of antibiotics and antimycotics in otitis." Companion Animal. 23(11): 608-613

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THE AUSTRALIAN VETERINARIAN

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THE DAWN OF AI IN VETERINARY MEDICINE

A SWEEPING WAVE OF ARTIFICIAL INTELLIGENCE (AI) TECHNOLOGY HAS TAKEN THE REINS IN THE HUMAN MEDICAL SPHERE, AND THE VETERINARY SPACE IS NOT FAR BEHIND.

Cutting-edge transcription tools, such as Goldie and VetScribe, are helping to redefine clinic workflows and usher in a new era of efficient, more accurate record keeping - and may be just the thing vets need to finally get out of work on time.

These AI-powered tools record appointments, then swiftly create extensive medical records, encompassing all relevant data from appointments, without the need for typing. They accurately extract relevant history, physical exam findings, treatments, and even leverage the remarkable power of large language models to suggest differential diagnoses.

Goldie's founder, Katherine, herself a veterinarian, former practice owner, and parent, sculpted the product from her own experiences in the field. Record keeping was always a huge time-sink for

her personally, and she found many of her practice's vets were spending hours of overtime keeping up with theirs - something we all know can be a significant contributor to low morale and burnout. With a previous stint as founder of a Y-Combinator-backed startup in Silicon Valley - the same incubator that propelled companies like Airbnb and Dropbox - Katherine used her entrepreneurial acumen to start Goldie. She says vets are reporting it now takes mere minutes to finish a full day's worth of records.

However, AI's potential stretches beyond just transcription tools. It offers a plethora of potential solutions to improve veterinary practice. For clinic owners, AI could prove invaluable in reducing "lost" revenue, by ensuring no billable items slip through during invoicing. AI could also help to manage and streamline insurance





Dr Katherine van Ekert with her dog Delilah

claims, easing this often complex and time-consuming process for both clinic staff and clients. We can also expect to see tools that help with staff rostering optimization and specialist referral management.

Another compelling area is client communications and treatment compliance. AI could be used to seamlessly and easily craft bespoke client summaries and handouts based on their unique experiences in the consult room. This would not only ensure pet owners are well-informed about their animals' health, but also fosters personalized, and therefore improved, client relations, and the hope of improving treatment adherence - a significant yet often underappreciated aspect of our work. Treatment adherence could also be enhanced through AI tools catered to pet owners in the home - think an enhanced version of client medication reminders, that could learn about client habits and behavior that may be contributing to poor compliance, and tailor communications to mitigate these.

While not quite there yet, we may very well expect to see AI contributing to clinical support in the next few years, too: aiding veterinarians in strategizing treatment plans and case management. These large language model technologies can't "think" in the way that vets do, but they can complete a sophisticated form of pattern-matching, making them a useful assistant. It could also assist in patient triage, with the ability to match patient clinical signs to potential diagnoses. And of course, AI is already being used widely in image analysis, serving as

a digital second-opinion and boosting the accuracy of clinical decision-making.

In sum, AI stands to bring about a paradigm shift in veterinary medicine, serving as an efficient aide for both medical and practice management. And as technology continues to evolve, the future of AI in veterinary medicine heralds exciting possibilities.



2023 WSAVA MICHAEL J DAY SCHOLAR ANNOUNCED

AWARDEE TO INVESTIGATE CANINE DISTEMPER VIRUS MATERNAL ANTIBODY TRANSFER IN DOGS

German veterinary student Lotta Truyen has been announced as the WSAVA 2023 Michael J Day Scholar.

Ms Truyen, a student at the University of Veterinary Medicine in Hannover, Germany, will receive a grant of US\$15,000 to support her research, which aims to gain a better understanding of how canine distemper virus (CDV)-specific maternal antibodies are transmitted from mothers to puppies in order to inform future CDV vaccine strategies. She will carry out her research between February and April 2024 at the Caddy Lab at Cornell

University, New York. The Caddy Lab is developing a panel of canine-specific functional antibody assays that can be used to better understand antibody activity.

CDV can cause severe disease in dogs and vaccination is advised by international veterinary guidelines. Ms Truyen will study antibodies extracted from colostrum and cord blood and compare them, in both function and structure, with those detected in their mother's blood.

Commenting on the award of the Scholarship, Dr Mary Marcondes, Chair of the WSAVA Vaccination Guidelines Group, said: "Among the many high-quality applications we received in this second year of the WSAVA Michael J Day Scholarship, Ms Truyen's project stood out and we look forward to



reviewing the outcomes of her study. It will undoubtedly have a positive impact on our understanding of maternal antibody transfer."

The WSAVA Michael J Day Scholarship provides financial assistance to enable the selected Scholar to carry out research into an aspect of small companion animal infectious disease, clinical vaccinology or immunology. It was created to recognize Emeritus Professor Michael Day's contribution to vaccinology and immunology in companion animals in his role as Chair of the WSAVA's Vaccination Guidelines Group from 2009 until March 2020. The Scholarship is generously supported by MSD Animal Health.

It is expected that clinically applicable results from the study will become available from this project towards the end of 2024.

Lotta Truyen said: "I feel honored to have been selected and am looking forward to working with Sarah Caddy at the Baker Institute at Cornell University on maternal antibodies. I am also excited to be able to attend WSAVA World Congress 2024, where I will present my results. Thank you, WSAVA, and thank you, MSD, for creating this wonderful opportunity."

"MSD Animal Health believes that the next generation of veterinarians will be instrumental in impacting the way we prevent, treat and manage companion animal infectious diseases," said David Sutton global technical director, Companion Animal Vaccines, MSD Animal

Health. "Although we've known about the basic role of maternal antibody in dogs for years, many important details still remain to be investigated. A deeper knowledge and understanding of canine distemper maternal antibody transfer and function will help establish improved vaccine strategies in the future, which is why we're proud to support Ms Truyen's research in honor of Michael J Day."

Full details and guidance on the Scholarship application process for 2024 will be available soon on the WSAVA website.





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PARABOSS: PAVING THE WAY FOR LIVESTOCK HEALTH THROUGH PARASITE CONTROL

Biting ticks, sucking lice, wriggly worms and fighting flies are the target of Australia's sheep, cattle and goat industries popular parasite management website known as ParaBoss. The website has been given a major overhaul making it easier than ever for producers to find accurate and trusted information about managing these pesky parasites.

The ParaBoss suite of websites has been providing tailored information on worms, lice, flies and, more recently, ticks, for more than a decade, and this is the first time the site has received a major upgrade since its original development. Information is now even more accessible to producers, through clear search functions, user friendly tools and the ability to save information preferences to match your needs.

The redeveloped website comes as part of a major project funded by Meat & Livestock Australia (MLA), Australian Wool Innovation (AWI), and Animal Health Australia (AHA), which also includes a tailored extension, communication and awareness program.

Dr David Beatty, Group Manager – Productivity & Animal Wellbeing at MLA said it is fantastic to see the updated website launched after a period of consultation, planning, workshopping and building.

“Parasites are top of mind for many livestock producers as we come into a wet Spring, so it is imperative they have easily accessible and reliable information available on parasite management.

“The new website culminates a significant body of work from the parasite management experts across Australia involved in reviewing and redeveloping the online resource,” Dr Beatty said.

Dr Jane Littlejohn, AWI's GM Research has also welcomed the launch of the new website and applauded the inclusion of livestock producers as part of the testing process.

“A valuable component of the ParaBoss website redevelopment was consultations with key user groups, including woolgrowers, sheep, goat and cattle producers,” said Dr Littlejohn.

“Their input during the early phase has contributed to the new website.

“With the new site now up and running we will continue to keep livestock producers front of mind in the on-going testing and improving of the site” she said.

Adam Pate, AHA's GM Customer, Strategy and Operations has congratulated everyone involved in getting the ParaBoss website to this point, in what has been a big body of work.

“We have transitioned eight separate websites and more than 15 tools into one defined and dedicated website resource, which has seen key information across the sites consolidated into clear topic areas,” said Mr Pate.

The new ParaBoss website is now live, it is set to undergo periodic reviews over the next few months based on user feedback and all users are welcome to fill out the feedback form on the site to ensure the next updates reflect their requirements.



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Reference: 1. Summerfield N.J., Boswood A., O'Grady M.R., et al. (2012) Efficacy of pimobendan in the prevention of congestive heart failure or sudden death in Doberman Pinschers with preclinical dilated cardiomyopathy (the PROTECT study). *J Vet Intern Med*, 26(1):1337-1349.

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OVC RESEARCH FINDS SOCIAL BEHAVIOUR OF DOGS CAN SIGNAL POTENTIAL ILLNESS



DOGS CAN SIGNAL ILLNESS IN SUBTLE WAYS THROUGH THEIR SOCIAL BEHAVIOUR, FINDS NEW RESEARCH FROM THE *ONTARIO VETERINARY COLLEGE (OVC)*.

Michael Brunt smiles at the camera with curly brown hair and black eye glasses wearing a plaid collared shirt under a light brown blazer.

In a study recently published in the *Journal of the American Association for Laboratory Animal Science*, OVC and international researchers found dogs that are feeling unwell interacted less often with other dogs.

“The behaviour of an animal is one of the best ways to assess their welfare,” said lead author Dr. Michael Brunt, postdoctoral fellow in the [Department of Population Medicine](#) and researcher in [The Campbell Centre for the Study of Animal Welfare](#).

The study involved observing the behaviour of 12 mature, female beagles in a controlled environment.

The dogs were fed a mix of three diets, some contaminated with *Fusarium* mycotoxin, a toxin produced by mould and often found in cereal-based pet food that can cause a variety of ailments.

Researchers then individually released the dogs into the centre aisle of a housing room for four minutes per day, observing their interactions with familiar dogs in adjacent kennels.

They found the total number of interactions, orientation, and attempted physical contact with other dogs were less frequent among those that had consumed mycotoxins.

Study an opportunity for develop AI, machine learning

“There is no one who knows their dog better than the humans who live with them,” Brunt said. “You know when your dog isn’t itself.” A pet owner may not be able to articulate the exact symptoms a dog is experiencing, but they can sense changes in their behaviour.

“With this study,” Brunt said, “we were able to pinpoint what some of those changes are, such as wanting to interact with other dogs less, or not seeking out social interactions with other dogs.”

The changes were subtle, he said, but significant.

“This is an opportunity to look at precision technologies and develop machine learning algorithms that could pick up those subtle changes in behaviour in a lab setting,” he explained.

“It could be a way to identify subclinical illness before it compromises their welfare,” he added.

Brunt stressed this study focused on one dog breed within a research environment; he would like to see further studies conducted with other breeds in a variety of environments.

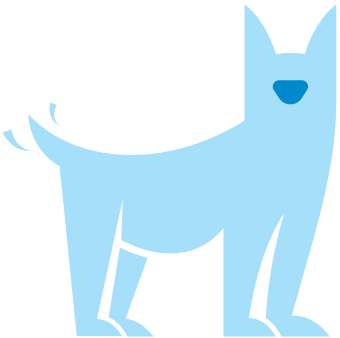
This research was supported by the Natural Sciences and Engineering Research Council of Canada.





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1. Data on file. **2.** MOMETAMAX Ultra Ear Drops Suspension for Dogs is a single application anti-inflammatory, anti-fungal and broad-spectrum antibacterial suspension indicated for the treatment of canine otitis externa associated with strains of bacteria susceptible to gentamicin and fungi susceptible to posaconazole. Read label for full claims.



USING FMRI, NEW VISION STUDY FINDS PROMISING MODEL FOR RESTORING CONE FUNCTION

SCHOOL OF VETERINARY MEDICINE AND PERELMAN SCHOOL OF MEDICINE RESEARCHERS IDENTIFIED A RETINAL DISEASE TO EVALUATE THE SUCCESS OF GENE AND CELL REPLACEMENT THERAPY.

Written By Erica Moser

School of Veterinary Medicine, Perelman School of Medicine

In the retinas of human eyes, the cones are photoreceptor cells responsible for color vision, daylight vision, and the perception of small details. As vision scientists from the Division of Experimental Retinal Therapies at the University of Pennsylvania School of Veterinary Medicine, Gustavo D. Aguirre and William A. Beltran have been working for decades to identify the basis of inherited retinal diseases. They previously showed they could recover missing cone function by reintroducing a copy of the normal gene in photoreceptor cells.

Both humans and dogs are affected by retinal disease, and a new study of

daylight vision using a canine model offers a critical insight for evaluating “whether these cell replacements—where we are introducing cones into the retinas of these dogs—is a successful approach for restoring cone vision,” says Beltran, the Corinne R. and Henry Bower Endowed Professor of Ophthalmology.

He and Gustavo Aguirre teamed with researchers including cognitive neuroscientist Geoffrey K. Aguirre, a professor of neurology at the Perelman School of Medicine, bringing together knowledge on the retinal system and brain measurements. In dogs with three different kinds of naturally occurring retinal disease and in dogs with normal vision,

the scientists used functional magnetic resonance imaging (fMRI) to assess brain responses to lights that stimulate only the cone cells.

The researchers found that fMRI can detect brain responses to daylight vision for black and white information as well as color information, and it can identify the area of the visual cortex that responds to stimulation of a region in the dog retina that is rich in cones and similar to the human fovea. They also found they can use fMRI to measure the relative degree of loss of daylight vision. Using this technique in animals with a retinal disease caused by a mutation in a gene called NPHP5, they demonstrated that gene augmentation





therapy restored the response in the cortex to black and white stimulation. That makes this disease a promising one in which to study photoreceptor cell replacement as a treatment in the future.

Their findings were published in *Translational Vision Science & Technology*. The other co-authors are Huseyin O. Taskin, a former research specialist at Penn in the GK Aguirre Lab and current graduate student at the University of Toronto, and Jacqueline Wivel, a veterinary technician.

“Canine models are useful for studying retinal diseases because they have a variety of different naturally occurring genetic disorders. The ultimate goal is to first demonstrate that these disorders can be treated in canines before translating it to human patients,” says Taskin, the first author. Gustavo Aguirre says, “The hope is that successful therapeutic approaches in people will then become available to veterinarians so that they can benefit man’s four-legged friend.”

Geoffrey Aguirre says, “The purpose of the study was to see, in different versions of these retinal diseases, how much information about daylight vision makes it to the visual system in these dogs.” This knowledge is particularly useful, he says, because figuring out whether a treatment for retinal disease has been effective requires knowing how much vision function was present prior to treatment.

Beltran says this paper shows that gene therapy can recover cone function because it looks at an animal model with no cone function and shows an

improvement. He explains that, in the disease caused by the NPHP5 mutation, cones are present but not functional. Animals with this disease are born day-blind but initially have some night vision, though rods—photoreceptors that allow night vision—die over a period of months, making dogs fully blind within a year.

Previous research has measured responses to stimuli through electroretinography and visual behavior tests, which Beltran says can require weeks if not months of dog training. Geoffrey Aguirre says the use of fMRI in this study is significant because it is faster and easier than measuring behavior, and it is not invasive. Taskin also notes that neither visual behavior tests nor electroretinography provide certainty as to what happens in the visual cortex.

A prior study showed that retinal gene therapy in a type of blinding disorder called Leber congenital amaurosis is associated with restoration of fMRI responses from the canine visual cortex, but the nature of that study meant that both rod and cone responses could have contributed to cortical activity. The new study furthers knowledge of retinal disease by specifically stimulating the cones.

