

THE AUSTRALIAN VETERINARIAN MAGAZINE

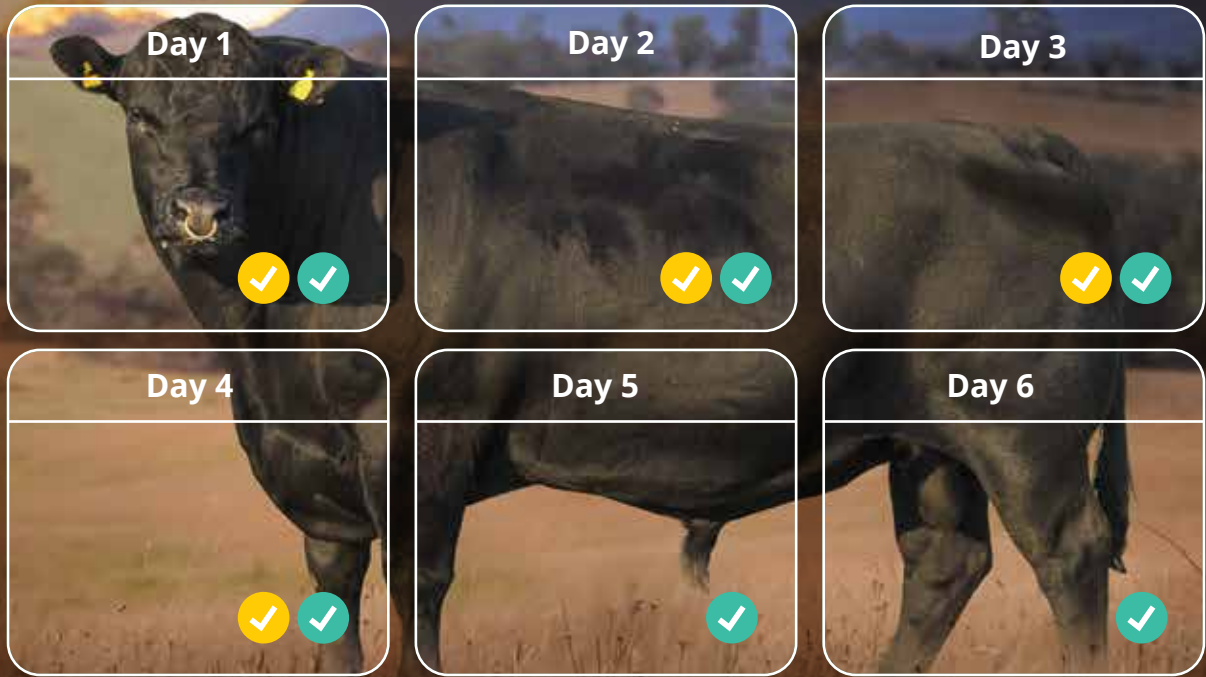
Dog parasite is developing resistance to treatments

Australia's most popular pooch

2021 Companion Animal Rescue Awards



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2021 COMPANION ANIMAL RESCUE AWARDS

In another year that has been very challenging for rescue groups and animal shelters across the country, the Pet Insurance Australia Companion Animal Rescue Awards is thrilled to announce the winners for 2021.

The Rescue Awards is a national program that celebrates and recognises achievements in rescue, sheltering, rehabilitation and rehoming of companion animals Australia-wide. The program is founded by Cathy Beer, professional dog trainer and pet adoption advocate from Pets4Life, an independent education resource for cat and dog guardians.

“The Rescue Awards has been very competitive with outstanding entries across 10 categories, which made it very challenging for the judges!” said Cathy. “Our amazing winners demonstrated excellence and innovation in their approach to improving the lives of companion animals during these difficult times.”

Following the announcement of the Finalists, one winner from each category was selected by an expert panel of 21 Judges at a virtual Rescue Awards Ceremony.

The People’s Rescue Story and Foster Carer Story award categories received hundreds of entries from Aussie pet guardians who shared their incredible, heart-warming stories about pet adoption and

fostering. This year the entries included a rescue chicken, rabbits, a guinea pig, a snake as well as many cats and dogs who have found their forever homes.

Cathy thanked Supporters for making the Rescue Awards possible by donating exciting prizes and acknowledged the great efforts of rescue groups, animal shelters, companion animal welfare organisations and thousands of volunteers across the country, especially during extraordinary and unprecedented pandemic times.

Rescue Awards Ambassador Lara Shannon, certified dog trainer, animal welfare advocate, author of “Eat, Play Love your dog” and “World of Dogs”, and Host of Channel 10’s Pooches at Play, congratulated the winners and thanked rescue organisations and their volunteers for helping surrendered and abandoned pets get a second chance in a loving home.

Image right: Cathy Beer, Founder of the Pet Insurance Australia Companion Animal rescue Awards and rescue pet Twinkle. Jo Lyons Photography



2021 FINALISTS AND WINNERS

Outstanding Rescue Group Finalists:

Forever Friends Animal Rescue, Hunter Animal Rescue, Maggie's Rescue Co-operative, The Rabbit Sanctuary.

Winner: Forever Friends Animal Rescue

Outstanding New Rescue Group:

Central Queensland Animal Society Inc, I Want a Greyhound (IWaG)

Winner: Central Queensland Animal Society

Outstanding Animal Shelter:

Central Coast Animal Care Facility, Greyhound Rescue, Just Cats, Rachie's Retirement Home

Winner: Rachie's Retirement Home

Outstanding Council Animal Shelter:

Winner: Ballarat Animal Shelter

Innovation in Companion Animal Welfare and Management:

Mobile Companion Animal Shelter for Emergency Evacuation, Pet Medical Crisis, The Rainbow Paws Program

Winner: City of Launceston Council's Mobile

Community Education and/or Outreach

Program: AWL NSW Mobile Truck, RSPCA NSW Safe Families, SCAR Community Outreach Program, West Cairns Management Program

Winner: West Cairns Management Program

Volunteer of the Year:

Alison Dower (Rachie's Retirement Home), Kaye Cromie (Lort Smith), Lachlan Barnard (Forever Friends Animal Rescue), Louise Stott (RSPCA VIC), Melissa Penn (Sydney Dogs and Cats Home), Paula Oberosler (Greyhound Rescue) **Winner:** Lachlan Barnard from Forever Friends Animal Rescue

Refuel Creative Digital Marketing: Greyhound Rescue, Rachie's Retirement Home

Winner: Greyhound Rescue NSW

People's Rescue Story: View the finalists on the following page.

Winner: Story: 'Bella and Mark', (Mr Mark Bent)

Foster Carer Story: View the finalists on the following page.

Winner: 'Macy and Rosalinda', Mrs. Rosalinda Lowry

Plus a Special Foster Carer Award:

Kaylee and Charmane (WA)

For more information visit www.rescueawards.com.au

PEOPLE'S RESCUE FINALISTS



MR PINK was living with 29 other felines in a car with his two owners who had lost their housing. He had to have most of his teeth removed due to infected gums. He is extremely vocal and snorty and behaves more like a dog really. We absolutely adore him and his kooky ways!



HARRY is paralysed in the back legs. We bought him a cart but he still tries to stand. Harry is the most beautiful fur-baby one could wish for. He is so lovable, loyal and has a wonderful nature. He has given us so much love and happiness despite the hard effort involved with him, but he is totally worth it.



FRECKLE fell out of a chicken slaughter truck at 100km/h and was badly damaged. The vet patched her up, best he could, but said she wouldn't last the night. Well she did! She gave our family the "sunshine" we so needed, to get us through lockdown. She brightened every single day.



EL DIABLO was born into a hoarder home with 20+ cats, was neglected and aggressive. She was rescued and put into care at the AWL, where she was kept isolated due to her poor temperament. My fiancé and I often visit the AWL to donate food and we instantly fell in love! We couldn't imagine life without her.



BUDDY. It was love at first sight when we met our boy. Once, we had an unwelcome visitor and Buddy blocked me from him. Turns out the man had stolen a car, was on drugs and running from police! Buddy has turned out to be the loveliest, most protective dog and it was meant to be!



VENUS. I have 2 Autistic kids, and we visited RSPCA to find a pet. Venus played with the kids and I have never seen my youngest light up the way he did. She senses meltdowns and will encourage the kids to pat her to help calm them. She's my sidekick, can't imagine life without her.



DAVID had already been through 5 homes and was very timid. He was terrified of our other guinea pigs. One day we found our pet rat Darwin sleeping next to him. Since moving him into the rat cage he's gone from being scared of everything to being a very happy, vocal piggie with lots of love to give.



QUEENIE was found in a backyard suffering from neglect. Her coat was severely matted and her skin was bleeding. She's still very timid but we just want her to be happy. I chose Queenie because out of all my buns she was the one in need of someone who cared.