Huseyin O. Taskin is a former research specialist in the Department of Neurology at the Perelman School of Medicine and a current doctoral candidate in medical sciences at the University of Toronto.

Jacqueline Wivel is a certified veterinary technician in the University of Pennsylvania School of Veterinary Medicine.

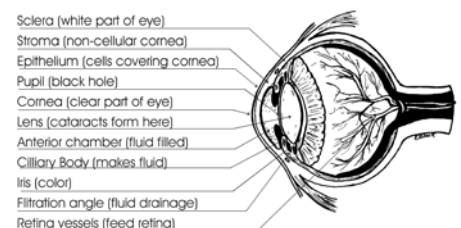
Gustavo D. Aguirre is professor of medical genetics and ophthalmology in Penn Vet’s Department of Clinical Sciences & Advanced Medicine.

William A. Beltran is the Corinne R. and Henry Bower Endowed Professor of Ophthalmology and director of the Division of Experimental Retinal Therapies in Penn Vet’s Department of Clinical Sciences & Advanced Medicine.

Geoffrey K. Aguirre is professor of neurology, associate director of the Penn Center for Neuroscience and Society, and associate director of neurology residency in the Department of Neurology at Penn Medicine.

This study was supported by the National Eye Institute (grants R24-EY029890, RO1-EY006855, RO1-EY017549, and P30-EY001583), Fighting Blindness Canada Vision 20/20, The Foundation Fighting Blindness, and the Low Vision Research Award from the Research to Prevent Blindness / Lions Clubs International Foundation.

Source: upenntoday.com



WHY DO DOGS CHEW SO MUCH - AND SHOULD WE LET THEM?

'CHEW HQ' WANTS TO HEAR FROM YOU ABOUT THE PRIVATE LIVES OF YOUR BEST FRIENDS

Professor Paul McGreevy is asking dog owners what they give their dogs to chew on - and how this helps them. You can take part in this landmark study.

Puppies and mature dogs chew. A lot – and not just while they are eating.

While this drives some owners mad, veterinary scientists suspect there must be functional reasons why your best friend chews bones, sticks, shoes, furniture, your hand. But science has largely overlooked the reasons why.

To find out, Professor Paul McGreevy at the Sydney School of Veterinary Science is leading a study to explore the functional significance of gnawing (and chewing) in domestic dogs.

He wants to hear from the dog-owning public what they give their pets to munch on.

Professor McGreevy said: "Gnawing is a common element of the canine behavioural repertoire, with feral dogs spending much more time chewing than hunting. So, the influence of gnawing on domestic dog welfare is likely to be highly significant.

"At first glance, we get the sense that this activity keeps dog's teeth clean. But despite the importance that dogs place on gnawing, the activity has been largely overlooked by science."

In veterinary behavioural medicine, gnawing is reported in association with distress and anxiety; as a part of destructive behaviour that can occur either when dogs are left alone or being confined, regardless of the presence of the owners.

"Gnawing could have potential as an indicator of welfare problems," Professor McGreevy said.

"Furthermore, gnawing the wrong items can cause physical injuries to the teeth or gums and can result in the ingestion of foreign bodies if dogs chew inappropriate objects such as stones, sticks and fabrics."

An understanding of the significance of chewing could see the development of new techniques to assist anxious dogs.

"Here at Chew HQ, as we have informally called ourselves, we are asking owners to tell us all about the types of chewable items they give their dogs to chew, tear and gnaw.

"We want to hear how often dogs are given these goodies and how they behave before and afterwards. We are also interested in the state of the dogs' teeth and their gut function."

Dog owners can complete the survey by scanning this QR Code.



Professor Paul McGreevy and some furry friends.





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BENEFITS OF HYDROTHERAPY TO VETERINARY PROFESSIONALS

By Caroline Zambrano

Animal rehabilitation treatments are becoming more popular among veterinary professionals across the globe as people seek alternative therapies to support the treatment of their pet's various health conditions.

Canine hydrotherapy is increasingly being used to treat a broad spectrum of conditions, effectively rehabilitating animals after injury or surgery, as well as for fitness and performance enhancement, weight loss and to maximise functional movement in older arthritic dogs.

A leader in canine rehabilitation, Sharon Osmond is founder and owner of K9 Swim Hydrotherapy and Wellness Centre in North Richmond NSW, and she's on a mission to increase awareness among veterinarians and vet nurses of the benefits of hydrotherapy for dogs.

Ms Osmond is a member of the Australian Canine Rehabilitation Association (ACRA) with numerous qualifications in veterinary nursing and animal rehabilitation, plus animal naturopathy, myofunctional therapy and photonic, cranio sacral and TTtouch treatments. She also received a scholarship with the Veterinary Nurses Council of Australia's Professional Development program to study at the renowned Greyfriars Veterinary Rehabilitation and Hydrotherapy Referral Centre in the UK.

Hydrotherapy involves the use of a pool or underwater treadmill, depending on various factors such as the size of dog, temperament and reason for referral. It is a form of low impact, non-weight bearing therapy that aids in the rehabilitation of sore, weak and painful joints. It enables a dog to exercise and recover from surgery or injury without putting their joints under stress that they would encounter if exercising on land.

"Flotation supports the entire body weight, and the limbs move freely without the "jarring" effect of exercising on hard ground," says Ms Osmond. "It allows dogs with paralysis to neutralise their spine, stretch out, be buoyant and wonderful for mental stimulation."

Hydrotherapy also supports cardiovascular fitness, weight loss, endurance and conditioning. Underwater treadmill (UWT) achieves 60-70% weightless exercise without changing normal movement patterns.

"Controlled speed and water levels improves benefit to patients, supporting them and shortening recovery time. The patient is weight bearing with resistance training in the water which results in faster muscle development," she says.

"The depth of the water can be varied, and the speed of the belt can be controlled. The workload of the muscle's longissimus dorsi and gluteus medius decreases as water depth increases in the UWT."

Observation through the glass walls on all sides of the UWT unit can monitor leg and gait movement.

"We can influence limb kinematics, in that both the swing phase and stride length increase with increasing water depths and belt speed," she said. "Hydrotherapy can assist in better range of motion of the post-operative CCL (cranial cruciate ligament) dog, improving flexion and stability."

Therapeutic effect on the patient can be achieved with the water temperature being between 26°C and 30°C.

"Warm water is essential for rehabilitation as it assists in reducing swelling and inflammation, increases blood and oxygen flow, increases elasticity and cell metabolism, and relaxes muscles. This will provide pain relief, increase range of motion and an effective and comfortable form of exercise," she says.

"A complete understanding of water properties is needed for hydrotherapy rehabilitation treatment programmes, including density, buoyancy, viscosity, hydrostatic pressure and surface tension."

There are also some contradictions for hydrotherapy, such as unhealed surgical incisions, open wounds, vomiting and diarrhoea.

"Hydrotherapy can be harmful to patients with an infectious or contagious condition, such as gastric upset, kennel cough, ear, eye or skin infections, uncontrolled epilepsy or untreated cardiac, liver or kidney disease. Hydrotherapy is also not recommended for bitches in season," says Ms Osmond.

Supporting veterinary treatment plan with hydrotherapy

Hydrotherapy can be an integral part of the veterinary practice for their patient's rehab treatment plan as well as an added service to the clinic.

"Including hydrotherapy in a patient's treatment plan enhances patient care," says Ms Osmond.

- **Assists in pain management and relief for the patient.**
- **Beneficial for post-surgery or injury recovery and conservative management of orthopaedic conditions.**
- **Allows quality of life, restores strength and mobility.**
- **After the patient has completed the hydrotherapy program, follow up appointments are scheduled with the vet, giving more business to the vet clinic.**

Veterinarian Dr Rob Willis from Rob's Veterinary Mobile Vet in Cairns has seen great results with patients using hydrotherapy, particularly for pain management. Dr Willis consulted out of the K9 Swim Hydrotherapy and Wellness Centre as a traveling pain management consultant for several years before moving to Queensland, and he had many patients regularly undertaking hydrotherapy as part of their mobility and rehabilitation programs.



Benefits of Hydrotherapy

- Aids in weight loss and obesity
- Pre and post operative conditioning before and after orthopaedic surgery
- Can assist with elbow or hip dysplasia, especially in young dogs.
- Strengthening of tendon and ligament issues
- Stress free support to muscles and joints with no impact
- Neurological issues
- Metabolic conditions
- Arthritis/ stiffness or old age - improving quality of life.
- Reduces inflammation of injured joints, fractures, and soft tissue injuries.
- Relief of pain, swelling, stiffness and lameness
- Increases range of muscle movement, flexibility, and joint mobilisation
- Makes joints more supple.
- Improves stamina and strengthens muscles.
- Can aid in pain relief of
- Degenerative Joint Disease
- Builds general fitness helping with injury prevention.
- Exercises all muscles allowing to rebuild or maintain cardiovascular fitness.
- Excellent for mental stimulation and general convalescence
- Conservative management of developmental orthopaedic diseases (eg hip dysplasia)
- Used palliatively, for fitness and for emotional wellbeing.



Peanut, Chihuahua

Female, age 5.5 years

Case Study

Told by owner Marc Smith

Peanut started hydrotherapy due to a gradual but consistent worsening of the luxating patella in her rear left leg, with her vet saying it was only a matter of time before she tore a ligament.

Peanut had surgery for her luxating patella in October 2023 in addition to regularly taking CBD oil and receiving regular Cartrophen injections post-surgery. Prior to the surgery, she completed a six-week 'prehab' hydrotherapy treatment in conjunction with an additional five-to-six weeks of one-on-one sessions in the pool with me.

To Peanut's vet and K9 Swim team's surprise, Peanut was ready to return to the pool just two weeks after her surgery and completed an additional six weeks of post-surgery rehab. She was then booked in for a further four weeks of treadmill sessions plus four weeks of one-on-one sessions in the pool.

Peanut had an amazing outcome from her hydrotherapy treatment. Our vet had given us a time frame of roughly a six-month recovery period and wasn't expecting her to be able to return to the pool for at least four to six weeks post-surgery. Peanut made a full recovery from her surgery in less than three months!

During her last check-up and Cartrophen injection (Dec 2023), our vet said they felt her leg was healing remarkably well and could not find fault with anything.

“Clients are seeking these options more and more and so to have hydrotherapy as a referral option is something I believe should really be part of routine spinal and orthopaedic care. It is also great for assisting in the management of arthritis and age-related wear and tear.”

“Done under the eye of a trained professional, hydrotherapy is a safe option for patients when dealing with a range of pain related complaints,” he says. “Hydrotherapy allows for a holistic/complementary approach in conjunction with medications and surgery in a way that is designed to restore function for the patient and improve mobility naturally rather than just masking pain.

Animals don’t have to have medical or pain related conditions to enjoy the benefits of hydrotherapy. For many dogs, it can be used for exercise and mental stimulation as a variation from regular exercise routines, like a daily walk.

“Owners seem to enjoy it as well watching their dogs have a swim,” says Dr Willis.



Dr. Rob Willis

“Dog sports, such as Dock Dogs, are increasing in popularity too so perhaps hydrotherapy could be a starting point for interested owners to pursue to see if their dog enjoys water-based activity.”

Veterinary consent is required before starting hydrotherapy, explains Ms Osmond.

“This also enables the hydro-therapist to understand the dog’s condition and be able to liaise with the referring vet if needed. Hydro-therapists are guided by the vet as to when the patient is ready to begin hydrotherapy,” she says.

To date, Ms Osmond has not declined a veterinary referral but has referred patients back to the vet for further tests.

“We had a patient with a Tibial Plateau Leveling Osteotomy (TPLO) and was not responding to the hydrotherapy. It was found that the patient had an infection in the bone and had to have the plate removed. Once resolved the dog restarted hydrotherapy and gained impressive muscle development and stability,” she says.

“We will liaise with the referring vet and advise owners to go back to their vet if we feel the patient is not improving or appears uncomfortable.”



K9 Swim team help Muzzle the Husky in the hydrotherapy pool.



The K9 Swim Hydrotherapy and Wellness Centre's pool



Wisdom the Malinois is doing a great job on the underwater treadmill.



JR the Bullmastiff nails his first ever session on the underwater treadmill.



Ricki the 15 year old Kelpie feels fit with weekly sessions on the underwater treadmill or the pool.



APVMA RELEASES CHLORPYRIFOS PROPOSED REGULATORY DECISION

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has released its proposed regulatory decision on the reconsideration of chlorpyrifos, an insecticide used for the control of pests in various agricultural, horticultural, commercial, and veterinary situations. Public consultation on the proposed decision is open until 11 March 2024.

APVMA Acting Chief Executive Officer, Dr Melissa McEwen, said the proposed decision to either vary and affirm or to cancel specific registrations and label approvals is based on potential risks to user safety and the environment.

“The proposal relies on currently available information and is a contemporary assessment of the hazards and risks associated with the use of chlorpyrifos in agricultural and veterinary products in Australia,” Dr McEwen said.

“The proposed decision to cancel certain uses is also comparable with action already taken by international regulators, including Canada, the USA, and Europe.”

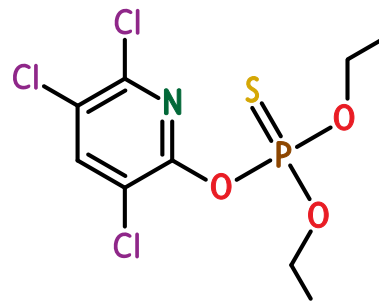
Dr McEwen acknowledged that chlorpyrifos has been seen as a cheap and effective insecticide and is used widely across agricultural industries.

“While it is not the role of the APVMA to identify alternative chemicals to control pests in certain situations, if our final decision is to cancel specific uses of chlorpyrifos, we are committed to

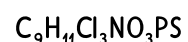
prioritising applications for off-label permits, or to vary current products or register new products, where no alternatives to chlorpyrifos are currently approved.”

Registered chemical products containing chlorpyrifos can continue to be used during the consultation period, in accordance with the approved label instructions. The APVMA will review feedback received from the consultation before making its final regulatory decision.

The proposed regulatory decision on chlorpyrifos is the first action proposed in response to the Ministerial Direction received by the APVMA on 13 July 2023. The APVMA intends to make decisions for other chemicals included in the Direction in 2024.



Chlorpyrifos



AU–UK SIMULTANEOUS VETERINARY MEDICINE APPROVALS COMMENCE

From today, potential registrants of veterinary medicines can have their products reviewed by the Australian and United Kingdom regulators at the same time, to facilitate speedier registration.

The Australian Pesticides and Veterinary Medicines Authority (APVMA) has published the United Kingdom–Australia Regulatory Cooperation: Guidance on Veterinary Medicines Simultaneous Reviews.

The APVMA and United Kingdom Veterinary Medicines Directorate (VMD) have developed this guidance, which will serve as the foundation for simultaneous reviews of veterinary medicines submissions by the 2 agencies.

APVMA Acting Chief Executive Officer, Dr Melissa McEwen, said the guidance represents an important step forward by expanding opportunities for industry to simultaneously access 2 major markets.

“This exciting new approach can reduce the burden and provides the opportunity for a single project team to work on the application, in line with common assessment timeframes,” Dr McEwen said.

“The guidance supports the APVMA and VMD’s shared aim of expanding access to treatment options for animals and helping food producers stay competitive globally.

“The guidance outlines how the simultaneous review process will work and is intended to complement each countries’ legislative and regulatory framework and associated technical guidelines, which remain in place.

“The APVMA is excited by the opportunity to streamline the registration process, and we look forward to working with the VMD and veterinary stakeholders on this new initiative.”

Stakeholders with questions about the simultaneous review process may contact:

Australian Pesticides and Veterinary Medicines Authority

GPO Box 3262

Sydney NSW 2001

Australia

Email: InternationalCoordinator@apvma.gov.au

Further information:

APVMA Media | +61 467 726 486 | media@apvma.gov.au.

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NEW TRENDS IN VETERINARY MEDICINE FOR 2024

TRENDS INCLUDE GROUNDBREAKING TREATMENTS FOR THE MOST POPULAR PETS: CATS, FRENCHIES AND BEARDED DRAGONS

Breakthrough drugs that can save the lives of thousands of diabetic cats, new approaches to help veterinarians and pet owners recognize and treat illnesses unique to French bulldogs, and how to better care for bearded dragons, America's most popular pet reptile, are just a sample of the more than 800 continuing education sessions that will be offered at the 41st annual Veterinary Meeting & Expo (VMX). Presented by the North American Veterinary Community (NAVC), VMX is the largest global veterinary conference and sets the direction each year for the \$104 billion animal health industry. This forum for the latest advances and innovations in animal health will be held January 13 -17, 2024 in Orlando, Florida.

"VMX is the world's most comprehensive veterinary conference. As the first veterinary conference of the year, it is where remarkable advances are announced and the newest lifesaving techniques are presented," said Dana Varble, DVM, CAE and NAVC Chief Veterinary Officer. "The global conference attracts the most distinguished veterinary leaders who will share and teach exciting breakthroughs taking place today across the industry. VMX 2024 will look at new medications, many designed specifically for animals, and how technology is transforming how we diagnose and treat animals. It's a very exciting and promising time to be in veterinary medicine."

VMX 2024 will be led by world-renowned animal healthcare experts who are available for interviews. Look for more sessions and presenters who will be highlighted this month. See the VMX 2024 Full Program for session dates and times.

Dr. Audrey Cook

Audrey Cook, DVM, professor of small animal internal medicine at Texas A&M University, Diplomate of both the American and European Colleges of Veterinary Internal Medicine and a recognized specialist in feline medicine through the American Board of Veterinary Practitioners.

Breakthroughs in managing feline diabetes in America's most popular pet. From the veterinarian's perspective, feline diabetes is a very treatable disease – but for the pet owner, it's not so simple. According to Dr. Cook, one in 250 cats is diabetic, and one in 10 cats will be euthanized at the time of diagnosis. Studies suggest that less than two-thirds of cats diagnosed with this condition are still alive after three months. Dr. Cook predicts that thousands of cats will live longer and better lives, thanks to breakthroughs in treatment options for feline diabetes in the form of two newly FDA-approved drugs that replace insulin injections with a simple pill or liquid to manage blood sugar levels.

"The mortality rate of feline diabetes is so high not because

of the disease but because pet owners do not feel they can provide the care their cats need to live with diabetes," said Cook. "We're massively excited about the huge impact two new game-changing oral treatment options will have on our feline patients. We now have the option to simply give a pill or put some liquid medicine on the cat's food once a day. No more scary needles and regimented schedules. Even more important, with these drugs, there is essentially zero risk of cats experiencing clinical hypoglycemia!"

Dr. Aida Vientós-Plotts

Aida Vientós-Plotts, DVM, PhD, DACVIM (Small Animal Internal Medicine), assistant professor of small animal internal medicine, and the co-founder and co-director of The BREATHE Clinic at the University of Missouri.

Frenchies Rule! Now What? – An Internist's Guide to Troubleshooting the Most Popular Breed in the U.S. Dr. Vientós-Plotts will conduct a session about common diseases affecting the most popular dog breed in the United States – French bulldogs, lovingly known as "Frenchies." Particularly, Dr. Vientós-Plotts will be highlighting a group of respiratory and gastrointestinal diseases often considered "normal" in these dogs. She will teach veterinarians what to look for and how to treat French bulldogs and other breeds so they can breathe better, swallow easier and improve their overall health and wellbeing.

"Brachycephalic, or flat-nosed breeds like French bulldogs, face many health and respiratory issues due to their signature flat snouts and are susceptible to a variety of conditions, including pneumonia, digestive disorders and hiatal hernias, many of which are intimately interrelated," said Vientós-Plotts. "While behaviors like snoring, spitting up or regurgitating food may be typical in French bulldogs and other brachycephalics, they are not normal and may represent more serious conditions. Learning how to identify and address those conditions as early as possible may result in longer, happier and healthier lives." Stacey Leonatti Wilkinson, DVM, Diplomate ABVP (Reptile & Amphibian), adjunct assistant professor at North Carolina State University College of Veterinary Medicine and owner and head veterinarian at the Avian and Exotic Animal Hospital of Georgia. Myth Busters! Top 5 Common Myths From Bearded Dragon Keepers and How to Address Them. Dr. Leonatti Wilkinson will debunk the most common myths about the most popular reptile pets in the country from what they should eat (no, they should not be eating 50 crickets a day) to how to keep them hydrated and avoid "tail rot." Wilkinson will set the record straight about these popular reptiles and help other professionals relay the best information to the owners of these unique pets.

Bearded dragons are the most popular reptile pets today

“Bearded dragons are by far the most common reptile pets in captivity. We often see multiple in a day in our practice where we treat only exotic pets. Because of this, the care requirements and veterinary medicine for this species is constantly advancing,” said Wilkinson. “When it comes to reptiles, it all depends on husbandry. The animal’s health is directly related to proper lighting, temperatures, humidity, caging, diet, supplements, etc. It is not as simple as putting a premade diet in a bowl and taking them outside to use the bathroom. These things are important every day of that reptile’s life, and they have to get them started right and be conscientious of everything they are doing for their pet all the time.”

Set to a veterinary-style World’s Fair backdrop, this year’s “Show of Shows” theme will offer attendees more than 1,000 hours of continuing education and feature exhibits on the latest in animal healthcare products and diagnostics from more than 600 companies and organizations from around the world in the award-winning VMX Expo Hall. The Expo Hall will also feature headlining entertainment, events and activities, including a carousel, a live miniature horse and carnival games.

Credentialed media may attend VMX for free, in-person or virtually. To begin your registration process click [here](#).

About the NAVC

The North American Veterinary Community (NAVC) is a nonprofit organization dedicated to supporting and advancing veterinary professionals worldwide. The world’s leading provider of veterinary continuing education, NAVC delivers essential training, tools and resources for veterinary professionals to stay abreast of advances in animal medicine and provide the best medical care for animals everywhere. Through its commitment to innovation and excellence, the NAVC has developed a diverse portfolio of products and services, including educational events, headlined by VMX, the world’s largest, most comprehensive continuing education conference and launchpad for new products and innovations within the veterinary industry; a robust digital platform for virtual learning and engagement; the veterinary industry’s largest and award-winning portfolio of trade publications; and an advocacy arm which unites the veterinary community and pet lovers. The NAVC was founded in 1982 and is headquartered in Orlando, Florida. Since 2017, the NAVC has been recognized as one of the Top Workplaces by the Orlando Sentinel. To learn more about the NAVC’s products and brands, visit <https://navc.com>. To see our schedule of upcoming events, visit <https://navc.com/calendar/>.



ANCESTRY® LAUNCHES KNOW YOUR PET DNA



ANALYSES TWO TIMES THE AMOUNT OF GENETIC INFORMATION COMPARED TO OTHER TESTS ON THE MARKET

Ancestry®, the global leader in consumer DNA testing and family history, has recently unveiled *Know Your Pet DNA* and its first product offering—a dog DNA test. There are currently an estimated 28.7 million pets in Australia, with the country reported to have one of the highest pet ownership rates in the world. Approximately 69% of households in Australia own pets, with dogs being the most common (48%), followed by cats (33%). *Know Your Pet DNA* leverages the DNA science and technology expertise from Ancestry to offer dog owners a greater understanding of their pets so that they can provide optimal care. Features include:

- Breeds: Discover the precise breakdown of your dog's breed(s) from a reference database containing over 400 different breeds from all over the world.
- Matches: Uncover close genetic matches to other dogs in our extensive dog database and dogs with similar breed mixes in your local area.
- Traits: Gain valuable insights into the unique genetic makeup of your pup with 30 behavioural and physical traits to help you understand them even better.

The *Know Your Pet DNA* test is the most scientifically advanced dog DNA test on the market. It offers customers detailed insights into their dog's behavioural qualities and traits—like their likelihood to have separation anxiety when they are left alone, their stress in veterinary situations, willingness to share with other dogs, noise sensitivities, and more. *Know Your Pet DNA* analyses more than twice as much of a dog's genetic data compared to other dog DNA tests on the market, providing a comprehensive understanding of each dog's genetics and behaviours and empowering pet owners to better know and care for their four-legged family members with deeper empathy and affection.

“One thing we hear from our customers who are dog owners is that many of them consider their pet to be a part of the family. At Ancestry, we are constantly looking for new ways to innovate and use our expertise to give our customers a better understanding of themselves and their family,” said Brian Donnelly, Ancestry Chief Commercial Officer. “As a proud dog enthusiast, I was inspired by the love my family has for our dog to create a product that helps us better understand him and meet his needs based on his genetics.”

Know Your Pet DNA by Ancestry® was developed by an expert team of DNA scientists and animal geneticists and have engaged in global research collaborations with esteemed institutions dedicated to canine well-being like Massey University and the University of Minnesota.

After purchasing a DNA kit, taking the *Know Your Pet DNA* test is easy with three simple steps:

1. Register your test at petdna.ancestry.com
2. Gently swab the inside of your dog's cheek for 30 seconds.
3. Return the sample using the provided prepaid box.

Once your dog's DNA is received, scientists meticulously prepare the sample, extract the DNA and, using Thermo Fisher Scientific's

DNA microarray technology, identify each dog's unique genetic blueprint. Ancestry's scientists then analyse genetic patterns compared to an expansive database, and unveil each dog's lineage, traits, and kinship connections in a clear, detailed, and easy-to-read format in just 2-4 weeks.

“Identifying the breed and genetic makeup of a dog requires advanced DNA analysis technology, especially for those with complex ancestry from many breeds,” said Kim Caple, President, Genetic Sciences, Thermo Fisher Scientific. “We are thrilled that Thermo Fisher's highly comprehensive canine genotyping technology, the Applied Biosystems™ Axiom™ Canine HD genotyping array, will provide Ancestry and its dog-loving customers with a more complete understanding of their pet's genetic background for improved care and creating even closer connections.”

The dog DNA kit retails for \$129 and is available exclusively on petDNA.ancestry.com.

About Ancestry®

Ancestry®, the global leader in family history, empowers journeys of personal discovery to enrich lives. With our unparalleled collection of more than 40 billion records, over 3 million subscribers and over 24 million people in our growing DNA network, customers can discover their family story and gain a new level of understanding about their lives. For over 40 years, we've built trusted relationships with millions of people who have chosen us as the platform for discovering, preserving and sharing the most important information about themselves and their families.

For further information, please contact the PR team at twheeler@ancestry.com or ancestry@webershandwick.com.au.





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Nobivac Oral Bb delivers convenience that works. It provides active immunisation against *Bordetella bronchiseptica*, an important pathogen in canine infectious respiratory disease complex.

Nobivac Oral Bb is easy to administer (1mL in the buccal cavity), has a 12 month duration of immunity and can be used from 7 weeks of age.

Discover how Nobivac vaccines provide tailored protection for dogs and cats. Contact your MSD Animal Health Territory Sales Manager or call 1800 033 461 to speak to one of our Technical Services Veterinarians.



CASE STUDY: 5YO FN MALTESE WHO WAS TRANSFERRED FROM HER VET FOR CONTINUED CARE FOLLOWING BEING ATTACKED BY A LARGER DOG (BDLD- BIG DOG LITTLE DOG)

Species: Canine

Breed: Maltese

Sex: Female Neutered

Age: 5 Years Old

Clinical History:

She was transferred from her vet for continued care following being attacked by a larger dog (BDLD- Big Dog Little Dog). The owner reports that she was attacked by the neighbor's Rottweiler earlier in the day. Her vet reports that she was vomiting blood.

She was completely normal prior to this event.

Sedated oral examination during these radiographs reveals a very large laceration between the base of the tongue and the epiglottis. Part of the hyoid bone is visualised.

Anatomic regions: Head and neck, Thorax

Details of study and technical comments:

- Head and Neck: Right Lateral, Left Lateral and Ventrodorsal radiographs
- Thorax: Right Lateral, Left Lateral and Ventrodorsal radiographs

The study is of diagnostic quality.

Diagnostic interpretation:

HEAD AND NECK:

There is marked soft tissue swelling ventral to the pharyngeal region (white arrowheads) with reduced oropharyngeal air space and with marked emphysema in the pharyngeal area (blue arrowheads); this is likely secondary to the reported tongue base laceration. On the right lateral there is an apparent separation between the epiphyoid and ceratohyoid bones (red arrowheads) raising concern for a fracture/luxation of the hyoid apparatus – this separation is less marked on the left lateral.

No further skeletal injuries are seen. On the right lateral there is apparent soft tissue swelling in the orbital region (pink arrowheads) but this cannot be further localised on the ventrodorsal. No further changes are seen.

THORAX:

There is a mild left lateralised pleural effusion (blue arrowheads) with an equivocal faint pleural fissure between the right cranial and middle lobes on the ventrodorsal (green arrowhead). On the ventrodorsal there is increased opacity of the left hemithorax with ipsilateral shift and loss of clarity of the heart. On the right lateral there is mild alveolar consolidation of the ventral region of the left caudal lung lobe (pink arrowheads). No pneumothorax is seen.