Without **PANDA AND JETHRO**, I can honestly say I would not be here today. I have PTSD, depression, anxiety, nightmares, survivors guilt and adjustment disorder from 25 1/2 years service in Army and 4 wars. Panda and Jethro are very in tune with me and my needs.



BELLA came to me at 7 yrs old and was severely underweight, had health issues and was not used to eating proper food. It's beautiful to see how she has transformed into a happy, loving and loyal companion. With me being disabled and living alone Bella has given me the motivation to push forward & provided me with unconditional love.

FOSTER CARER FINALISTS



SHAKEY came into my care with severe cat flu and Cerebellar Atrophy. The vet suggested that I put him down, but watching this little kitten, I knew he had an extreme desire to live. Recently, I have been struggling with depression and watching this dear little fellow fight so hard has definitely put things into perspective.



RAVENPAW. The day he came into my care, he displayed neurological damage and would sleep around 20 hours a day. I slowly began to hand feed him and get him to trust me and always made sure to say his name and stroke him gently. He made me realise how patience and a kind hand can go a long way.



KAYLEE. After fostering over 65 Dogs and Puppies, Kaylee came into our family from a rough background. We all fell in love with her as she began to open up. Snuggling in for a cuddle she knew she was safe. After months of training and love, we decided we couldn't let her go so we adopted her.



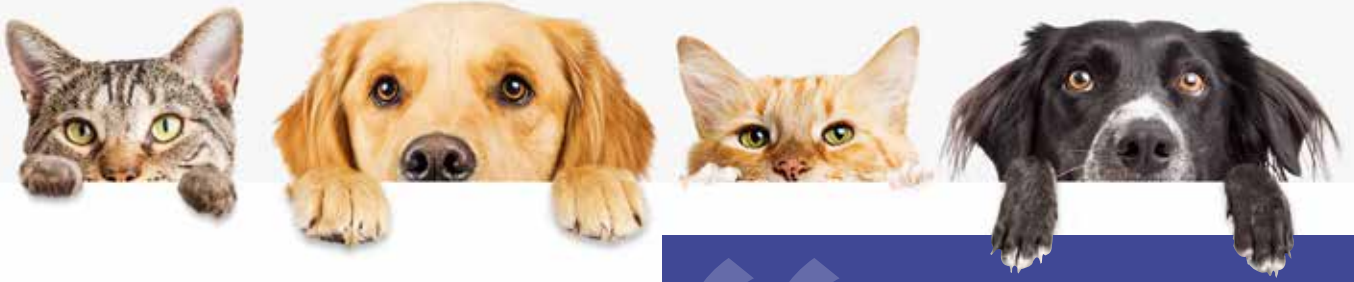
MACK DADDY entered my care as a foster in a critical state. For the first 10 days we assessed his quality of life every 24 hours – survival uncertain. At day 10 I celebrated Mack Daddy gaining "bootie"(weight) with the rescue community. Mack Daddy continued his recovery to gorgeous rat-sized snuggler with snacks, love and time.



PEARL came to us after living in a concrete kennel. Pearl is deaf and vision-impaired, she had never walked on a lead, let alone, worn a collar. She had to be carried out of the pound as she'd never felt grass before and was scared of it. What a difference time, patience and love can make!



MACY had travelled over 50 km in a car engine. He was burned and his leg hung by a thread. After gathering this broken kitten into my arms, he looked at me and purred. Macy's back leg and part of his tail needed amputation. No matter what he went through Macy bravely soldiered on. He just wanted attention and love. Seeing Macy thrive has brought me great happiness.



SURVEY REVEALS THE SPENDING AND CARE HABITS OF AUSSIE PET OWNERS

Australia's most authoritative pets survey has revealed how much pet owners are spending on their beloved cats and dogs every year, while also showing one in five pet owners haven't visited the vet in the last two years.

Animal Medicines Australia's new Pets and the Pandemic report shows that cat and dog owners are spending thousands on their pets each year, averaging around \$3,200 per dog and \$2,100 per cat.

Indicatively, dog owners across Australia have cumulatively spent \$20.5 billion in last year, while cat owners have spent \$10.2 billion.

Food leads as the largest category of spending for pets, followed by pet health-related items.

The most common factors considered when making purchase decisions on pet food are the pet's own food and taste preferences, the quality of ingredients, perceptions of price and value for money, and whether the food is nutritionally complete.

Supermarkets are the most popular place to buy pet food. Meanwhile, pet owners tend to buy healthcare products for their pets from vets.

“With all the new pets in the lives of pet owners and despite the interruptions of lockdowns, we'd really love to see owners getting their pets in front of vets for regular check-ups. A strong and ongoing relationship with a veterinarian improves the level of care throughout the life of each pet.”

Animal Medicines Australia
Executive Director **Ben Stapley**

Vets also remain the top source of information for pet-related issues. On average, pets have been taken to the vet twice since the onset of the pandemic (more frequently for dogs, at 2.5 times)—with vaccinations and general check-ups being the most common reasons for a visit to the vet.

Despite this, one in five pet owners haven't visited the vet in the last two years. The survey found that the top reasons for not visiting the vet or visiting the vet less were cost, owners feeling that they already know what to do to help a sick pet, and owners turning to online resources to resolve any issues.

It comes as Animal Medicines Australia's new Pets and the Pandemic study also found pet numbers have exploded across the country, with nationally, 69% of households now having a pet, significantly higher than 61% only two years ago.

The study was conducted by Newgate Research, and included focus group conversations with dog and cat owners from around the country, validated through a nationally representative online survey of more than 1,000 adults.





THE WARMING CLIMATE IS CAUSING ANIMALS TO ‘SHAPESHIFT’

Climate change is not only a human problem; animals have to adapt to it as well. Some “warm-blooded” animals are shapeshifting and getting larger beaks, legs, and ears to better regulate their body temperatures as the planet gets hotter.

“A lot of the time when climate change is discussed in mainstream media, people are asking ‘can humans overcome this?’, or ‘what technology can solve this?’. It’s high time we recognized that animals also have to adapt to these changes, but this is occurring over a far shorter timescale than would have occurred through most of evolutionary time,” says Ryding. “The climate change that we have created is heaping a whole lot of pressure on them, and while some species will adapt, others will not.”

Ryding notes that climate change is a complex and multifaceted phenomenon that’s been occurring progressively, so it is difficult to pinpoint just one cause of the shapeshifting. But these changes have been occurring across wide geographical regions and among a diverse array of species, so there is little in common apart from climate change.

Strong shapeshifting has particularly been reported in birds. Several species of Australian parrot have shown, on average, a 4%-10% increase in bill size since 1871, and this is positively correlated with the summer temperature each year.

North American dark-eyed juncos, a type of small songbird, had a link between increased bill size and short-term temperature extremes in cold environments. There have also been reported changes in mammalian species. Researchers have reported tail length increases in wood mice and tail and leg size increases in masked shrews.

“The increases in appendage size we see so far are quite small – less than 10% – so the changes are unlikely to be immediately noticeable,” says Ryding. “However, prominent appendages such as ears are predicted to increase – so we might end up with a live-action Dumbo in the not-so-distant future.”

Next, Ryding intends to investigate shapeshifting in Australian birds firsthand by 3D scanning museum bird specimens from the past 100 years. It will give her team a better understanding of which birds are changing appendage size due to climate change and why.

“Shapeshifting does not mean that animals are coping with climate change and that all is ‘fine,’ says Ryding. “It just means they are evolving to survive it. We’re not sure what the other ecological consequences of these changes are, or indeed that all species are capable of changing and surviving.”

The authors received financial support from the Australian Research Council Discovery Project, an Australian Research Council Future Fellowship, and a Natural Sciences and Engineering Research Council of Canada Discovery Grant.

Journal Reference:

Sara Ryding, Marcel Klaassen, Glenn J. Tattersall, Janet L. Gardner, Matthew R.E. Symonds. Shape-shifting: changing animal morphologies as a response to climatic warming. *Trends in Ecology & Evolution*, 2021; DOI: 10.1016/j.tree.2021.07.006

INNOVATIVE APP TO AID INDIGENOUS ANIMAL HEALTH

Animal Management in Rural and Remote Indigenous Communities (AMRRIC) will lead a grass-roots collaboration with Indigenous community stakeholders across more than 20 communities in Northern Australia, to improve Indigenous community animal health surveillance capacity, through the collection and reporting of community animal health and biosecurity data via the custom-designed AMRRIC App.

In partnership with community-based collaborators, AMRRIC has received \$1.257million in funding via the Department of Agriculture, Water and the Environment's Biosecurity Business Grants Program which funds Indigenous organisations to develop opportunities that capitalise on biosecurity.

The project will be delivered by AMRRIC in partnership with remote Indigenous community stakeholders in the Northern Territory, Western Australia and Queensland. AMRRIC will collaborate with the Northern Australia Quarantine Strategy (NAQS) and Wildlife Health Australia (WHA) to ensure that surveillance undertaken throughout the project aligns with Australia's biosecurity priorities.

The three-year collaborative project will enhance biosecurity capacity in remote Indigenous communities and support Indigenous economic opportunities, by supporting the employment of over 40 local community members.

"Vast distances, seasonal access challenges, cultural differences and limited veterinary and animal health capacity within remote Indigenous communities pose significant challenges to the early detection of animal disease events," said AMRRIC Chief Executive Officer Dr Brooke Rankmore.

"Recent animal disease events including the outbreak of Ehrlichia canis, currently devastating dog populations in many remote communities across Northern Australia, and the threat of incursions of exotic diseases such as Rabies and Africa Swine Fever emphasise the urgent need for improved animal biosecurity data capture in remote Indigenous communities."

The custom-designed App features a user-friendly interface, extensive use of images, icons and design features to minimise the need for text input and aid in ensuring data validity, and will allow users to easily capture companion animal population and health data.

The data captured will be shared with biosecurity authorities, contributing to improvements in Australia's animal biosecurity surveillance, and to animal health in remote Indigenous communities.

"As one of the most unique local government and biosecurity areas in Australia, we are constantly looking for innovative solutions to assist in mitigating our biosecurity risks".

"We believe this system will assist our Environmental Health workforce, by enabling improvements to our current animal biosecurity data capture and ultimately Australia's biosecurity surveillance systems," said Cr. Phillemon Mosby, Mayor of the Torres Strait Island Regional Council (TSIRC), one of the organisations which will be involved in the project.

"We look forward to collaborating with AMRRIC so that our staff can receive training in collecting animal health surveillance data. Given the limited veterinary access to our communities, this project is vital to improving Australia's animal disease early detection through community-based capacity."



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PETS AND THE PANDEMIC:

A SOCIAL RESEARCH SNAPSHOT OF PETS AND PEOPLE IN THE COVID-19 ERA

Animal Medicines Australia (AMA) is the peak body representing leading animal health companies in Australia. As part of its role, AMA provides up-to-date, authoritative data on pets and pet ownership in Australia—chiefly through its triennial Pets in Australia survey to track the state of pet ownership in Australia.

Following the unprecedented changes to daily life as a result of the global COVID-19 pandemic, media coverage on pets and reports of rising waitlists from breeders and animal shelters suggested a substantial shift in the state of pet ownership—including new challenges and evolving relationships with pets and their owners.

Against this context, AMA commissioned Newgate Research to undertake a program of research to explore and provide a 'snapshot' into pet ownership against the backdrop of COVID-19 concerns and restrictions, as well as to track any impacts of the pandemic against key metrics from the previous triennial national survey.

Here's a snapshot of what they found:

The pandemic has strengthened the relationship between people and their pets with 70% saying that being a pet owner has improved their lives. While our participants struggled to pinpoint specific changes to behaviours, they were able to readily name overall benefits including companionship,

comfort, positive mental and physical health, and unconditional love.



The companionship provided by pets is highly valued by Australians, and the pandemic has given an opportunity for some to experience the benefits of pets for the first time. Pet owners were near-unanimous in advocating the benefits of pet ownership — wanting others to experience that same joy.



Extrapolated across the country, dog owners have spent \$20.5 billion in the last year while cat owners have spent \$10.2 billion. Throughout the pandemic, 37% of pet owners reported experiencing difficulty accessing things like pet food, treats and veterinary services.

Pet owners reported that the emotional and social benefits gained from their companions more than outweighed any challenges experienced. Indeed, the survey results suggest an estimated 7.3 million households would like to add a pet to their family—including 85% of pet owners and 43% of non-owners.



Contrary to media portrayals of 'pandemic pet parents', most new or additional pet owners said they had long been thinking of adding a pet to their household—the pandemic had simply given them the time and opportunity to be home to 'on-board' the pets they've long wanted.



Nationally, 69% of households now own a pet, up from 61% only two years ago. This has been led by a surge in dog ownership—with over a million additional dogs being brought into Australian households since 2019.



A quarter (24%) of all pet cats in the country were also obtained during the pandemic. Almost half were given freely, and companionship and rescue were the top reasons for getting a cat.



A fifth (19%) of all pet dogs in Australia have been procured during the pandemic. Companionship is by far the top reason for wanting a dog, with breed temperament and size also considered relatively important.

While awareness of pet telehealth services appear low, veterinarians remain the top source of information for pet owners. 71% of all pet owners have visited the vet at least once during the pandemic.



GRIM WARNING FOR AUSSIE SPECIES IN CONSERVATION CHECKLIST

The Swift Parrot is facing 17 different threats including habitat loss from logging and agriculture, invasive weeds, and the many and varying effects of climate change.

The first comprehensive list of the threats to Australia's most endangered plants and animals reveals blunt news about the future for some of the country's favourite species.

The University of Queensland-led study has compiled a data set, listing the threats to Australian species from habitat loss, fragmentation, and degradation.

Michelle Ward, a PhD candidate at UQ's School of Earth and Environmental Sciences said while it painted a grim picture for many plants and animals, it was not all bad news.

"This information can improve the conservation of some of Australia's most endangered plants and animals by providing conservation managers with more precise data to better direct their efforts," Ms Ward said.

"The database has been distributed to federal and state governments and conservation groups like Birdlife Australia, World Wide Fund for Nature, and the Nature Conservancy, who are using it to help inform their conservation actions.

"It brings together knowledge from experts across Australia and it has a range of applications -- not only to prioritise conservation work, but also to assess when developments might have significant impacts on species."

The list includes an in-depth analysis of almost 1800 plants and animals listed as threatened under Australian Commonwealth law -- including 1339 plants and 456 animals.

"More accurate conservation efforts are now possible due to the ability to categorise and address these threats facing our at-risk species," Ms Ward said.

"Looking at the data, conservation managers can see that mitigating habitat loss, invasive species, and disease, while also improving fire regimes and curtailing the impact of climate change wherever possible is crucial for curbing species decline."

Co-author Dr April Reside from UQ's School of Agriculture and Food Sciences said it showed in stark detail that some species faced extensive threats.

"Before now we didn't have comprehensive information on the threats to these species, and more importantly, the severity of those threats," Dr Reside said.

"For example, the swift parrot is facing 17 different threats including habitat loss from logging and agriculture, invasive weeds, and the many and varying effects of climate change.

"So now we know the range of threats that need to be addressed to save this iconic bird.

"Similarly, koalas face nine threats including habitat loss from agriculture and urban development, dog attacks and disease.

"With this information, we are now better equipped to protect the plants and animals that we cherish so much in Australia."

The study was carried out with the support of eight universities and seven conservation, environmental and ecological science organisations throughout Australia.

Journal Reference:

Michelle Ward, Josie Carwardine, Chuan J. Yong, James E. M. Watson, Jennifer Silcock, Gary S. Taylor, Mark Lintermans, Graeme R. Gillespie, Stephen T. Garnett, John Woinarski, Reid Tingley, Rod J. Fensham, Conrad J. Hoskin, Harry B. Hines, J. Dale Roberts, Mark J. Kennard, Mark S. Harvey, David G. Chapple, April E. Reside. A national scale dataset for threats impacting Australia's imperiled flora and fauna. *Ecology and Evolution*, 2021; DOI: 10.1002/ece3.7920





DOG PARASITE IS DEVELOPING RESISTANCE TO TREATMENTS

Parasitic hookworm *Ancylosoma*, 3D illustration. *Ancylostoma duodenale* can infect humans, dogs and cats, its head has several tooth-like structures

Hookworms are one of the most common parasites plaguing the companion animal world. They use their hooklike mouths to latch onto an animal's intestines, where they feast on tissue fluids and blood. Infected animals can experience dramatic weight loss, bloody stool, anemia and lethargy, among other issues. Now they've become multiple-drug resistant, according to new research from the University of Georgia.

Right now, U.S. veterinarians rely on three types of drugs to kill the hookworms, but the parasites appear to be becoming resistant to all of them. Researchers from the UGA College of Veterinary Medicine first reported this concerning development in 2019, and new research, published recently in the *International Journal for Parasitology: Drugs and Drug Resistance*, provides deeper insight into where the problem started and how bad it's since become.

For the present study, the researchers focused on current and former racing greyhounds. Dog racetracks are particularly conducive to spreading the parasite due to the sandy ground of the facilities, an ideal breeding ground for hookworms. Because of the conditions, all the dogs are dewormed about every three to four weeks.

After analyzing fecal samples from greyhound adoption kennels, three veterinary practices that work with adoption groups and an active racing kennel, the researchers found the parasites were highly prevalent in the breed. Four out of every five greyhounds tested came up positive for hookworms.

And the ones that tested negative are probably also infected, said Ray Kaplan, the study's corresponding author and a former professor of veterinary parasitology at UGA. Hookworms can sometimes "hide" in tissues, where they won't reproduce and shed eggs until the infection worsens and leaks into the dog's intestines.