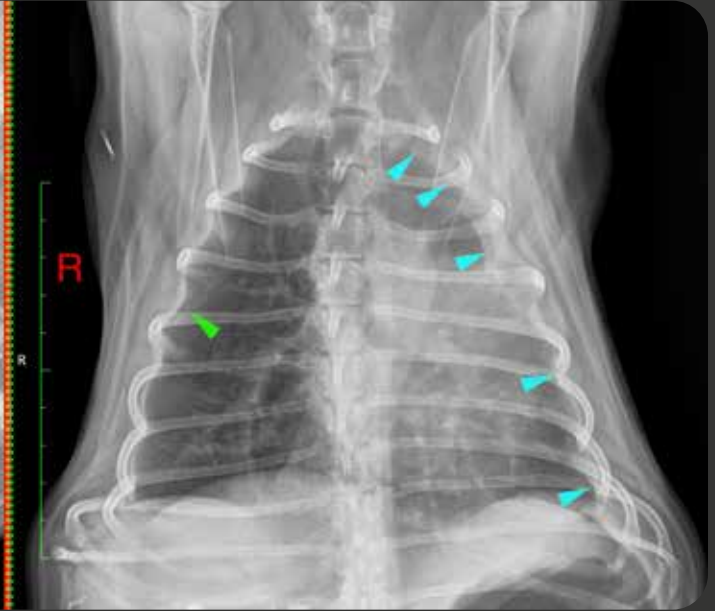
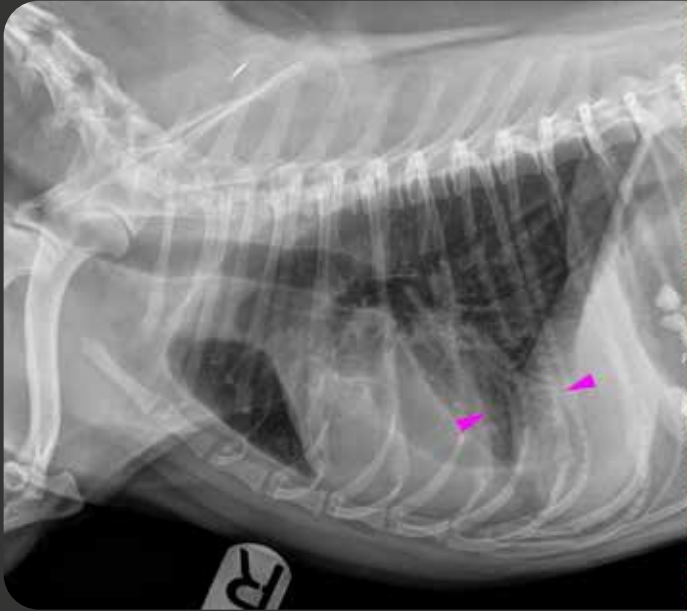
The heart is within normal size limits and no clear mediastinal pathology (including pneumomediastinum) is seen.

No traumatic thoracic wall injuries are identified – the diaphragm is partially obscured by the pleural effusion but no evidence of a loss of diaphragmatic integrity is seen.

The left 13th rib is vestigial – no further abnormalities of the included musculoskeletal structures are seen.

The stomach has a normal position and is mildly gas-distended. There are multiple small rounded 3-6mm mineralised opacities in the antrum but no larger antral foreign material is identified.





Conclusions:

- Marked peripharyngeal soft tissue swelling and emphysema consistent with the reported wound at the base of the tongue
 - Separation between the epihyoid and ceratohyoid bones confirms a hyoid apparatus fracture/disarticulation – this may result in laryngeal instability relative to the base of the skull
- Soft tissue swelling adjacent to one of the orbits, also likely traumatic in nature
- Mild pleural effusion (predominately left sided but with a trace right effusion also suspected) – haemothorax is considered the most likely diagnosis given the history of trauma, with differentials including early pyothorax, chylothorax or transudate
 - No clear thoracic wall trauma is seen
- Mild alveolar change in the left caudal lung lobe – pulmonary contusion is considered the most likely diagnosis, but differentials will include mild/early bronchopneumonia or aspiration pneumonia, or mild atelectasis associated with the pleural disease
 - Some reduced volume of the left lung is seen on the ventrodorsal, and this and the effusion are likely contributing to the increased opacity in the left hemithorax

- Multiple mineralised gastric foreign bodies – these may well be incidental (and some have already passed into the large intestine)

Additional comments:

The pharyngeal changes are consistent with the reported traumatic injury, and fracture/dislocation of the hyoid apparatus is present. The hyoid apparatus is a suspensory mechanism for the tongue and larynx. The presence of disarticulation may result in laryngeal collapse and severe dyspnoea.

- Surgical consultation is advised for this reason. It should be noted that in the circumstance of BDLI injuries, the crushing component can result in tissue morbidity that takes several days to declare.
- Further imaging may include CT of the head and neck and T-FAST may be considered to monitor the volume of pleural effusion.

Literature:

- Manchi, G., Brunnberg, M. M., Shahid, M., Al Aiyan, A., Brunnberg, L., & Stein, S. (2016). Larynx trauma and hyoid bone fracture after bite injury in dog: case report. *Frontiers in Veterinary Science*, 3, 64.



MSD ANIMAL HEALTH ANNOUNCES CIRCUMVENT® CML TAKES TOP S&P GLOBAL AWARD AS THE 2023 BEST NEW FOOD ANIMAL PRODUCT

THE AWARD MARKS THE 6TH YEAR IN A ROW FOR RECOGNITION IN THIS CATEGORY

MSD Animal Health, a division of Merck & Co., Inc., Rahway, N.J., USA (NYSE:MRK), today announced CIRCUMVENT® CML has been awarded the Best New Food Animal Product from S&P Global Animal Health. It is the first and only ready-to-use, single-dose intramuscular injectable vaccine against disease caused by Porcine Circovirus Types 2a and 2d, *Mycoplasma hyopneumoniae* and *Lawsonia intracellularis* in pigs, three weeks of age or older.

The award marks the sixth straight year for MSD Animal Health to be honored in this category. Past MSD Animal Health products that have been honored include the IDAL® portfolio technology, PORCILIS® Lawsonia intramuscular vaccine for piglets, NOBILIS® SALENVAC ETC, WHISPER® ON ARRIVAL and SENSEHUB® Feedlot. Additionally, MSD Animal Health was named Best Animal Health Company, North America in 2021.

“We are proud to continually be recognized as a leader in the animal health industry that brings together innovative solutions from our combined biopharmaceuticals and technology solutions portfolio to shape the future of animal health,” said Shannon Kellner, vice president, U.S. Livestock Business, MSD Animal Health. “Our people – from research and development to manufacturing to sales – continually strive to help our customers improve the health of their animals and bring efficiencies to their operations. CIRCUMVENT CML is another example of our pioneering science that will help the swine industry do just that.”

With CIRCUMVENT CML, veterinarians and producers have the convenience of vaccinating for three of the most important swine disease concerns, all in one bottle with no mixing or reconstituting. Also, the animals benefit from the three-way protection in one single vaccination.

“Porcine Circovirus Type 2 is one of the most common and economically damaging viruses in the swine industry,” said Jamie Lehman, D.V.M., swine technical services veterinarian, MSD Animal Health. “The disease remains an important pathogen of growing pigs worldwide. CIRCUMVENT CML delivers efficacy against three of the most commonly identified swine diseases in one bottle – and in one vaccination. There is currently no other available injectable vaccine that combines these three pathogens in one bottle.”

For the development of this novel vaccine, MSD Animal Health sought to understand the needs of the swine industry and then shape its research and development efforts over 10 years to provide effective solutions to meet those unmet needs.

The addition of CIRCUMVENT CML broadens the company’s swine portfolio, which also includes proven products, such as CIRCUMVENT PCV-M G2 and PORCILIS® Iteitis.

This product provides several benefits to swine producers, including:

- Reduced injections and reduced pig handling;
- Less waste, reduced shipments of products and reduced refrigeration storage space.
- The trusted antigens used in our existing products, CIRCUMVENT PCV-M G2 and PORCILIS® Iteitis, which are proven products in the industry that for years have protected swine from disease caused by PCV2, *Mycoplasma hyopneumoniae* and *Lawsonia intracellularis*.
- The trusted adjuvant used in our CIRCUMVENT PCV-M and PORCILIS Iteitis vaccines, Microsol Diluvac Forte®, enhances the immune response to the antigens and increases the duration of immunity.

“MSD Animal Health has continued its winning streak in the Best New Food Animal category by bringing differentiated products like this novel vaccine to the market. The company is continuing to build quite a reputation by winning this award multiple times, which is a testament to its innovation and customer focus within the industry,” said Joseph Harvey, head of S&P Global Animal Health. S&P Global provides essential financial information and analytics, including specific commodity coverage, to businesses globally.



Zinc: Plaque's natural enemy



BRUCE ADDISON, Veterinary Microbiologist • Addison Biological Laboratory, Inc.



"Plaque forms within 24 hours, calculus within 3 days and gingivitis begins as early as 2 weeks."

— WSAVA.org

Pet oral health care is an ongoing challenge for pet owners and veterinary teams. Periodontal disease is the number one health problem in small animal patients, according to the American Kennel Club.

By age 3, more than 80 percent of dogs and cats have some form of periodontal, or gum disease. Pet owner resistance to in-clinic dental procedures that involve x-rays and anesthesia is well known.

To optimize pet health, **the starting point for comprehensive oral care must be in the home** where bad breath is the primary warning sign. Most veterinary clinic personnel miss the opportunity to educate pet owners about daily oral care and promote in-home solutions for their pets.

*Quite simply,
"a chew alone
won't do."*



Working with natural zinc compounds, Addison Biological Laboratory pioneered the use of a natural, zinc-based compound that is safe for daily use, inexpensive, taste-free and provides excellent pet acceptance. The unique formula works to break down plaque on contact and can be used daily without brushing.

Addison's neutralized zinc is a combination of select amino acids and zinc. Taurine and zinc gluconate form a complex bond that inhibits the precipitation of zinc in the neutral pH (6.7 – 7.0) range. In this narrow pH range, an oral zinc preparation delivers increased bioavailability that ensures its duration of effect and efficacy.

"Zinc is well documented to tie up sulfur compounds in the oral cavity which are a primary cause of bad breath, the first signal of impending dental disease." — Bruce Addison, Veterinary Microbiologist, President and Founder

Putting zinc to work

New to the MAXI/GUARD® product family are MAXI/GUARD® Oral Cleansing Wipes. They provide a proprietary neutralized zinc oral care compound on a textured applicator wipe. They are recommended for daily in-home use.

MAXI/GUARD® Oral Cleansing Wipes

Features / Functions

- Taste free
- Oral product and applicator all-in-one
- Neutralized zinc formulation
- Quick and easy wipe application
- 100 textured wipes per large container

Benefits

- Increases pet acceptance
- No mess; more sanitary than a toothbrush
- Removes plaque; resolves offensive mouth odors
- Supports pet owner compliance
- Up to 100 days of effective daily oral care

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DENTAL MALOCCLUSIONS

Dr David E Clarke BVSc, Dipl. AVDC, Fellow AVD, MANZCVS

Registered Specialist, Veterinary Dentistry and Oral Surgery

www.davidxray.com

Dental malocclusions are a common condition observed in small animal practice. Whether the breeding of the ‘...oodles’, an increase in puppy visits to the practice or veterinarians paying more attention to oral examinations during vaccinations is the cause, they are definitely on the rise.

We are seeing a large increase in malocclusions in both general practice and referral practice. This article looks at jaw development and growth, and the types and identification of the common malocclusions in dogs. Next issue we will address how to treat as many can be treated in general practice, rather than referral to a specialist.

Jaw Development and Growth

Development of the gastrointestinal tract begins early in embryonic formation. Around Day 21 of development, brachial arches 1 and 11 are present. The paired maxillary and mandibular processes of brachial arch 1 are distinct by Day 23, when the former grow forward forming the mandible merging at the symphysis and the latter form the majority of the maxilla, incisive and palatal bones of the hard palate. By Day 25 the thickening of the oral epithelium forms 2 U-shaped structures that eventually become the

upper and lower dental lamina of the dental arches which house the teeth.

The maxillary processes and nasal processes form the palate. The area of the incisal bone (premaxilla) is formed by the nasal process, and until day 27 the nasal and oral cavity communicate. Cleft palates are commonly formed at this stage, between days 24 – 27 of gestation and may be either primary or secondary. A primary cleft palate occurs when the premaxilla, the bone which houses the incisor teeth, does not form properly. A secondary cleft palate occurs either uni- or bi-laterally when the palate does not fuse either in the midline or on one or both sides with the maxilla and all of the upper teeth other than the incisors. This can be genetic or developmental, and may be induced by the administration of corticosteroids at this age.

Regulation of bone growth is a complex phenomena dependent on genetic factors, hormonal factors, development of the teeth and different muscles activities (cheek, lips, tongue). Muscular and other soft tissue structures covering the jaw bones play a role in craniofacial growth. Muscles of the cheeks, the tongue, lip pressure, tooth interdigitation acts as lock between the upper and lower jaws, and as dogs keep their jaws closed at rest, all of these

factors play a significant role in jaw growth and the eventual malocclusion if it is to occur. In 1941, Stockard crossbred several breeds of dogs from different skull shapes, including dolichocephalic, mesocephalic and brachycephalic. By the F2 crosses there was a wide variety of skull shapes, from Class 2 to Class 3, and he found that as the muzzle became shorter, the teeth were not correspondingly reduced in size, resulting in crowding, rotation and misalignment occlusion, as the genes for the mesocephalic mandible were dominant in all the crossbreds. He also found that the ‘undershot’ jaw of the ‘bulldog’ type breed was due to chondrodystrophy of the cranium rather than an overgrowth of the mandible.

Growth in length of the mandible occurs in the rostral portion of the jaw until about 50 days, when growth changes to almost completely being derived from bone formation on the caudal border of the mandible. Dogs from 12 weeks of age show no growth of the mandible between the incisors and the first molar tooth, and no growth in length in the premolar region between 13 and 28 weeks of age. In the maxilla, length occurs via two sutures, the incisivo-maxillary suture rostrally and the palato-maxillary suture caudally, where the total length in adults is contributed 30%, 37% and 33% by the premaxillary,

maxillary and palatal bones respectively. Growth in width occurs at the intermaxillary suture.

Malocclusions result from both genetic and developmental factors. No technique or test is available in veterinary dentistry to rule out with certainty skeletal malocclusions. In humans, it is known that in order to modify inherited jaw growth, the functional disturbance must be of sufficient duration, generally greater than six hours. In veterinary patients, the functional disturbance most likely to induce malocclusions is persistent deciduous teeth as they modify the normal functional environment during eruption of the teeth. And persistent deciduous teeth are highly likely an inherited disorder. Another common occlusal malocclusion is a dental interlock, such as mandibular canine teeth being caught caudal to maxillary canines. It is unlikely that a puppy could have a normal inherited growth pattern and expect extraction of these teeth as a means of expressing genetic potential to result in normal occlusal length and pattern.

Skull and jaw types

There are three basic skull and jaw types.

1. **Dolichocephalic**
2. **Brachycephalic**
3. **Mesaticephalic**

Dolichocephalic are dogs such as the Greyhound, Doberman, Saluki and Borzoi, with a long, narrow face and a scissor bite, called 'normal' occlusion according to normal medical literature.

Brachycephalics are dogs such as the Boxer, Pug, Shih Tzu and Bulldog, with a short, broad face and a Class 3 (reverse scissor bite) malocclusion according to normal medical terminology and Persian and Exotic breed cats with a squashed in face.

Mesatocephalics are dogs such as the German Shepherd, Labrador Retriever, Spaniels, Terriers and Hounds, and most cats, with a jaw and face between the previous two and a scissor or normal occlusion.

The normal head type in the wolf or feral dogs is mesatocephalic. Of great importance is the symmetry of the head, the incisor relationship, the canine interlock and the number of teeth. The malocclusions are described as they relate to the normal occlusion, which has been classified as Class 0.

Basic veterinary occlusal classification

Class 0 (Normal occlusion)

1. **True normal (scissor bite)**

Class 1 malocclusion (Both jaw of proper length and teeth in malocclusion)

1. **Anterior cross bite**
2. **Posterior cross bite**
3. **Crowded or rotated teeth**

Class 2 malocclusion (Short mandible/long maxilla)

1. **Brachygnathism (mandibular)**
2. **Maxillary prognathism**

Class 3 malocclusion (Long mandible/short maxilla)

1. **Prognathism (mandibular)**
2. **Level bite**
3. **Unilateral (wry bite)**
4. **Brachycephalic**

Normal Occlusion

Class 0. Scissor bite.