But perhaps more alarming, the team saw that the dogs still had high levels of infection with hookworms even after they were treated for them.

The study marks the first demonstration of widespread multiple-drug resistance in a dog parasite reported in the world.

PARASITE MUTATIONS

In situations where there are a lot of dogs infected with a lot of parasites, such as on racing dog breeding farms and kennels, there are many more opportunities for parasites to develop rare mutations allowing them to survive the dewormer treatments. If dewormers are applied frequently, the newly emerging resistant worms will survive and pass on the mutation that helped them sneak past the drug to their offspring.

With repeated treatments over time, most of the drug-susceptible worms at the farm or kennel will be killed, and the resistant worms will then predominate.

Compounding the problem, veterinarians don't typically test animals after treatment to ensure the worms are gone, so the drug-resistant worms go unnoticed until the dog has a heavy infection and starts showing signs of hookworm disease.

The researchers found that almost all the fecal samples tested positive for the mutation that enables hookworms to survive treatment with benzimidazoles, a broad-spectrum class of dewormers used in both animals and humans. Although a molecular test does not yet exist to test for the resistance to the other two types of drugs, other types of testing by the team showed that the hookworms were resistant to those drugs as well.

“There’s a very committed greyhound adoption industry because they are lovely dogs,” said Kaplan. “I used to own one. But as those dogs are adopted, the drug-resistant hookworms are going to show up in other pet dogs.”

One possible breeding ground for a potential drug-resistant hookworm outbreak is also the place many dog owners use to exercise their animals: dog parks.

“Personally, I would not take my dog to a dog park,” Kaplan said. “If your dog picks up these resistant hookworms, it’s not as easy as just treating them with medication anymore. Until new types of drugs are available, taking your dog to a dog park has to be considered a risky activity.”

THE CONSEQUENCES

Dogs don’t have to ingest the worms to become infected. Hookworm larvae live in the soil and can also burrow through the dog’s skin and paws. And female dogs can pass the parasite on to their puppies through their milk.

If that’s not scary enough, dog hookworms can also infect humans.

The infection doesn’t manifest in the same way in people, but after the worms penetrate the skin, they cause a red, very itchy rash as they travel under the skin. As the number of drug-resistant worms grows, they’ll also pose a risk to humans.

Previously, doctors would treat patients with an ointment that contains a dewormer along with a corticosteroid. “Unfortunately, that’s not going to work against these drug-resistant hookworms,” Kaplan said.

But hope isn’t entirely lost. Kaplan and Pablo Jimenez Castro, lead author of the study and a recent doctoral graduate from Kaplan’s lab, found in another recent study that these multiple-drug resistant dog hookworms do appear to be susceptible to emodepside, a dewormer currently only approved for use in cats in the U.S. But use of this cat drug on dogs should only be performed by a veterinarian, as it requires veterinary expertise and supervision.

Based in part on Castro’s work, the American Association of Veterinary Parasitologists recently formed a national task force to address the issue of drug resistance in canine hookworms.

Co-authors on this study include Abigail Malatesta, a veterinary student from Tuskegee University, Hannah Huff, currently a veterinary student at the University of Georgia, and researchers from the University of Calgary in Canada.





BLUE-TONGUE VS RED-BELLIED BLACK

AN AUSTRALIAN EVOLUTIONARY ARMS RACE

Scientists have discovered that the humble blue-tongue lizard is largely resistant to the venom of the deadly red-bellied black snake, while giant carnivorous monitor lizards which feed on Australia's most venomous snakes are not.

The surprising finding was revealed after University of Queensland scientists compared the effects of various reptile blood plasmas when exposed to the venom.

UQ PhD candidate Nicholas Youngman said mammalian – and particularly, human – reactions had been heavily investigated, but very little was known about snake venom effects on other reptiles.

“It was a shock discovering that the eastern blue-tongue, along with the shingleback, showed resistance specifically to red black snake venom,” Mr Youngman said.

“Since their resistance was so specific to only this snake species, it seems these lizards have evolved a special plasma component – known as a serum factor – in their blood.

“This prevents specific toxins in red-bellied black snake venom from clotting the lizards’ plasma, which would lead to a rapid death in most other animals.

“This resistance doesn’t mean they’re completely immune, but it would give them a greater chance of survival, allowing them to escape or fight back.

“Much like how a COVID-19 vaccine doesn’t mean you don’t get sick at all, it just means you are less likely to die.”

The research team analysed the effects of seven different Australian snake venoms on the plasma of two species of blue-tongued skinks and three species of monitor lizards that would interact with these snakes in the wild.

Associate Professor Bryan Fry, who heads UQ’s Venom Evolution Lab, said the results also revealed that monitor lizards – or goannas – were not resistant to the snake venoms.

“You’d think that a goanna would be significantly resistant to the venom of any snake it was hunting and eating, but that isn’t the case,” Dr Fry said.

“Snake venom can only cause harm to goannas if it’s injected into its body by the snake’s fangs, it can’t be absorbed directly through the skin.

“Goannas are heavily armoured and their scales act like medieval chain mail, with each containing a piece of bone, meaning venomous snakes’ fangs struggle to pierce this armour.

“So – unlike the slow, vulnerable blue-tongue lizard – there’s no pressure for goannas to evolve resistance; natural selection has invested in their armour and it’s clearly working for them.

“These two divergent forms of resistance are fascinating examples of evolutionary novelty.”

Journal Reference: Nicholas J. Youngman, Joshua Llinas, Bryan G. Fry, Evidence for Resistance to Coagulotoxic Effects of Australian Elapid Snake Venoms by Sympatric Prey (Blue Tongue Skinks) but Not by Predators (Monitor Lizards). *Toxins*, 2021; 13 (9): 590 DOI: 10.3390/toxins13090590

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PERIODONTAL DISEASE

2021 RESEARCH AND ABSTRACTS

Periodontal disease is not a new disease. It has affected both man and animal kind since they first appeared on the earth. Periodontal diseases have been reported as one of the most common diseases of the Egyptians more than 4,000 years ago. In one of the oldest Chinese medical books from 2,500 B.C., there is a chapter devoted to dental and gingival diseases.

Early works and case reports have been published in veterinary literature. Colyer published a complete book on the 'Variations and Disease of Teeth of Animals' in 1936. A case report was published in 1897 describing false teeth for a dog. GV Black also reported on 'pyorrhoea' in dogs at the end of the 1800s, confirming dogs from this era suffered from periodontitis and periodontal disease. Dent in 1979 was able to collect plaque forms on all surfaces of teeth of all animals, apart from the actual masticatory surfaces. He also found that the samples related directly to whether the species was a herbivore, carnivore or omnivore.

CAUSATIVE FACTORS

Periodontal disease affects over 85% of all of our small animal patients over 2 years of age. We see it on a daily basis. The tissues that are involved are collectively termed 'the periodontium', and include the alveolar bone, periodontal ligament, cementum and gum (gingiva). Most of the diseases of the periodontium are inflammatory in origin, and commence as an inflammation of the gum margin, namely gingivitis. The majority are multi-factorial and require the presence of a number of factors simultaneously. Some of the factors that influence the progression of periodontal disease include distribution of plaque, virulence of the individual microflora, calculus deposits, the dog or cat breed, type of bite, malocclusions, tooth rotation or overcrowding, genetics and immune factors, general health, age, home dental care, chewing behaviour, saliva, muzzle hair, periodontal pocket depth, inflammatory status just to mention a few.

Although periodontal disease is a multi-factorial disease, the primary cause is plaque, a mixture of glycoproteins, polypeptides, lipids, Gram positive aerobic and Gram negative anaerobic bacteria, food particulate and saliva. Current treatment of periodontal disease in the majority of veterinary practices setting involve: diagnosis, oral examination, dental radiographs, dental charting, scaling and polishing. When a tooth is compromised, it is often extracted. More advanced procedures are performed in some clinics which involve: open and closed root planning, or guided tissue regeneration.

I thought you may be interested in reading the latest advances that have been published in the human literature, so for this article, I have gathered some Abstracts from the Journal of Periodontology, the official journal of the American Academy of Periodontology. It will be interesting to see whether any of these 'advances' are applicable to our veterinary patients, and whether manufacturers will produce products based on the current research.

ABSTRACT 1.

The sialidase inhibitor, DANA, reduces *Porphyromonas gingivalis* pathogenicity and exerts anti-inflammatory effects: An in vitro and in vivo experiment

Shiwen Yu, Xiaomiao Fan, Shaowen Zheng, Li Lin, Jingbo Liu, Yaping Pan, Chen Li J. *Periodontol.* 2021;92(2):286-297

Background Sialidase has an important role in the pathogenesis of periodontitis and *Porphyromonas gingivalis* is a sialidase-producing organism implicated in periodontitis development. The aim of this study was to evaluate the anti-virulence and anti-inflammatory properties of the sialidase inhibitor, 2-deoxy-2,3-didehydro-N-acetylneuraminic acid (DANA), in vitro and in vivo.

Methods The effects of DANA on *P. gingivalis* sialidase and cell viability were determined, and the effects of DANA on *P. gingivalis* virulence were evaluated by assessment of growth curves, cell morphology, biofilm formation, fimbriae gene expression, and gingipains and lipopolysaccharide (LPS) activity. Anti-inflammatory effects of DANA on LPS-induced macrophages were assessed by measurement of tumor necrosis factor-alpha (TNF- α), interleukin (IL-1 β), inducible nitric oxide synthase (iNOS) secretions. The effect of DANA on *P. gingivalis*-induced periodontitis in rats was analyzed by radiography, stereoscopic microscopy, histopathology, and immunohistochemistry.

Results Sialidase inhibition rate of 1mM DANA was 72.01%. Compared with untreated controls, treatment with DANA inhibited *P. gingivalis* growth and biofilm formation, and significantly decreased expression of the *fimA*, *fimR*, and *fimS* genes, as well as gingipains activity. DANA did not influence macrophage viability, but significantly inhibited TNF- α , IL-1 β , and iNOS production in LPS-stimulated macrophages. In the periodontitis rat model, DANA prevented alveolar bone absorption and inhibited TNF- α and IL-1 β production.

Conclusion DANA can reduce the growth, the biofilm formation and the virulence of *P. gingivalis* and exhibits anti-inflammatory effects, as well as effects against rat periodontitis, suggesting that DANA should be considered for development as a new adjunctive treatment for periodontitis.

ABSTRACT 2.

Effect of section thickness on cone beam computed tomography-based measurements of intrabony defects compared with clinical measurements

Natasa Nikolic-Jakoba, Milena Barac, Sasa Jankovic, Zoran Aleksic, Rubens Spin-Neto, Ann Wenzel. *J. Periodontol.* 2021;92(5):670-677

Background It is unknown whether cone beam computed tomography (CBCT) image reconstruction characteristics, including section thickness, may affect linear bone measurements of periodontal intrabony defects. The aim of this study was to compare intrasurgical and CBCT-based linear measurements of intrabony defects focusing on CBCT section thickness.

Methods Sixty-six intrabony defects were assessed in 21 patients with chronic generalized severe periodontitis. Linear measurements of alveolar bone (radiographic bone level [rBL]), assessed in CBCT images at diverse section thicknesses: 0.25 mm (voxel size), 1 mm, and 3 mm, were compared with clinical bone level (cBL) measurements obtained intrasurgically. To provide identical reference points for rBL and cBL measurements, individually adjusted grooves on the reference stent were prepared for each periodontal defect site. CBCT measurements were performed in two rounds by two trained observers. Observer agreement was assessed by intraclass correlation coefficients (ICC). ANOVA assessed the difference among cBL and rBL at different section thicknesses.

Results Intra- and inter-observer agreement was excellent (ICC >0.99) and highly significant independent of the observer, evaluation round, and CBCT section thickness. Mean rBL in the diverse CBCT section thicknesses was very close to that measured clinically (cBL). There was no statistically significant difference between cBL and rBL for any section thickness, neither for the overall evaluated sites, nor the maxilla or mandible separately.

Conclusions No statistically significant difference between clinical and radiographic bone level for 0.25-, 1-, and 3-mm CBCT section thicknesses were observed when assessing intrabony periodontal defects.

ABSTRACT 3.

LPCGF and EDTA conditioning of the root surface promotes the adhesion, growth, migration and differentiation of periodontal ligament cells.

Xuan Zhan, Wencheng Yan, Jun Yan, Wei Tong, Weirong Chen, Yanfang Lin. *J. Periodontol.* 2021;92(5):738-747

Background Liquid-phase concentrated growth factor (LPCGF), a new-generation platelet concentrate, may potentially stimulate human periodontal ligament (PDL) cells. This study assessed the effectiveness of ethylenediaminetetraacetic acid (EDTA) and/or LPCGF on periodontally diseased root surfaces through their effects on PDL cells.

Methods Dentin blocks prepared from periodontal teeth were divided into four groups and treated as follows: group I, scaling and root planning (SRP); group II, SRP + EDTA; group III, SRP + LPCGF; and group IV, SRP+EDTA + LPCGF. PDL cells were cultured on dentin blocks, and LPCGF-induced biological effects were evaluated by migration and cell adhesion/proliferation assays. Furthermore, PDL cell differentiation was assessed by real-time polymerase chain reaction (PCR).

Results Significantly more adherent cells were observed in the EDTA, LPCGF and combination treatment groups than in the control group. Root conditioning with EDTA and/or LPCGF enhanced cell proliferation and migration more than SRP did. Compared with the control group, the combined treatment group exhibited significant upregulation of cell differentiation-related genes. Electron microscopy of the tooth surface revealed removal of the smear layer and exposed dentin holes in the EDTA-treated group but not in the control group.

Conclusion EDTA and LPCGF application to periodontitis-affected root surfaces forms a surface suitable for cell attachment, growth, migration and differentiation. Thus, LPCGF is promising in clinical periodontics applications. Further studies to support these results are necessary.



ABSTRACT 4.

Proteinase bone morphogenetic protein 1, but not tolloid-like 1, plays a dominant role in maintaining periodontal homeostasis

Jun Wang, Xudong Xie, Nicole A Muench, Dawiyat Massoudi, Chunmei Xu, Daniel S Greenspan, Jian Q Feng. *J. Periodontol.* 2021;92(7):1018-1029

Background Periodontitis is caused by multiple factors involving a bacterial challenge and a susceptible host, although there is no report on gene mutation directly linked to this common disease. Mutations in the proteinase bone morphogenetic protein 1 (BMP1) were identified in patients with osteogenesis imperfecta, who display some dentin defects and alveolar bone loss. We previously reported essential roles of BMP1 and tolloid-like 1 (TLL1), two closely related extracellular proteinases with overlapping functions, in mouse periodontium growth by simultaneous knockout (KO) of both genes, although the separate roles of BMP1 and TLL1 have remained unclear. Here, we have investigated whether and how BMP1 and TLL1 separately maintain periodontal homeostasis by comparing single *Bmp1* KO and *Tll1* KO with double KO (dKO) phenotypes.

Methods Floxed *Bmp1* and/or *Tll1* alleles were deleted in transgenic mice via ubiquitously expressed *CreERT2* induced by tamoxifen treatment starting at 4-weeks of age (harvested at 18-weeks of age). Multiple approaches, including X-ray, micro-CT, calcein and alizarin red double-labeling, scanning electron microscopy, and histological and immunostaining assays, were used to analyze periodontal phenotypes and molecular mechanisms.

Results Both *Bmp1* KO and double KO mice exhibited severe periodontal defects, characterized by periodontal ligament (PDL) fiber loss and ectopic ossification in the expanded PDL area, and drastic reductions in alveolar bone and cementum volumes, whereas *Tll1* KO mice displayed very mild phenotypes. Mechanistic studies revealed a sharp increase in the uncleaved precursor of type I collagen (procollagen I), leading to defective extracellular matrices.

Conclusions BMP1, but not TLL1, is essential for maintaining periodontal homeostasis. This occurs at least partly via biosynthetic processing of procollagen I, thereby maintaining appropriate levels of procollagen I and its activated products such as mature collagen I.

ABSTRACT 5.

The effects of a novel non-invasive application of platelet-rich fibrin on periodontal clinical parameters and gingival crevicular fluid transforming growth factor- β and collagen-1 levels: A randomized, controlled, clinical study.

Erkan Özcan, İl Saygun, Alpdogan Kantarcı, Sava Özarslantürk, Muhittin A. Serdar, Taner Özgürta, *J. Periodontol.* 2021;92(9):1252-1261

Background Several potential benefits have been attributed to the platelet-rich fibrin (PRF), including enhanced tissue healing properties. In this study, we hypothesized that the application of PRF as an adjunct to conventional scaling and root planing (ScRp) would enhance the outcomes of non-surgical periodontal therapy.

Methods The present study was a split-mouth randomized controlled clinical trial design in 24 deep periodontal pockets in 12 patients with periodontitis. The pockets were randomly assigned as test or control. The test group received PRF as an adjunct to ScRp, whereas the control group received ScRp only. We measured periodontal clinical parameters at baseline, 3, and 6 months after the treatments. To study the initial healing in response to treatment, transforming growth factor- β (TGF- β) and collagen-1 (Col-1) in gingival crevicular fluid (GCF) were measured using enzyme-linked immunosorbent assay at baseline, third, seventh, and 14th days.