1. Maxillary incisors overlap mandibular incisors, whose incisal edges rest on the lingual cingulum of the maxillary incisors.
2. The midline of the maxillary incisors is vertical to the midline of the mandibular incisors.
3. The mandibular canine occludes in the diastema and equal distance between the maxillary third incisor and canine teeth.
4. The mandibular premolar teeth are positioned directly between the two maxillary premolar teeth dorsal to it.
5. The maxillary fourth premolar tooth is positioned buccal to the mandibular first molar tooth.

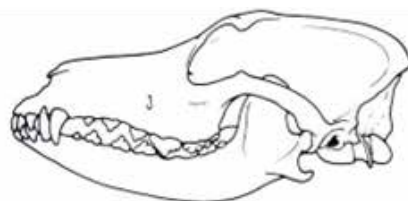


Figure 1. Normal, Class 0 bite and occlusion: lateral view of skull with diagrams representing the lip shapes. Adapted from *Handbook of Small Animal Dentistry*, Emily and Penman, Pergamon Press, 1990



Figure 2. Lateral view of the scissor bite in a German Shepherd dog.



Figure 3. Rostral view of the scissor bite in a German Shepherd dog.

Malocclusions

Class 1. Normal occlusion with one or more misplaced or rotated teeth.

Anterior (rostral) crossbite.

A commonly seen condition where one or more maxillary incisors are displaced lingual to the mandibular incisors and the rest of the teeth occlude normally. Generally results from retained deciduous teeth, therefore considered inherited.



Figure 4. Photograph of a dog with an anterior crossbite, which demonstrates displacement of the maxillary right and left 1st and 2nd incisors. The 1st incisors are lingual to the mandibular teeth and the 2nd incisors are level.



Figure 5. Orthodontic correction of anterior cross bite involving the incisor teeth using a palatal expansion device. The appliance is attached to the canine teeth and placed palatal to the incisors, so when the screw is turned, the rostral portion of the appliance moves forwards and tips the maxillary incisors into a normal scissor occlusion.

Crowded or rotated teeth.

Toy dog breeds often have crowding of their incisors whereby the brachycephalic breeds generally have crowding of their premolars.



Figure 6. Photograph of a dog with crowded and rotated maxillary premolar teeth. Recommended treatment is extraction of the rotated or misplaced teeth.

Caudal (posterior) crossbite.

Maxillary premolar or molar tooth / teeth are positioned lingual to mandibular counterparts. Seen in some dolichocephalic breeds such as the Borzoi, presumed to be an inherited disorder.



Figure 7. Photograph of a dog with a posterior crossbite, which demonstrates

the lingual occlusion of the maxillary 4th premolar tooth adjacent to the mandibular 1st molar tooth. Treatment depends on whether the teeth are contacting each other: if there is no trauma – treatment involves monitoring the patient; if there is trauma – recommended treatment is either crown reduction and direct pulp capping (where necessary) or extraction, as it is extremely difficult to orthodontically move the malpositioned teeth into a normal occlusion.

Base narrow canine teeth or lingually displaced canine teeth.

The mandibular canine teeth are displaced lingually or the mandible is narrow compared to normal occlusion and the maxilla. In both situations the cusps may occlude into the hard palate resulting in inflammation, ulceration or at worst an oro-nasal fistula. This is commonly seen in Bull Terrier and Staffordshire Bull Terrier breeds, as it was desirable to have a narrow mandible and as such breeders selected for such, often resulting in malposition of the mandibular canine teeth and trauma to the hard palate. Therefore this is considered genetic in origin.



Figure 8. Photograph of a dog with a lingually displaced mandibular canine tooth which is traumatizing the hard palate mucosa between the maxillary 3rd incisor and canine teeth.



Figure 9. Orthodontic correction of a lingually displaced mandibular canine tooth using a palatal incline plate. The metal appliance is attached to the maxillary canine teeth bilaterally and an angled incline is positioned in the diastema

between the 3rd incisor and canine so that the mandibular canine is forced laterally each time the patient closes its mouth by contact of the tip of the canine tooth along the incline. Treatment in a young dog, 10 – 18 months of age, usually results in a normal occlusion within 2 months.

Rostrally displaced maxillary canines

Maxillary canine teeth malpositioned rostrally can be secondary to eruption displacement secondary to persistent deciduous teeth in any breed but commonly observed in toy and small breed dogs and Persian cats. It is also considered to be dominant gene - genetic condition frequently seen in Shetland Sheepdog breed dogs.



Figure 10. Photograph demonstrating a rostral displaced maxillary left canine tooth.

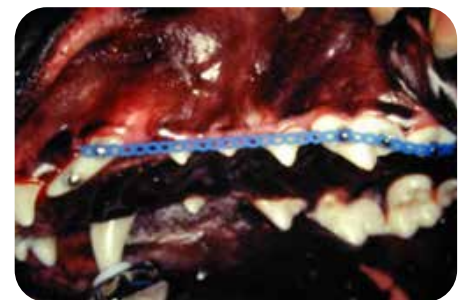


Figure 11. Orthodontic correction of a rostrally displaced maxillary canine tooth by elastic power chain and orthodontic brackets. The brackets are cemented to the buccal surface of the canine tooth and the 4th premolar and 1st molar teeth, the chain is placed under tension, which allows the canine to be tipped into normal occlusion. Treatment is dependent of having a solid anchor point and a periodontally healthy canine tooth and may take 4-6 months depending on the breed of dog or cat.

Class 2. Mandibular brachygnathism / maxillary prognathism.

Commonly the maxilla is elongated compared to the mandible, where the maxilla can be protruding or the mandible shortened. The maxillary incisors are positioned rostral to the mandibular incisors and the mandibular premolars / molars are positioned caudal to the normal relationship. Often referred to as

'overshot' or 'parrot mouth'. Is a genetic condition on the Rottweiler breed, but can be developmental caused by deciduous canine teeth interlocking into the hard palate.

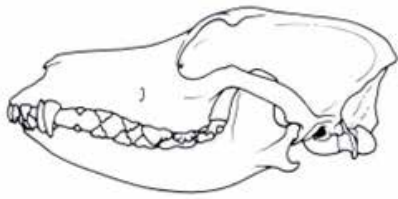


Figure 12. Brachygnathic, Class 2 bite and occlusion: lateral view of skull with diagrams representing the lip shapes. Adapted from Handbook of Small Animal Dentistry, Emily and Penman, Pergamon Press, 1990



Figure 13. Photograph demonstrating a Class 2 malocclusion in an 8 week old puppy dog which shows the deciduous mandibular canine teeth caudal to the maxillary canine teeth. It is highly likely that this dog will have a permanent Class 2 malocclusion, especially if it is a Rottweiler breed dog.



Figure 14. Photograph demonstrating the lateral view of the Class 2 malocclusion in an adult Rottweiler dog. Class 2 mandibular brachygnathism. Treatment involves either orthodontic correction to move the mandibular teeth laterally using an acrylic incline plate, extraction of the canine teeth; or crown reduction and direct pulp capping (as has been performed in this dog – note the shortening of the mandibular left canine tooth).

Class III. Mandibular prognathism / maxillary brachygnathism.

This is considered to be the 'normal bite' for the breeds such as the Boxer, Shih Tzu and Bulldog, but is due to breeder interference and breeding for head type rather than natural variation. A 'level bite' is a form of class 3 malocclusion, which is commonly seen in the Old English Sheepdog breed. The maxillary incisors are positioned caudal to the mandibular incisors and the mandibular premolars / molars are rostral (mesial) to the normal relationship.



Figure 15. Prognathic, Class 3 bite and occlusion: lateral view of skull with diagrams representing the lip shapes. Adapted from Handbook of Small Animal Dentistry, Emily and Penman, Pergamon Press, 1990



Figure 16. Photograph demonstrating lateral view of the Class 3 prognathic occlusion. Usually treatment is not required other than a good homecare regime to reduce plaque accumulation. Note an alloy crown has been placed on the mandibular canine tooth.



DR. KATRINA WARREN SHARES HER TEN TIPS FOR KEEPING YOUR PET COOL AND HYDRATED

As responsible pet owners, it is our duty to ensure the well-being of our furry friends, especially during hot weather. PetSafe®, Australia's favourite pet brand, is dedicated to promoting pet hydration through its annual Pet Hydration Awareness Campaign; on now through to end of February.

According to a recent survey conducted by PetSafe® with over 1,000 pet owners, 9 out of 10 prioritize their pets' needs during summer activities, ensuring that meals, hydration, and exercise remain unaffected. However, confusion often arises when it comes to keeping pets cool and properly

hydrated, with over half (59 percent) expressing uncertainty about their pets' specific water requirements.

In collaboration with veterinarian and media personality Dr Katrina Warren, PetSafe®ANZ is providing ten essential tips as part of this campaign to help prevent dehydration in our beloved pets.

"Addressing gaps in pet hydration knowledge is crucial to ensuring the safety and health of our pets," says Dr Katrina Warren. "It's important to remember that cats have a lower thirst drive compared to dogs, and their intake requirement is lower, which means they may not drink as much



water. Nonetheless, proper hydration is vital for their overall health and to prevent issues like urinary tract problems. Cats can concentrate their urine, so providing fresh, clean water in a quiet location is essential to encourage them to drink more."



HERE ARE DR KATRINA'S TEN TIPS TO KEEP YOUR PET COOL AND HYDRATED:

1. Always have water for your dog:

Whenever you venture outdoors with your canine companion, it's crucial to carry a portable water bowl. This ensures that your dog has easy access to hydration during walks, hikes, or trips. It's essential to avoid letting your dog drink seawater or water from dirty lakes to prevent potential health issues.

2. Shade outdoor water bowls:

When you place water bowls outside for your pets, make sure they are positioned in the shade throughout the day. The sun's movement can quickly heat up the water, making it undrinkable. By providing shade, you ensure that your pets can enjoy cool, refreshing water even on hot days.

3. Exercise with caution:

While it's important not to skip exercise altogether during hot weather, it's equally vital to exercise caution. Avoid walking your dog during peak temperatures, and always offer plenty of water breaks to prevent overheating and dehydration.

4. Provide cooling treats:

Consider enhancing your pet's hydration with cooling treats such as the Chilly Penguin stuffed with freezable treats. These special products not only help keep your dog refreshed but also provide mental and physical enrichment, making them a win-win for your furry friend.

5. Cats' have a lower thirst drive!

Keep in mind that cats have a lower thirst drive compared to dogs, which means they may not drink as much water. However, proper hydration is still crucial for their overall health and to prevent issues like urinary tract problems. Cats can concentrate their urine, so it's vital to provide fresh, clean water in a quiet location to encourage them to drink more.

6. Wet Food for Cats:

To increase your cat's moisture intake, consider incorporating some wet food into their diet. The higher moisture content in wet food can contribute significantly to their hydration, reducing the risk of urinary tract issues.

7. Running Water:

Many cats are drawn to running water, which is why they may enjoy drinking from the kitchen tap. To encourage your cat to stay hydrated, you can invest in a cat water fountain, providing a continuous source of fresh, flowing water. For dogs, you can achieve a similar effect by using a pet water fountain like the PetSafe® Butterfly Pet Fountain, which offers multiple free-falling water streams that naturally entice your dog to drink more.

8. Know Dehydration Symptoms:

It's crucial to familiarize yourself with common signs of dehydration in pets, including lethargy, loss of appetite, sunken eyes, dry mouth, and rigid skin. Keep an eye out for changes in your pet's urine colour and gum appearance, as these can also be indicators of dehydration.

9. Check your pet's hydration levels:

An easy way to assess your pet's hydration level is to gently pinch the skin on the back of their neck. If the skin takes time to revert to its usual shape, it may suggest that your dog is dehydrated. This simple test can be a helpful tool in monitoring your pet's hydration.

10. Monitor their water consumption:

In households with multiple pets, it can be challenging to gauge an individual pet's water consumption accurately. However, it's crucial to observe and track any changes in their drinking patterns. A decrease or increase in water intake may signal an underlying medical condition, warranting a prompt veterinary assessment. By staying vigilant, you can ensure your pets stay adequately hydrated and healthy.

BUCKLE UP YOUR FURRY CO-PILOT: ENSURING PET SAFETY ON THE GO!

Kurgo, a leading pet safety brand, announces the launch of its innovative "Safe Again" program in Australia. This exciting initiative coincides with National Pet Travel Safety Day, highlighting Kurgo's ongoing commitment to ensuring the safety of our furry companions during car journeys.

Sarah Ambler, Marketing Manager for Kurgo ANZ, shared her thoughts on the program: *"We all instinctively fasten our seatbelts when we get into a car, but the safety of our pets often goes overlooked. The truth is that unrestrained dogs in vehicles can pose serious risks to themselves and the driver and passengers. As a pioneer in dog safety solutions, we are dedicated to addressing this issue and have developed innovative measures to keep dogs safe during car rides."*

According to the pet safety advocacy group Bark Buckle UP, unrestrained pets can become dangerous projectiles during car accidents. For example, a pet weighing around 30kg (on average) in a car traveling at 60kph can become a 1,225kg projectile, putting both the pet and human passengers at risk.

With "Safe Again," Kurgo offers free replacements for dog car harnesses, regardless of the brand

Apart from the risk of injury during a collision, unrestrained pets can create various post-crash issues. They may hinder first responders, escape through broken windows, lead to secondary accidents or lost pets, and even cause distractions for drivers.

Kurgo's "Safe Again" program aims to tackle these challenges head-on. The program revolves around Kurgo's crash-tested dog car harnesses designed for dogs up to 35kg, compliant with the Motor Vehicle Safety Standard for child restraint systems. These **Enhanced Strength Tru-Fit Smart Harnesses** come with a lifetime warranty, ensuring a free replacement in case of any manufacturing defects.

Securing your pet in the car with Kurgo's harness is simple and hassle-free, with Kurgo offering easy-to-follow instructional videos to guide you through the process.

In addition to harnesses, Kurgo offers various products tailored to different needs, including booster seats for smaller dogs wanting to enjoy the view while securely fastened. These booster seats are crash-tested when used with a compatible harness, providing pet owners with peace of mind.

This National Pet Travel Safety Day, Kurgo's "Safe Again" program takes centre stage as a game-changer in pet safety. Just like child car seats, Kurgo understands the importance of replacing harnesses involved in accidents to ensure ongoing safety for your cherished pet.

With "Safe Again," Kurgo offers free replacements for dog car harnesses, regardless of the brand. Initiating the claim process is easy; contact Kurgo's dedicated Customer Care team at customercareau@kurgo.com. You'll be asked to fill out a Harness Accident Claim Form, providing contact details and information about your car accident. Once submitted, our team will promptly send you a replacement harness within 15 business days.

Rest assured that Kurgo remains steadfast in its commitment to your pet's safety on every journey. If you have more questions or need assistance with the program, don't hesitate to reach out to our Customer Care Team at customercareau@kurgo.com. Your pet's safety is our top priority.