Results The test group showed a significantly greater pocket reduction, higher clinical attachment gain, and less gingival recession than the control group at 3 and 6 months. The test Col-1 levels (1.27 ± 1.05 , 1.35 ± 0.76 , 0.97 ± 0.53 ng/site) and TGF- β levels (11.93 ± 2.68 , 12.54 ± 3.66 , 17.19 ± 11.66 pg/site) were higher than the control Col-1 levels (0.76 ± 0.20 , 0.84 ± 0.24 , 0.57 ± 0.19 ng/site) and TGF- β levels (6.34 ± 1.67 , 6.35 ± 3.44 , 7.51 ± 2.85 pg/site) at all measurement days respectively.

Conclusions Non-surgical application of the PRF as an adjunct to conventional ScRp may effectively improve the periodontal clinical parameters via increasing expression of the GCF TGF- β and Col-1 levels.



ABSTRACT 6.

Use of amnion-derived cellular cytokine solution for the treatment of gingivitis: A 2-week safety, dose-ranging, proof-of-principle randomized trial

Hatice Hasturk, David Steed, Emre Tosun, Melissa Martins, Constantinos Floros, Daniel Nguyen, Danielle Stephens, Maryann Cugini, Jacqueline Starr, Thomas E. Van Dyke. *J. Periodontol.* 2021;92(9):1317-1328

Background A 6-week Phase I clinical trial was performed to primarily evaluate the safety and secondarily determine the preliminary efficacy of a novel biological solution, ST266, comprised of a mixture of cytokines, growth factors, nucleic acids, and lipids secreted by cultured amnion-derived multipotent progenitor cells on gingival inflammation.

Methods Fifty-four adults with gingivitis/periodontitis were randomly assigned to 1X ST266 or diluted 0.3X ST266 or saline topically applied on facial/lingual gingiva (20 μ L/tooth). Safety was assessed through oral soft/hard tissue exam, adverse events, and routine laboratory tests. Efficacy was assessed by modified gingival index (MGI), bleeding on probing, plaque index, probing depth (PD), and clinical attachment level (CAL). Assessments were performed on day 0, 8, 12, and 42. ST266 and saline applied daily starting at day 0 through day 12 except weekend days. Plasma was analyzed for safety and proinflammatory cytokines, interleukin (IL)-1 β , IL-6, tumor necrosis factor-alpha, and interferon gamma. Gingival crevicular fluid (GCF) was analyzed for the same cytokines. Subgingival plaque was primarily analyzed by checkerboard DNA-DNA hybridization. Comparisons with saline were modeled through a generalized estimating equations method adjusting for baseline.

Results No safety concern was found related to ST266. Statistically significant reduction in MGI was noted at day 42 by 1X ST266 compared with saline ($P = 0.044$). PD and CAL were reduced by both doses of ST266 at day 42 ($P < 0.01$) and by 1X ST266 at day 12 ($P < 0.05$). GCF IL-1 β and IL-6 levels were reduced by both doses of ST266 at day 12 ($P < 0.05$, $P < 0.01$, respectively). IL-6 was also significantly reduced in plasma of both ST266 groups ($P < 0.05$). Significant reductions in red complex bacteria were detected in both ST266 doses.

Conclusions In this “first in human oral cavity” study, topical ST266 was safe and effective in reducing gingival inflammation in 6 weeks. Longitudinal studies with large sample sizes are warranted to assess the therapeutic value of this novel host modulatory compound in the treatment of periodontal diseases.



ABSTRACT 7 (Open Access Article).

Porphyromonas gingivalis outer membrane vesicles inhibit the invasion of *Fusobacterium nucleatum* into oral epithelial cells by downregulating FadA and FomA.

Zhang Z, Liu S, Zhang S, et al. *J. Periodontol.* 2021, 2021:1-11 <https://doi.org/10.1002/JPER.21-0144>

Background *Porphyromonas gingivalis* and *Fusobacterium nucleatum* participate in the formation and progression of periodontitis. They can exert virulence by invading into host cells, but the interaction between them and their specific mechanisms remain unclear. The purpose of this study was to study the effect of *P. gingivalis* outer membrane vesicles (OMVs) on the ability of *F. nucleatum* to invade oral epithelial cells, and the reasons for the influence.

Methods The invasion abilities of the two bacteria were detected separately after mixed infection of *P. gingivalis* and *F. nucleatum*. Next, *P. gingivalis* OMVs were extracted with the kit, and their influence on the invasion ability of *F. nucleatum* was tested. The effects of *P. gingivalis* OMVs on *F. nucleatum* were evaluated by assessment of bacterial morphology, growth curves, autoaggregation morphology, and the expression of adhesion-related proteins FadA and FomA.

Results Our results showed that *P. gingivalis* inhibited the invasion of *F. nucleatum* into oral epithelial cells but *F. nucleatum* promoted the invasion of *P. gingivalis*. In subsequent experiments, we extracted *P. gingivalis* OMVs successfully and revealed that proteases in *P. gingivalis* OMVs inhibited the invasion of *F. nucleatum* into oral epithelial cells. Furthermore, *P. gingivalis* OMVs did not affect the morphology and proliferation of *F. nucleatum*, but proteases inside decreased the auto-aggregation of *F. nucleatum*. Additionally, proteases in *P. gingivalis* OMVs reduced the expression levels of *F. nucleatum* surface adhesion-related proteins FadA and FomA.

Conclusion Our study demonstrated that proteases in *P. gingivalis* OMVs inhibited the invasion of *F. nucleatum* into oral epithelial cells by downregulating FadA and FomA.

ANTIMICROBIAL RESISTANCE (AMR)

AND ITS CRUCIAL LINK TO DISINFECTANT USE

“Antimicrobial resistance (AMR) is one of the biggest threats to human and animal health today.”

In 2015, the Australian Government published a strategy stating that: “Antimicrobial resistance (AMR) is one of the biggest threats to human and animal health today.”¹ In 2019, The AVA published their own paper: Antimicrobial resistance strategy – 2020 and beyond.² One of their key objectives was to “Improve infection prevention and control measures across human health and animal care settings” and “to help prevent infection and the spread of resistance”.

AMR occurs when microorganisms such as Bacteria, Viruses or Fungi (Yeast) become resistant to antimicrobial medicines or compounds. The three main classes of Antimicrobials are:

- Antibiotics
- Antiseptics
- Disinfectants

In 2018, the American Society for Microbiology published a paper titled Widely used Benzalkonium Chloride (BAC) disinfectants can promote antibiotic resistance.³ BAC is the most commonly used member of the QAC family of disinfectants and is used extensively worldwide in products such as disinfectants, pharmaceutical medicines and consumer products.

“The problem is not the efficacy of BAC itself as an antimicrobial, instead it’s the indiscriminate use or underuse of the product at varying concentrations, directions and contact times.”

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It is clear that the battle against AMR therefore not only relies on:

- Antimicrobial Stewardship (AMS) which promotes optimal antimicrobial prescribing, but also;
- Proper use of a “2020 and Beyond” TGA approved disinfectant.

Therefore, before using a disinfectant, ensure the following:

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PROFESSIONALS WORLDWIDE LEARN THE LATEST AT VMX 2022

Assessing heart disease in cats and dogs; new perspectives on reptiles with cancer; approaching feline and canine neonatal emergencies; post-operative nursing care; and the basics of treating elephants are among the topics to be presented at the 39th annual Veterinary Meeting & Expo (VMX) where veterinary professionals from all over the world will gather to learn the latest innovations in veterinary medicine for animals of all species.

The North American Veterinary Community (NAVC) today announced more than 900 hours of continuing education (CE) that will be taught and presented by global leaders in veterinary medicine at VMX 2022. The annual conference will be held January 15-19 in person in Orlando, FL, at the Orange County Convention Center and, for the second year, everywhere virtually through VMX Virtual.

“With pet adoptions reaching an all-time high, the demand for veterinary care continues to grow. To provide animals with the best possible healthcare, it’s crucial for veterinary professionals to learn and stay abreast of the constant changes that take place in veterinary medicine,” said Gene O’Neill, NAVC CEO.

“VMX provides the global veterinary community the opportunity to learn from and network with world-renowned speakers, veterinarians and leading companies within the industry. As a hybrid conference, VMX Virtual opens the door to veterinary professionals worldwide to attend and experience VMX 2022 at a time and place that is most convenient for them.”

VMX is the world’s largest and most comprehensive global veterinary education conference. During the five-day conference, VMX delivers world-class education, entertainment and networking opportunities. Through its in-person and virtual CE offerings, VMX provides hundreds of scientific sessions, Hands-on Workshops, Masterclasses, and OnDemand content for the entire veterinary healthcare team.

With hundreds of hours of CE and multiple learning tracks to choose from, attendees can customize their educational experience based on their own learning preferences. To view the VMX program, visit <https://navc.com/vmx/>.