The **MOST** complete
parasite protection,
all in one tasty chew



**NexGard
SPECTRA**
Let's go!

ANALYSIS OF 100 FASHION BRANDS EXPOSES CRITICAL GAPS AND POOR PERFORMERS IN ANIMAL WELFARE

THE THIRD EDITION OF FOUR PAWS ANIMAL WELFARE IN FASHION REPORT IN COLLABORATION WITH GOOD ON YOU HAS BEEN PUBLISHED TODAY, WITH 100 INTERNATIONAL COMPANIES ASSESSED AND RATED REGARDING THEIR POLICIES AND COMMITMENTS TO IMPROVE ANIMAL WELFARE AND REDUCE THE USE OF ANIMAL-DERIVED-MATERIALS

The report covers brands across nine market segments, including sports and fast fashion brands such as Nike and Zara. Of brands that use any animal-derived materials, outdoor brand Patagonia and luxury brand Stella McCartney came out on top for animal welfare, while luxury brands Max Mara, Prada and Hermès were among the brands that failed to deliver.

Global animal welfare organisation FOUR PAWS, whose Sydney-based research team led the project with Australia's Good On You, welcomes the progress by higher scoring brands but is critical of the lack of meaningful action from most brands. Considering that over five billion animals are mutilated and slaughtered for fashion each year, the need for the industry to cement animal welfare as a core responsibility is urgent.

While 72% of the selected brands have animal welfare policies, the report found a policy aimed only at the use of certified materials is not enough for brands to ensure excellent standards of animal welfare and reduce the climate impacts of fashion.

Ranny Rustam, Animal Welfare in Textiles Research Lead at FOUR PAWS, says: "While ensuring adequate care of animals used is crucial to any company's sustainability strategy, brands are still generally washing their hands of animals' needs, while others attempt to 'welfare-wash' over consumer concerns.

Thankfully some companies are increasingly demonstrating leadership in animal welfare, and our research in 2023 does bring some hope – but a monumental step forward by the industry is needed before consumers can start to feel confident about the welfare of animals used to make their cosy knits and down jackets."

Gordon Renouf, CEO of Good On You, says: "The key finding here is, an increasing number of brands are being incentivised to put ethics and sustainability at the heart of their business, thanks to consumers who are using their power to push the industry forward."

More kindness through refinement of materials

While certification rates for the world's supply of mohair (27%) and cashmere (7%) are on the rise, certified wool and down make up less than 5% of the global supply. While animal welfare certifications can help to mitigate the risks of one or more cruel practices in certified supply chains, e.g. mulesing in wool production and live plucking in down and feather production, most certifications are currently lacking in requirements which are crucial to animals' overall positive welfare state.

Rustam: "Using animal welfare certifications are a key way to ensure that the animal material supply chain is adequately traced, and in most cases the best way to ensure minimum animal welfare standards are met. This is the absolute minimum a brand should be doing. While 61% of rated brands are using at least one type of certified ADM, very few brands (9%) have a majority of their supply chains certified."

Underneath it all lies severe risks of public health and climate issues

The commercial exploitation and trade of wild animals brings incalculable risks to public health. Yet 18% of brands were found to still have used materials derived from wild animals. However, a noticeable decline in fur production and consumption is visible throughout the last years, resulting in three out of seven brands that used fur in 2021, going fur-free by now.

Moreover, the report also noted material production and processing of animal-derived materials are responsible for up to 70% of the fashion industry's carbon emissions, helping to fuel the climate crisis.

Rustam: "Having a clear vision, backed by measurable and time-bound goals, should guide brands in their commitment to refine, reduce, and replace the use of their materials. This involves certifying ADMs to recycled or welfare standards, lowering reliance on such materials, and investing in innovative alternatives. To achieve this, brands can collaborate with innovators to overcome adoption barriers and promote scalability, for a kinder and environmentally conscious future.



EXOTIC PEST FOUND IN MELBOURNE'S SOUTH-EAST

AGRICULTURE VICTORIA HAS URGED MELBURNIANS TO REPORT SUSPECTED EXOTIC PEST ANIMAL SIGHTINGS FOLLOWING THE DISCOVERY OF AN ASIAN BLACK-SPINED TOAD (*DUTTAPHRYNUS MELANOSTICTUS*).

Agriculture Victoria Biosecurity Manager Adam Kay said a resident noticed the toad during an afternoon walk along the Djerring Trail near Huntingdale train station.

'The resident collected the toad in a cup and took it home, then reported the discovery via our hotline as a suspected cane toad,' Mr Kay said.

'We have since confirmed the species as an Asian black-spined toad.' The toad was in poor condition when discovered and has since died and been appropriately disposed of to minimise biosecurity risks. This is the 18th Asian black-spined toad discovery reported to Agriculture Victoria since 1999.

'These toads are widespread and abundant throughout south-east Asia, including Bali, Thailand, and Papua New Guinea,' Mr Kay said.

'They do not naturally occur in the wild within Australia, however, the species is frequently intercepted at Australian borders in shipping containers and in personal luggage as stowaways.

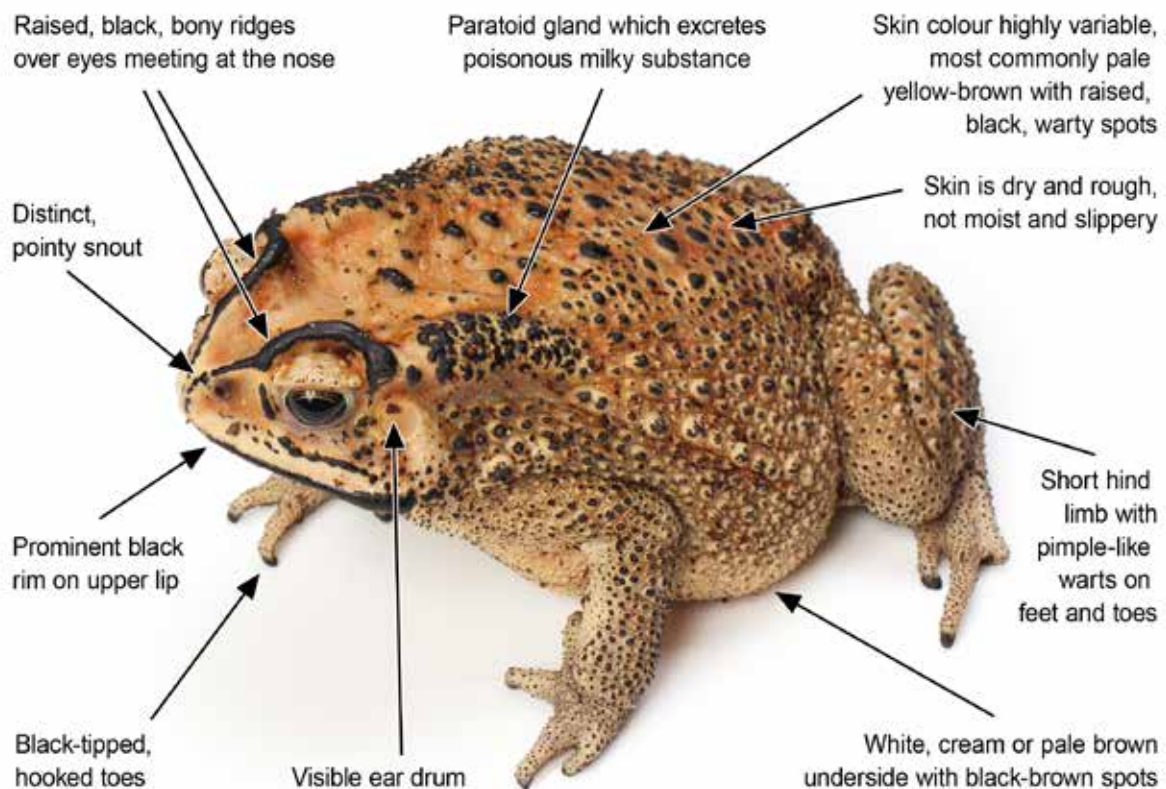
'They are poisonous, and compete with native species for food and habitat, with the potential to cause environmental impacts like those of the cane toad in Queensland.' Mr Kay said that Agriculture Victoria is now focused on determining how the animal came to be in Melbourne's south-east.

'This is a serious biosecurity threat, and we are seeking help from Huntingdale area residents and business owners who may have information on how this toad came to be in the community.'

Asian black-spined toads can breed up to twice each year, with females producing up to 40,000 eggs per cycle. They produce a poisonous milky substance much like cane toads and can cause serious illness or death in native species and domestic pets which may attempt to prey on them.

The milky toxin has a pungent odour and may cause itching in the nose and eyes when handled by humans. The consumption of Asian black-spined toad skin or eggs can cause serious illness or even death.

Asian black-spined toads are classified as prohibited pest animals under the Victorian Catchment and Land Protection Act 1994.



PIONEERING PET BEDS FOR ULTIMATE COMFORT: PATENTED PEACEFUL SLEEP SOLUTION

Sharing the bed with your pet can be a positive experience, but the environment and conditions (like your dog snoring and cycling in their sleep) may not be the best in supporting your pet's joints nor your slumber!

March is Sleep Awareness Month and STAN (Safe – Therapeutic – Australian - Non-toxic) Pet Beds, the world's first patented therapeutic, non-toxic bed for animals, is on a mission to give our four-legged friends the benefits of a safe, healthy snooze and pawrents a peaceful night's sleep! Studies show good quality sleep strengthens the immune system, supports recovery from injury and illness, and assists memory and brain function. Poor sleep, on the other hand, can lead to a host of health issues, such as restlessness, increased stress and anxiety, change in appetite and more. "As with humans, good sleep hygiene is also important for the health and wellbeing of our furry friends," says Michelle Cummins, founder of Australian-made STAN Pet Beds, the world's first pet bed patented as a therapeutic and post-op recovery tool.

Cummins has been studying canine sleep and natural health for more than 12 years, working with holistic animal practitioners and expanding her learnings in nutrition, toxicity and stress. She is also pursuing an international qualification in zoopharmacognacy, the study of animals self-selecting medicine in the wild. Cummins explains that our pets can have poor sleep for many reasons, such as stress and anxiety, pain and discomfort, digestive issues, illness, ageing and cognitive issues, and environmental factors (noise, temperature, bedding quality).

"While there are many factors that contribute to the quality of sleep our pets experience, *what they sleep on* has the most immediate impact," she says.



Photo Credit: Charles Deluvio

How can we help our dogs sleep better?

Cummins shares the following holistic strategies to help dogs sleep better:

- **Diet:** Feed your pet a **species-appropriate** balanced diet that supports their individual energy balance and digestive health.
- **Lifestyle adjustments** – Establish a consistent daily routine that aligns with natural circadian rhythms. This includes exposure to natural light, exercise and sleep schedules.
- **Exercise:** Engage your dog in regular exercise to help expend energy but avoid overstimulation close to bedtime.
- **Behavioural Modification:** Address any behavioral issues that may disrupt sleep, such as separation anxiety or fear-based reactions, through positive reinforcement training.

- **Environmental Factors:** Create a calm sleep environment for your dog. Ensure the sleeping area is comfortable, free from disruptions and maintained at an appropriate temperature. Provide bedding made with natural fibres, such as linen, organic cotton or hemp, is free of sleep disrupting toxins/chemicals and supports your individual pet's needs.
- **Light Control:** Limit exposure to artificial light, especially in the evening, as it can disrupt sleep patterns. Natural light during the day is beneficial.
- **Aromatherapy:** Certain essential oils (when used safely and under guidance) can promote relaxation. Lavender, chamomile or frankincense oils may be diffused in the dog's sleeping area.
- **Natural therapies:** Consider natural therapies that can promote good sleep hygiene, such herbal remedies, acupuncture, acupressure and massage.
- **Mindful Interaction:** Spend quality time with your pet, offering emotional support and companionship to reduce feelings of loneliness or anxiety.
- **Regular Check-Ups:** Schedule regular check-ups with your holistic vet to identify and address any issues before they lead to sleep disturbances.

** With supporting advice from Queensland holistic veterinarian Dr Kaori Kanemitsu.*

Mission to promote wellbeing with non-toxic bedding

Following a personal experience with poor pet sleep, Cummins wants to help give pets a good night's sleep for the benefit of their physical and mental health, wellbeing and behavioural balance.

Cummins developed the STAN Pet Bed product (previously Henry Hottie Bed) in 2012 for her beloved Tonkinese cat, Henry, who suffered from detrimental health issues. She saw how the bed provided Henry all round support in winter and summer, promoted healing and helped to improve his well-being and happiness.

After years of research and testing, STAN Pet Beds became patented in 2019 and today, the range caters to dogs of all breeds and sizes, designed for all life stages and is even used by horses! STAN Pet Beds will also relaunch cat beds with a new design.

Cummins guarantees the absence of toxic chemicals in STAN Pet Beds that are found in nearly all pet foam bedding.

"In an unregulated and over-saturated market of pet bedding, STAN Pet Beds stands alone in both benefit and safety for pets," she says.

"A STAN Pet Bed is designed to support deeper sleep [REM or Rapid Eye Movement, stage of sleep when most dreams happen], which is essential for physical restoration, brain function and emotional wellbeing.

"From the cushioning of the body by the dual layers within the mattress to the absence of neurotoxic, sleep disrupting chemicals, a STAN Pet Bed allows the body to fully relax and repair during periods of REM. The species-appropriate temperature achieved in the various sizes will either assist the body to warm down post-activity or support thermoregulation in older pets."

BOB & BELLA

Alicia Anderson has two Bullmastiffs, 5yo Bob and 7yo Bella who sadly suffers from severe arthritis in her hock and other health issues, which involved a large operation and has taken a toll on her.

Bella had broken sleep, “she would get up a lot, move around to other beds/carpets in the house trying to get comfortable. At night she would come into my bedroom and sleep next to the bed instead of staying on her bed,” says Alicia.

Bob and Bella are on good quality joint support supplements. However, arthritis injections for Bella didn't seem to help. “I started researching for beds that would give them support and found STAN Pet Beds to give them more comfort as they were getting older,” says Alicia.

“Bella is now nowhere near as stiff when she gets up in the morning. She also seeks out the STAN bed to sleep on, even if I'm not in the same room (she likes to be where I am). She stays on her bed all night without coming into my room.”



5yo Bob and 7yo Bella who sadly suffers from severe arthritis in her hock and other health issues

CASPER

Casper is a young and very active pooch, always on the go and full of energy! “He can run like a racehorse!” laughs owner Ayala Roozendaal. “Casper also loves the beach and swimming and socializing with other dogs and people. He's so good-natured!”

Casper likes to “play hard and then relax and sleep” with a habit of sprawling across Ayala's king-sized bed and allow for a restful night's sleep!

Ayala is a qualified Canine Myofunctional Therapist (specialised remedial message therapy) and understands the benefits of supporting Casper's young and agile body with a good bed and providing him with a restful sleep.

“I know how important the right supportive bed is for (particularly senior) dogs with joint problems and dogs recovering from orthopedic surgery,” she said. “It is important to me that my dog has a bed that is supportive of his joints and provides a restful sleep that allows the muscles and tissues to renew and repair. I also know that the quality of the sleep is just as important and makes for a calmer and happier dog.”

Safety - using organic, non-toxic materials in bedding – is also crucial for Ayala.

“I am aware of toxicity in so many pet beds out there and don't want my dog to be breathing in chemicals as he sleeps nor develop any skin issues from what he is laying on. Having done my own research, I want Casper to sleep on natural fibres, like linen, organic cotton or hemp, like STAN Pet Beds.”

Plus, Casper seems to prefer the comfort and temperature of his STAN Pet Bed more than Ayala's bed!

“It's a good thing – more space for me!” she laughs. “I know my bed is comfortable, but on a hot day I've seen Casper choose to lay in his STAN bed after briefly testing mine out. In fact, it was so noticeable to me that I messaged Michelle (STAN Pet Beds) to let her know that I could see for myself that the bed was providing a species appropriate temperature. We now have four STAN Pet Beds at home plus the travel bed. He likes to be wherever the family is, so whatever part of the house we are in he has somewhere to snooze.”



Casper is a young and very active pooch, always on the go and full of energy!



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CASE STUDY: 1YO MALE NEUTERED DALMATIAN WITH ACUTE COLLAPSE.

Species: Canine
Breed: Dalmatian
Sex: Male Neutered
Age: 1 Year Old

Clinical History:

Clinical examination reveals mild pyrexia (39.3°C), tachycardia and severe dehydration. He has a tense abdomen and mild ptyalism. Biochemistry and haematology show signs consistent with severe dehydration and nonspecific inflammation (moderate leucocytosis, moderate neutrophilia, monocytosis, eosinopaenia, lymphopaenia). Coagulation times are normal.

Anatomic regions: Abdomen

Details of study and technical comments:

Right and left lateral as well as ventrodorsal views of the abdomen.

Diagnostic interpretation:

ABDOMEN:

The small intestinal loops are gas distended, parallel to each other and in a mildly swirling pattern within the cranial half of the abdomen (lines); these segments are inappropriately distended (red arrowheads). The stomach and large intestine have normal appearance.

There is a moderate reduction in serosal contrast, mild abdominal distention and wispy appearance of the peritoneal fat (light blue arrows).

The liver and urinary bladder have normal appearance. The spleen and kidneys are not visible. The abdominal boundaries are normal apart from only 6 lumbar vertebrae (incidental).

Conclusions:

- Multiple small intestinal loops distended with gas and stacked with a swirling pattern. A segmental gastroenteropathy affecting a large portion of the jejunum is suspected. Differentials include mesenteric volvulus, segmental enteritis, or vascular compromise.
- Peritoneal effusion. This may be inflammatory or haemorrhagic



Additional comments:

Segmental enteropathies can represent multiple differentials however there are certain features of this case that raise concern for mesenteric volvulus: the appearance of the small intestine, peritoneal effusion and the collapse of the dog. This differential is critical to recognise as it is a time-critical surgical emergency. Segmental distention will progress as vascular injury becomes protracted but early intervention is critical. Computed tomography can be useful in confirming the suspicion if there is hesitation with exploratory laparotomy.

Outcome:

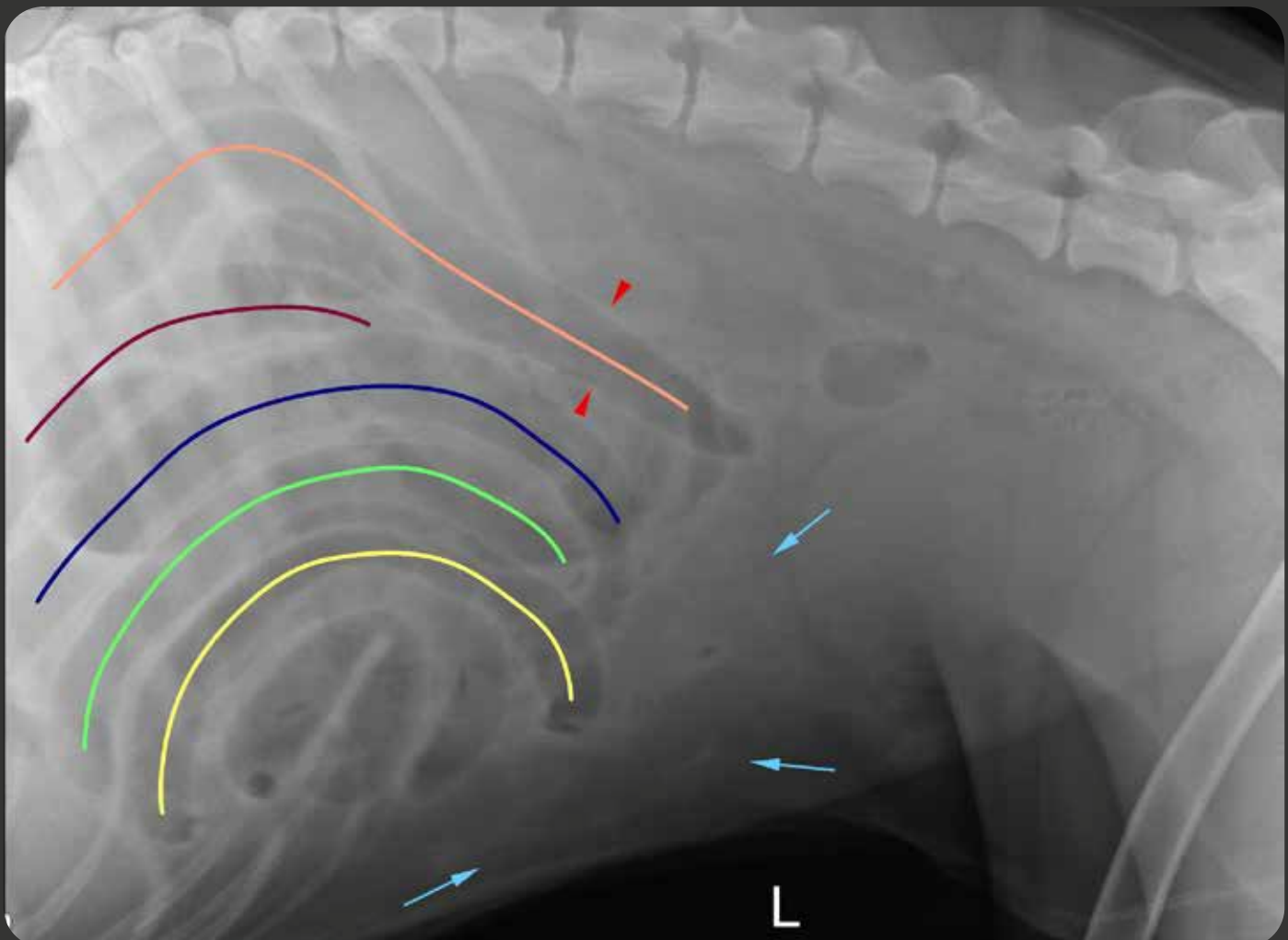
The patient was expedited to surgery. Intestinal congestion and inflammation were present. In excess of 2 L of abdominal fluid and black fibrous material was distributed throughout the peritoneum but concentrated in the mesentery. Perforation was not identified. Transient mesenteric torsion with tearing of the mesentery was concluded.



Literature:

Junius, G., Appeldoorn, A. M., & Schrauwen, E. (2004). Mesenteric volvulus in the dog: a retrospective study of 12 cases. *Journal of small animal practice*, 45(2), 104-107.

Cairo, J., Font, J., Gorraiz, J., Martin, N., & Pons, C. (1999). Intestinal volvulus in dogs: a study of four clinical cases. *Journal of Small Animal Practice*, 40(3), 136-140.



TOO LEFT BRAINED?

A VETERINARIAN'S ATTEMPT AT SKETCHING.

By Nigel Dougherty

BA (Zoology) MSc (Natural Resource Management) BVSc MVSc (Wildlife Health) MANZCVS (Zoo Medicine)

Wildlife and Emergency Veterinarian

As veterinarians, too few of us seem to afford ourselves the time to actually reflect on what it is that we work upon. We all too easily lose that sense of balance between doing the 'hard yakka' and appreciating the 'aesthetics' behind that biology. Life, after all, is quite simply nothing short of a miracle, in all its forms, and a healthy appreciation of such absolute marvel is *surely* one of the key contributors to what can be so incredibly fulfilling about our work.

One way that I have found to help me to wind down, reflect and to begin once again to 'see the detail' in such marvel is to attempt to sketch and draw animals. My subject matter usually involves wild animals (in line with my interest in living free and in conservation), but I have become a little bolder of late and even started to sketch and draw people. Like photography, though, drawing of 'still life' or 'portrait' may be limited in its depth of expression and it may not be the most creative form of art. The discipline of drawing, however, provides a perfectly balanced complement to the *science* of what we do, for nothing is taken for granted in the study of what is drawn. Nature's perfections are slowly noticed and certainly appreciated in such study of life and form.

Drawing and painting are skills that may come naturally to many, but they're something that I need to really work upon. When it comes to drawing life form, though, as a profession we have a big advantage over others: our working knowledge of anatomy is really useful. As accomplished artists out there will testify to, part of the skill when depicting animals is, in essence, about 'seeing' that anatomy with absolute subtlety and clarity (the hard



Hippo sketches. Partially a Rendition of Jonathan Kingdon's artwork. Reproduced with permission from the original artist in 'Wild Vet Walkabout'.

bit) and putting a convincing cover over the anatomy of your subject to create the illusion of 'three-dimensional' form (the bit that takes quite a bit of practice).

Some of my earlier drawings illustrate the struggle that I still have with anatomical reconstruction and portrayal of three-dimensional form in a two dimensional medium. I do think I'm improving, though and the first illustration of this is a rendition of a drawing of a newborn pygmy hippopotamus calf. The second is a rendition of a portrait of a young person of African descent.



Pygmy hippo calf. Rendition of Jonathan Kingdon's artwork. Reproduced with permission from the original artist in 'Wild Vet Walkabout'.



A young person of African origin

Neither of these attempts, however, seem to have captured the true character of these subjects and often this failure to capture such 'persona' happens with renditions or with drawings made from photographs - simply because of the artist's total disconnect with the subject being drawn.

Sketching 'live-time' obviously amounts to having a much more true connection with the subject. Detailed study of movement

and hours spent observing the behaviour of your subjects are needed to allow 'snapshots' of the true 'being' of an animal or animals to be captured in a sketch, drawing or painting, and this process from observation to translation onto paper is what gives me the most pleasure from the artwork I try to engage in. You really do pick up subtleties and notice things that would otherwise go unnoticed about the animals that you otherwise 'take for granted'.

One or two of my drawings, I hope, will be at least remotely illustrative of this process of portrayal and of the enhanced appreciation of the animals themselves that comes with drawing. The cheetah, for example, has always been the embodiment to me of grace, beauty, speed and survival skill. In my sketches of a cheetah, I have only been able to capture a mere fraction of these attributes, but doing the observation for the drawing has really heightened my sense of wonder at how these animals can attain such awesome sprinting speeds and how they can be so mesmerising when viewed up close. Likewise, the



Ostriches fighting

sketches of two ostriches fighting are my strongest memories of ostriches at their most awesome - memories of having been privileged enough to witness the power and turn of speed that they show out there in the wild.

Sketches and drawings of animals often don't depict those animals in isolation and it can also be fun to try to depict animals in their proper context - to understand the 'bigger picture' of that subject's true place in the world around it. The drawings of parrots against a forest backdrop (both of which are partially renditions) are one attempt of mine to illustrate the ideals of freedom and living free and much of the art



Cheetah sketches



Parrots in rainforest

of drawing is to contextualise your subject properly. The images of those parrots still burn into my mind and so remind of the travesty of the pet trade and the madness associated with the keeping of 'wild instincts' in captivity.

Creating the impression of form is really just the 'technical' bit. The 'art' in drawing is indeed about bringing your subject to life and capturing their very essence on paper. The featured 'collage' of sketches of different animals are my kind of attempts to try to 'snapshot' some of those 'fundamentals'.



Sketches on animal in action. Some are renditions of Jonathan Kingdon's artwork. Reproduced with permission from the original artist in 'Wild Vet Walkabout'

To capture character properly, almost invariably the key is in bringing the eyes of the subject to life by imbuing them with the essence of their true expression. Once this is done, the rest of any drawing work somehow seems to fall so much more easily into place. The corollary: fail to get this right and the rest of the drawing usually loses its strength of impression – although there are notable



Chimpanzee sketch.

exceptions. In the sketch I have attempted of a chimpanzee, for example, the form has not been perfectly depicted, but the expression in the eyes does at least do justice to what you see when you make eye contact with one of these most charismatic of birds.

Of all the forms of drawing, it is 'speed sketching' that remains my favourite form of drawing for this is the form that would be applied in the note-making of the classic natural historians in their studies. Many of my speed sketches somehow seem to have taken on a slightly 'caricature' type of form in my end product and I am not sure why this is the case. The sketch of a young kiwi is a case in point, but it is at least a beginning and I look forward to developing this skill further.



Kiwi chick caricature. Reproduced from 'Wild Vet Walkabout'

It is one of my ultimate of ambitions to be able to master such a skill with the capability of the likes of Jonathan Kingdon, an evolutionary biologist and accomplished artist of such artistic skill and repute. Jonathan is a person who has inspired me more than any other by showcasing what can be gained from the marriage of art and science. I refer you to his various works, such as his illustrated Atlases of African mammals, just to see absolute mastery in action.

In our line of work, there is of course already plenty of marvel so readily apparent in

the science. Just look at the ontogeny and physiology of what we deal with,

and it is easy to see why 'fixing the car whilst the engine is running' adds such a dimension of challenge to the applied art of medicine. Engaging in more traditional forms of art, nevertheless, really does afford you the time *and discipline* to become much more observant – to see the detail, to ask the deeper questions and above all, to appreciate the marvel. It really can pay dividends to encourage the left and the right brain to work together synergistically. After all, just take a look at Leonardo da Vinci's studies in both the biological and engineering realms, for they



West African animals and plants

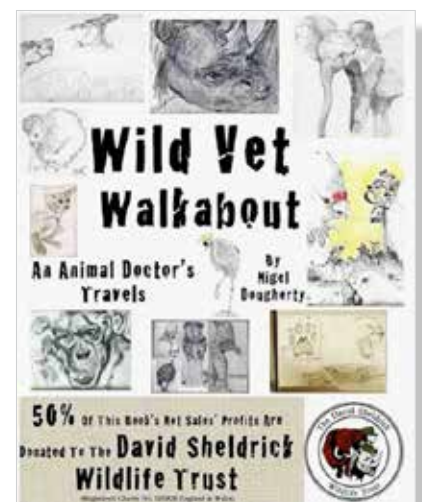
surely must remain as the most enduring and outstanding example of how study in illustration and study of function can really catapult our understanding in the applied sciences. It's not surprising this is the case, really, since our brains actually think predominantly in 'picture' rather than in abstract form.

Acknowledgements: I am indebted to *Jonathan Kingdon* for the tremendous inspiration he has been to me. This article was first published by the *UK Veterinary Times* (Veterinary Business Development, VBD Ltd). I gratefully acknowledge and thank VBD for granting permission for its republication.

Nigel Dougherty is a Kenya and New Zealand citizen. He is the author of **WILD VET WALKABOUT** - an illustrated veterinary travelogue available from Amazon. Half the book's sales' profits are donated to support the awesome wildlife veterinary work being done by the David Sheldrick Wildlife Trust

www.sheldrickwildlifetrust.org

AUTHOR BIOGRAPHY:



LET'S GET A WOOF WOOF FOR THE 2024 AUSTRALIAN DOG OF THE YEAR!