In addition to its unparalleled education opportunities, VMX is the launchpad for new products, innovations and company announcements. Through its award-winning VMX Expo Hall, attendees may network and interact with the leading companies in the animal healthcare industry as well as startup companies that are new to the industry.

Attendees may visit the expo hall virtually through VMX Virtual Expo, a virtual platform that provides a unique, 3D and interactive experience.

The VMX Virtual Expo is accessible 365 days a year to encourage year-long interaction and engagement between attendees and exhibitors.

When registering for VMX 2022, attendees have three options based on their travel and educational preferences. Veterinary professionals can attend VMX 2022 either in person in Orlando, FL, virtually anywhere in the world, or both. In-person attendees will have the opportunity to purchase an all-access registration that includes VMX Virtual. OnDemand sessions will be available for 60 days, starting January 15, to maximize their learning experience.

The health and safety of all VMX attendees is of utmost importance to the NAVC. As the NAVC continues to monitor the COVID-19 pandemic, it will follow the guidance of health officials, conference centers and conference hotels to create a safe environment. To view the NAVC’s health and safety protocols, please visit <https://navc.com/safety/>.



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, the 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.

KOALA KILLER: FROM MUM TO JOEY

A deadly virus that can cause immune depletion and cancer, known as koala retrovirus, is being transferred to joeys from their mothers, according to University of QLD scientists.

Associate Professor Keith Chappell, from UQ's School of Chemistry and Molecular Biosciences, said the virus predisposes koala to chlamydia and other disease, and was having a large impact on wild koala populations across Queensland and New South Wales.

"All northern koalas share a single highly conserved version of KoRV that is integrated into the koala genome, however until now, we weren't certain how other disease-causing variants are spread.

"By sequencing variations of the virus DNA in 109 captive koalas, we finally revealed how the virus spreads – from mother to joey. It seems that transmission between mother and joey likely occurs due to close proximity, via a joey's exposure to a mother's potentially infectious fluids, like their milk.

"Mothers were sharing their virus variants three times more than fathers. And, unlike other diseases affecting koalas like chlamydia, there's no evidence of sexual transmission."

The 109 koalas were housed in two sites in south-east Queensland, helping identify a total of 421 unique koala retrovirus sequences. Collaborator and lead author, PhD candidate Briony Joyce said the research may lead to a re-think in how conservation plans are executed.

"This work will be highly informative for koala conservation, as it suggests that captive breeding programs focused on mothers that have a low amount of retrovirus variants, could result in healthier animals for release," Ms Joyce said.

"Also, we propose that antiretroviral treatment – if shown to be safe in koala and effective against KoRV – could be used specifically in mothers during breeding seasons to prevent transmission.

"This work helps pave the way for evidence-based conservation, increasing koala resilience to help them cope with a changing and challenging environment. We must do everything we can to ensure the survival of this culturally important species."



The research has been published in PNAS (DOI: 10.1073/pnas.2024021118).

FREE ONLINE EMERGENCY ANIMAL DISEASE TRAINING FOR CLINICIANS

Emergency Animal Diseases are diseases of national significance because of the impacts they may have on animal health, human health, the environment and/or the economy.

Veterinarians play a critical role in detecting, investigating, reporting and managing cases where an emergency animal disease is suspected, but for many veterinarians in clinical practice, the investigation and reporting of emergency animal disease is unfamiliar territory. With new diseases continuing to emerge, it is vital that veterinarians are on the look out for, and know how to investigate and report unusual outbreaks of disease in animals they are treating.

Emergency Animal Disease Surveillance Online Training is a free online training package for veterinarians that aims to provide a refresher on the significance of Emergency Animal Diseases, their detection, investigation, reporting and management. The package includes 6 self-paced interactive case studies, each taking approximately 30 minutes to complete and featuring a variety of species including horses, backyard chooks and a dog.

This continuing education package was collaboratively developed with contributions from all of the Australian Veterinary Schools, IT partner Epi-Interactive and members of the veterinary profession. Funding from the Australian

Government's Agricultural Competitiveness White Paper – the Government's plan for stronger farmer and a stronger economy – and the Australian Biosecurity Response Reform Program has ensured this valuable resource is freely available to the veterinary profession.

To brush up on emergency animal disease management, please visit: <https://eadonline.com.au/>



EASTERN BARRED BANDICOOTS BROUGHT BACK FROM EXTINCTION

For the first time ever in Australia, a species classified as extinct in the wild has been reclassified with Victoria's Eastern Barred Bandicoot coming back from the brink of extinction.

Minister for Energy, Environment and Climate Change, Lily D'Ambrosio announced the species status had changed and, while still endangered, the Eastern Barred Bandicoot has a much brighter future.

The change in status for the nocturnal species – decimated by foxes and cats and habitat destruction – is the result of dedication and hard work by both volunteers and government agencies.

Once common across the grassy plains in south-west Victoria, Eastern Barred Bandicoot populations were eventually confined to the last wild population surviving near Hamilton. In 1989, only around 150 remained.

An Eastern Barred Bandicoot recovery team was formed in 1988 to coordinate efforts to rescue the species from extinction.

The team has established populations at four feral predator-free fenced reintroduction sites at Woodlands Historic Park, Hamilton Community Parklands, Mt Rothwell and Tiverton, and two sites protected by Zoos Victoria's Guardian Dogs at Skipton and Dunkeld.

Bandicoots from captive breeding programs and fenced reserves have also been successfully translocated to secure, fox-free habitats on Phillip, Churchill and French Islands, where significant populations are now thriving. These combined sites are now home to about 1500 Eastern Barred Bandicoots, prompting the reclassification.

To help the species further, some of the captive-bred population has been inter-bred with their nearest relative, the Tasmanian Eastern Barred Bandicoot, to help improve the population's genetic fitness and increase the species' resilience to climate change.

The changed status enables Zoos Victoria to end its 30-year captive breeding program, which has produced close to 1,200 animals.

The Victorian Government supported the recovery with more than \$5.5 million, with funding also coming from the Commonwealth Government, Conservation Volunteers Australia, Tiverton Property Partnering.

"We are excited to announce the change in conservation status for the Eastern Barred Bandicoot from extinct in the wild to endangered – it is an incredible first for Australia," Ms D'Ambrosio said.

"This success is due to the efforts of every member of the recovery team. Community volunteers have played a big role at many of the reintroduction sites, helping check fences, count bandicoots and remove weeds and pests."

"It is wonderful to see so many agencies and organisations working together to achieve this fantastic outcome for the Eastern Barred Bandicoot."

Source: DELWP



BOVID IMPORTS FOR ZOOS APPROVED WITH STRICT CONDITIONS

Zoos wishing to import live bovid animals or their semen into Australia have received a greenlight following a department review, provided they meet strict new biosecurity measures preventing 22 significant diseases including rabies, foot-and-mouth disease and Rift Valley fever, being introduced.

Currently, Australia only permits the importation of zoo bovids from New Zealand, including animals like kudu, gazelles and impala. The review recommends 19 other countries be allowed to import bovid animals and their semen, if agreed biosecurity import conditions are met. Species including domestic cattle and buffalo, sheep and goats are excluded.

Head of Biosecurity, Andrew Tongue, said the review was based on expert advice and extensive consultation with the animal industry sector and was an important step for zoos around Australia.

“Importation of zoo bovids is a top priority for the zoo sector, to improve the genetic diversity of existing zoo collections and contribute to international conservation efforts,” Mr Tongue said.

“However, it’s vital these zoo animals don’t create undue biosecurity risk to Australia. The department has worked closely with the zoo and livestock industries to develop conditions that will allow imports to occur safely.

“All animals imported will be held in pre-export quarantine for at least 30 days.

“They will be observed for signs of disease, treated for internal and external parasites, and tested for diseases in accordance with Australian import requirements.

“The donor animal must be resident in an approved, licensed or registered zoo or wildlife park in the exporting country since birth or for at least 12 months immediately before collection, unless otherwise approved by the department.”

“Importation of zoo bovids is a top priority for the zoo sector, to improve the genetic diversity of existing zoo collections and contribute to international conservation efforts,”



CAVALIER KING CHARLES SPANIELS CARRY MORE HARMFUL GENETIC VARIANTS THAN OTHER BREEDS

Recent dog breeding practices have loaded up cavalier King Charles spaniels with disease-causing mutations, including variants linked to the common heart condition, myxomatous mitral valve disease (MMVD). Erik Axelsson of Uppsala University and colleagues published these new findings Sept. 2 in the journal PLOS Genetics.

The past 300 years of dog breeding have created an incredible diversity of breeds with various sizes, shapes, and abilities. Unfortunately, this process has also caused many breeds to become more inbred and more likely to inherit genetic diseases.

The study's researchers wanted to know whether recent breeding practices had increased the number of disease-causing variants in dogs. They sequenced entire genomes from 20 dogs from eight common breeds, such as beagles, German shepherds, and golden retrievers. They found that the cavalier King Charles spaniel, which experienced the most intense breeding, carried more harmful genetic variants than the other breeds they examined.