NOMINATIONS FOR AUSTRALIAN DOG OF THE YEAR 2025 ARE OPEN NOW.

PAW-STRALIANS RECOGNISED FOR INSPIRING AND MAKING AN IMPACT IN COMMUNITIES NATIONWIDE

It's not only humans being recognised for their outstanding achievements. Dogs are remarkable, inspiring and make a profound impact on society, too!

From Medical Assistance and Therapy Dogs to Conservation Detection and Palliative Care Dogs (and every honourable pooch in between), the **Puppy Tales Australian Dog of the Year** and **People's Choice Awards** recognise canine companions that represent the essence of the Australian doggo - love, courage, inspiration, assistance and fur-iendship.

"In its fourth year, the Puppy Tales Australian Dog of the Year Awards reminds us yet again how incredible dogs are!" said Kerry Martin, international award-winning pet photographer, author and founder of Puppy Tales, an online portal aimed at helping pet owners make the most of life with their dogs. "We see how ordinary fur-citizens from around Australia have helped their people, made a difference to others and be outstanding Paw-stralians in the communities that they live in."

The **Puppy Tales Australian Dog of the Year** is Kali the German Shepherd and the **People's Choice Award** recipient is Heidi the Australian Cattle Dog x Koolie.

AUSTRALIAN DOG OF THE YEAR:

Kali, German Shepherd, VIC

'The Gentle, Trusted Therapy Dog'

Chosen Charity: Animal Aid

Almost 12yo Kali has worked with Sharyn Thompson for nearly 11 years as a Therapy Dog, helping children with literacy needs via Story Dogs Australia, supporting staff and patients in the Emergency Department, Cancer Care and the Ambulance Bay of Latrobe Regional Hospital and providing a furry shoulder to cry on in the 2020 bushfires in East Gippsland.

"When we first got there, I was putting the vest on Kali and a gentleman came up to

us and asked, 'Can I pat your dog?' I said 'Of course, that's what she is there for.' He buried his face in her fur and cried. After a while, he said thank you and left. I went to sign in, in tears," said Sharyn.

Kali changed the life of a young girl who had a phobia of dogs. She was so scared of dogs that she couldn't even get out of the car. Six weeks later, she was happily



Winner-Australian Dog of the Year 2024 Finalist Kali

walking beside Kali and playing recall with her at the park! Kali represents DOGS Victoria at pet events and presentations, such as Melbourne University Medical Students' information sessions. She also attended Parliament House for the Domestic Animals Amendment (Puppy Farms and Pet Shops) Bill 2016 hearings.

Kerry said, "Kali's nomination stood out in many ways. Over a decade, Kali has done a lot to contribute to communities everywhere, from the Gippsland bushfires to Parliament to hospitals, schools and more. Her nomination was also uniquely written from Kali's perspective."

PEOPLE'S CHOICE AWARD

Heidi, Australian Cattle Dog x Koolie, VIC

'A Heart Dog Making A Difference'

Chosen Charity: Domestic Animal Rescue & Education (D.A.R.E Rescue)

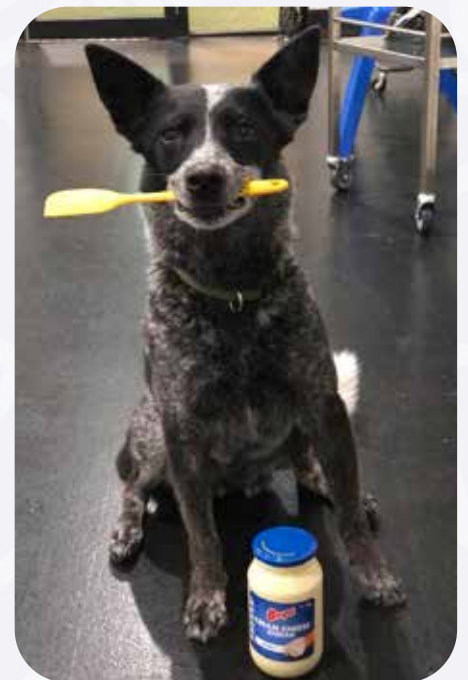
Heidi is 13.5 years young and Cathy James' dearest friend, that one-in-a-lifetime Heart Dog. Heidi has numerous championship titles with Dogs Australia and lives to make people happy, comforting them in times of need.

Cathy's dad had extreme dementia and when he came home from the hospital for palliative care, Heidi was his constant companion.

"Heidi was unbelievable, not leaving dad's side in his last days. She plopped herself beside him and did not move, even when she got whacked by dad's hand (by accident). His hands would stop and rest on her. She calmed him. It was during COVID (lock down) and nobody could visit. Heidi was dad's constant companion and attended his funeral," said Cathy.

Sadly, Heidi has cancer and nearly died while having chemotherapy.

"Heidi is a survivor, the epitome of the classic Aussie Battler," says Cathy. "She is ballzy, stoic, headstrong, so incredibly loving and loved beyond life itself. Anyone who meets Heidi knows there's something



Peoples Choice - Australian Dog of the Year 2024 Finalist - Heidi

incredibly special about her. Heidi and I live for each other. She is the dearest friend I will ever have."

Kerry said, "The decision (for People's Choice Award) is out of my control, but I'm thrilled for Heidi! She's a rescue that's gone to do some amazing things in the dog world but also helped her human and her dad in very difficult circumstances."

PET CIRCLE PAWS-ITIVE CHANGE AWARD

A bonus prize – the **Pet Circle Paws-itive Change Award** – goes to **Nessie** for her extraordinary conservation detection work to save endangered wildlife in South Australia.



Pawstive Change - Australian Australian Dog of the Year 2024 Finalist - Nessie

Award judge and lead vet at Pet Circle, Dr Belinda Stancombe, said, "Nessie is absolutely pawsome! She's not just a canine crusader safeguarding endangered Hooded Plovers and Pygmy Blue Tongue lizards, but she is a Search and Rescue pro, tracking down missing humans and dogs, all while being the heart and soul of the volunteer team. Nessie, is the tail-wagging hero we all need and why we chose her for the Pet Circle Paws-itive Change Award."

SPECIAL MENTIONS

The Puppy Tales team found all the finalists and many other nominations to be amazing dogs but would like to give a Special Mention to finalists Bella and Elkana Champ.

"Bella's 16 years of service as a Search and Rescue dog is a phenomenal contribution. Search and Rescue is a difficult job for dog and handler and Bella has found and given closure to so many people and families," Kerry said. "Elkana Champ is a Champ! He's had a broad range of achievements as a dog sports champion, a therapy dog and had a wonderful role in the life of his human, children, assisted living and others."

Amid exceptional entries, selecting a



Special Mention - Australian Australian Dog of the Year 2024 Finalist - Bella

winner proved challenging for the Puppy Tales team, "for each Finalist is unique and makes the world a better place," said Kerry.

"We celebrate these amazing dogs who've been a support, best friend and true companion to their people and communities. They may not have an incredible talent, but there's no doubt they have all changed the lives of humans. Every dog is a winner!"



Special Mention - Australian Australian Dog of the Year 2024 Finalist - Elkana Champ

PRIZES AND DONATIONS TO CHARITIES

Winners, nominees and voters received prizes worth more than \$10,000 including \$1,000 donation by Puppy Tales to the Winner's preferred charity and \$250 to the People's Choice's nominated charity. Ten Voters in the People's Choice Prize Draw also received a \$450 Puppy Tales Photography Gift Card.

Puppy Tales is thrilled and thankful to Pet Circle for gifting \$250 to the Winner, \$100 to the People's Choice recipient and \$100 to the 'Pet Circle Paws-itive Change Award' recipient, Nessie.

You can read about the WINNERS here and other dogs selected in an incredible Finalist panel here.



NOMINATIONS FOR AUSTRALIAN DOG OF THE YEAR 2025 ARE OPEN NOW.

<https://puppytales.com.au/australian-dog-of-the-year/>



AUSTRALIAN DOG OF THE YEAR FINALISTS 2024

BOTTLENECKS AND BEEHIVES: HOW AN INVASIVE BEE COLONY DEFIED GENETIC EXPECTATIONS

ADAPTABILITY DESPITE LOW GENETIC DIVERSITY COULD BE A GOOD SIGN FOR THREATENED SPECIES

Nest of invasive *Apis cerana* in Cairns, North Queensland. Photo by Dr Ros Gloag, 2016

For more than a decade, invasive Asian honeybees have defied evolutionary expectations and established a thriving population in North Queensland, much to the annoyance of the honey industry and biosecurity officials. Research published today in *Current Biology* has shown the species, *Apis cerana*, has overcome what is known as a genetic bottleneck to grow from a single swarm into a population of more than 10,000 colonies over a 10,000 square kilometre area – which is about the size of Greater Sydney.

Co-lead author Dr Rosalyn Gloag from the University of Sydney School of Life and Environmental Sciences said: “Our study of this bee population shows that some species can quickly adjust to new environments despite starting with very low genetic diversity relative to their native-range populations.”

Dr Gloag said that high genetic diversity is generally assumed to be important for a population to quickly adapt to changing environmental conditions, such as when a species is translocated or experiences rapid environmental change caused by natural or climate change disasters.

“However, we have shown that this invasive population of honeybees has rapidly adapted since its arrival, despite having suffered a steep loss in genetic diversity,” she said. The research team highlight the importance of this case study for understanding population resilience in general.

“This is even more important as we observe many species dealing with anthropogenic climate change,” Dr Gloag said. Studying the invasive population in Queensland gave the research team a rare complete genetic timeline of a natural invasion, beginning from soon after the bees arrived.

The arrival of the colony in 2007, likely from Papua New Guinea, was of concern to Australian biosecurity because of the parasites the bees can carry. Ultimately these bees were found not to be carrying the most feared of its parasites, the varroa mite, which has since arrived in Australia by an unknown route, threatening the domestic honey industry.

“We were lucky to have a complete sample timeline of this invasive population thanks to the incredible efforts of the Queensland Department of Agriculture and Fisheries, which sampled the population extensively during the early years of the incursion as part of an eradication attempt,” Dr Gloag said.

“Although that attempt was unsuccessful, the biological material collected has been incredibly valuable for understanding how these invasions proceed. And that in turn helps us prepare better for future invasions,” she said.

Access to this comprehensive sample set allowed the scientists to

re-sequence entire genomes of 118 individual bees collected over 10 years. “We could essentially observe natural selection acting over time in a population that started with low genetic diversity,” Dr Gloag said. “From this unique vantage point, we could see that selection was acting on the variation in genomes that had arrived with the handful of original bees. It wasn’t variation that arose later by mutations.

“In other words, some species with very low genetic diversity can adapt very quickly,” she said. “While this might be bad news for environments coping with newly arrived invasive species, it’s potentially good news for populations that have temporary crashes in the face of climate change or other natural or human-induced disasters, such as bushfires.”

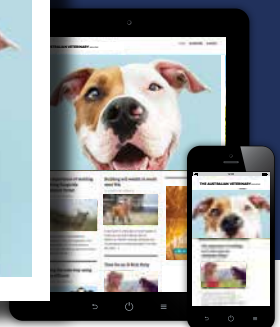
The study was done in collaboration with scientists at York University (Canada), IPB University (Indonesia), Bandung Institute of Technology (Indonesia) and the CSIRO (Australia).



Dr Ros Gloag holding nest of a native bee species, *Tetragonula carbonaria*.



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ROMA VETERINARY CLINIC AND CHARLEVILLE VET SURGERY JOINS CALLS FOR VETERINARY STUDENT DEBT SUPPORT

Dr Will Nason from Roma Veterinary Clinic and Dr Courtney Scott from Charleville Vet Surgery are calling on Senator for Queensland and Minister for Agriculture Murray Watt to take urgent action to address the veterinary workforce shortage in rural Queensland.

The Roma Veterinary Clinic employs nine vets and Charleville Vet Surgery employs three fulltime vets, together supports the community in a region much larger than Tasmania.

“We have been told time and time again by the Government that veterinarians are important – but we are yet to see any policies that reflect that position.”

*Dr Diana Barker,
Australian Veterinary Association President*

Veterinary clinics across Australia are closing down due to workforce shortages, and employers are seeking Government action. Without these veterinarians and clinics, there would be significant impacts on the state’s capacity in disease response.

“Two thirds of our work is in herd health and disease surveillance, but we’re just stretched too thin,” said Dr Nason, “if we could find the vets, there is enough demand to easily expand our vet workforce by 50%.”

“We’re recruiting at the moment and could take two more vets, but it will likely be well into 2024 before we find a vet who is willing to make the move out west,” said Dr Scott.

Australian Veterinary Association President, Dr Diana Barker, said more needed to be done by the Australian Government and called for a rural HELP Forgiveness Scheme to assist.

“Demand for veterinary services in our communities continues to grow, but if we don’t support the workforce we could see the entire profession collapse,” Dr Barker said.

“Rural and regional Queensland has a rich and vibrant agriculture sector that relies on veterinary services to ensure animals are healthy and disease-free.

“But that is at risk without urgent assistance from the Government.

“We have been told time and time again by the Government that veterinarians are important – but we are yet to see any policies that reflect that position.”

Dr Barker said that in 2022, the gross value of livestock was approximately \$35 billion, of which \$15.3 billion was from the cattle industry. The HELP Forgiveness Scheme would cost just \$4.8 million a year for four years, and wipe the HELP debt of 80 graduates each year.

“We have asked Education Minister Jason Clare to commit to a rural HELP Forgiveness Scheme but he has deferred any decisions on this until 2025,” Dr Barker said.

“That is too late – our regional communities need vets now.

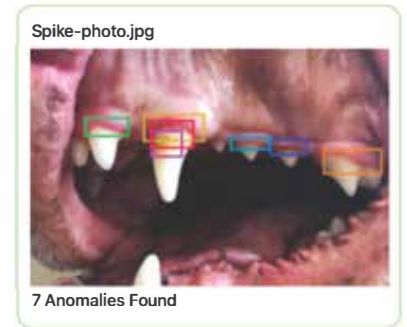
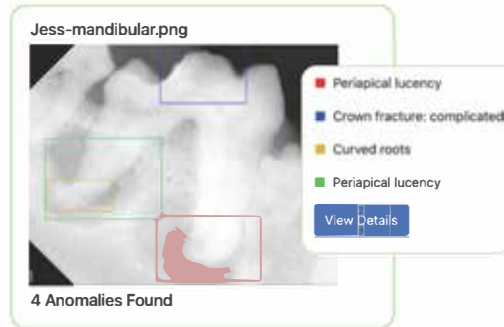
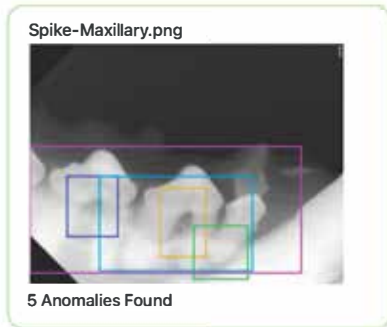
“That’s why we are calling on Senator for Queensland and Minister for Agriculture Murray Watt to take action and ensure Queenslanders can continue to access the essential services provided by vets.”





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