The researchers also looked for genetic variants in the cavalier King Charles spaniel genomes linked to MMVD. In this condition, the mitral valve in the heart degenerates, allowing blood to leak from the left ventricle back into the left atrium. They identified two genetic variants linked to the disease, which appear to regulate a gene that codes for a common protein in heart muscle. The findings offer a potential explanation for why the cavalier King Charles spaniel is predisposed to develop the disease.

The especially large number of potentially harmful genes in the genomes of cavalier King Charles spaniels, compared to other dogs, likely resulted from its breeding history. Records suggest that small spaniel-type dogs have existed for at least 1,000 years and were popular at royal courts for several hundred years throughout Asia and Europe, including at the court of King Charles II (1630-1685). These spaniels experienced several "bottlenecks" where only a small percentage of the population passed on their genes to the next generation. The bottlenecks may have made the harmful genes more common in the cavalier King Charles spaniel genome before the dog achieved recognition as a breed in 1945.

Axelsson adds, "We find that recent breeding may have led to an accelerated accumulation of harmful mutations in certain dog breeds. In the Cavalier King Charles spaniel specifically, one or several of these mutations affect heart muscle protein NEBL and may predispose this breed to devastating heart disease."



Journal Reference: Erik Axelsson, Ingrid Ljungvall, Priyasma Bhoomik, Laura Bas Conn, Eva Muren, Åsa Ohlsson, Lisbeth Høier Olsen, Karolina Engdahl, Ragnvi Hagman, Jeanette Hanson, Dmytro Kryvokhyzha, Mats Pettersson, Olivier Grenet, Jonathan Moggs, Alberto Del Rio-Espinola, Christian Epe, Bruce Taillon, Nilesch Tawari, Shrinivas Mane, Troy Hawkins, Åke Hedhammar, Philippe Gruet, Jens Häggström, Kerstin Lindblad-Toh. The genetic consequences of dog breed formation—Accumulation of deleterious genetic variation and fixation of mutations associated with myxomatous mitral valve disease in cavalier King Charles spaniels. PLOS Genetics, 2021; 17 (9): e1009726 DOI: 10.1371/journal.pgen.1009726



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LOVE YOUR VET NURSE



From Geelong to Grafton, Australia's vet nurses all have one thing in common, and it comes as no surprise – they love helping animals by providing care and support when they need it most. They also love coming to work every day, the variety that their role brings, the rewards and challenges, and being part of a team.

Vet Nurse Day was on the 8th October. It is a day to recognise and appreciate our vet nurses and the important role they have in a veterinary clinic, contributing significantly to their field, providing responsible pet care and supporting animal health providers Australia-wide. They are one of the unsung heroes of veterinary care.

A typical day could be spent collecting and testing laboratory samples, taking X-rays, medicating patients in the hospital ward, monitoring anaesthetics, dressing wounds, assisting with surgical procedures, performing minor procedures or doing administrative duties. The day-to-day activity is very much a hands-on, in-depth role in the care of all patients, and is physically and mentally demanding.

As a member of the vet clinic team, it's important to remember that vet nurses are not immune to burnout and compassion fatigue and prioritising the mental health and wellbeing of all employees is important in veterinary practice. There are many things that can be done to support a team's mental health. The aim is to start having the conversations.

Since 2016, global animal health company Zoetis has partnered with mental health not-for-profit Beyond Blue to raise awareness of mental health challenges faced by the veterinarian industry.

"Zoetis is proud to be supporting Beyond Blue and the important work they do. Together we have made strong progress in supporting the mental health and wellbeing of veterinarians, practice staff and nurses. To date, Zoetis' donations of \$500,000, across veterinary and rural farming initiatives have allowed over 8,000 people, including vet nurses, to get the help they need through the Beyond Blue Support Service and we are hoping to help more people this year," said Lance Williams, Zoetis Senior Vice President and Cluster Lead, Australia and New Zealand.

High levels of wellbeing in the workplace contribute to higher performance and productivity, increased engagement and satisfaction, less absenteeism and workplace accidents and reduced staff turnover. Knowing the impact that the mental health and wellbeing of employees has on a practice, it needs to be a priority, however, it's not a one size fits all approach. The first step is providing education to the team so everyone understands the components of wellbeing and finding the strategies that work for them individually to maintain their mental health and wellbeing.

For more information on Zoetis and its partnership with Beyond Blue visit www.zoetis.com.au

Here are six practical tips on how vet nurses can help manage their mental wellbeing:

Start with you Everyone is different, so it's important to understand what is challenging you and why. Where possible, try to identify issues or instances that you find stressful and question what core values of yours they are at odds with.

Understand what works for you There are definitely some basics that everyone should work on to help with their mental health, the key five - physical activity, healthy nutrition, sleep, taking breaks and holidays.

Change your perspective We need to live with the unexpected, so we have to be realistic and kind to ourselves to grow from adversity. There is so much outside of your control at the moment. Focus on what you can control, which is your response to various situations. Don't waste your energy on what you can't control.

Moments of joy It's so easy to focus on everything that is going wrong. However, change your focus to notice what is going well during the workday. Begin to notice those small moments that bring you joy, whether it's a case gone well, a client saying thank you or something as simple as puppy cuddles. Having a positive expectation for the future is an important component of resilience. The pandemic will end and you can get through this.

Find empowerment Clinical Leaders and Practice Managers should provide a clear process for dealing with customers and guidance on when to escalate problems. Knowing that you have their support and what you can say in tough situations will give you the confidence to engage and disengage as needed. Part of dealing with difficult conversations is also understanding that customers are going through some of the same challenges we are.

Speak out and get help Reach out to organisations that specialise in supporting mental health. On an on-going basis, the Beyond Blue Support Service offers free and immediate counselling, advice and referrals via phone, webchat or email. For more information about depression and anxiety, visit www.beyondblue.org.au. To talk to a mental health professional for free, contact the 24/7 Beyond Blue Support Service on 1300 22 46 36.



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CARTILAGE RESURFACING IMPLANT REDUCES PAIN, RESTORES HIP JOINT FUNCTION IN DOGS

A textile-based implant containing cartilage derived from stem cells reduced pain and restored hip joint function to baseline levels in a study of dogs with symptoms of moderate osteoarthritis. The study, led by researchers at North Carolina State University, Washington University in St. Louis and Cytex Therapeutics Inc., could be a significant first step toward preventative, less invasive joint resurfacing in dogs and humans.

In humans – and in dogs – a single, millimeter-thick layer of cartilage can mean the difference between an active lifestyle or painful osteoarthritis. That tiny cap of cartilage is what protects joint surfaces and allows the bones to glide over one another smoothly. Age or joint injury can cause the cartilage to degrade, leading to osteoarthritis and progressive joint pain.

“One of the holy grails of orthopedics is to replace cartilage, but there hasn’t been an effective way to do it,” says Duncan Lascelles, professor of surgery and translational pain research and management at NC State and co-corresponding author of the research. “Most of the focus is on replacing or restoring the cartilage surface with artificial materials, but regenerating cartilage isn’t possible right now. And many of the artificial products in use don’t integrate with the body.”

Farshid Guilak, the Mildred B. Simon Professor of Orthopedic Surgery at Washington University and Shriners Hospitals for Children, along with Bradley Estes and Frank Moutos, founded Cytex Therapeutics to develop an implant that could replace damaged or missing cartilage. The implant is made using a unique combination of manufacturing techniques that result in a part textile, part 3D-printed structure, which can be seeded with the patient’s own stem cells.

“Combining 3D printing with advanced textiles enabled us to engineer an implant that mimics the function of native, healthy tissues in the joint from day one after implantation,” Estes says. “We also designed it to dissolve over time so that, ultimately, joint function is transferred back to the patient’s own tissues during the healing process.”

The researchers designed a study to test the implant for resurfacing joints in dogs, a critical step in translating this technology into use for both canine and human patients.

In the study, cartilage was allowed to grow on the implant for several weeks before surgery. Then the implant was placed into the damaged area of the hip’s ball joint. Over time, the implant dissolved, ultimately leaving only the patient’s own natural tissue in the repaired hip joint.

The dogs in the study were divided into two groups – one which received the implant, and a control group which did not. Lascelles, NC State research associate Masataka Enomoto and their NC State colleagues performed the surgeries and measured subsequent joint pain and function in both groups.

Four months post-surgery, the group that received the cartilage implant had returned to baseline levels for both function and pain, while the control group never improved. The researchers also saw evidence that the implant had successfully integrated into the hip joints, effectively resurfacing them.

“What we saw is that with the implant these dogs were doing as well as or better than they would be after a total joint replacement,” Lascelles says.

“We were thrilled that the implant was so effective at restoring the activity levels of the animals,” Estes says. “After all, this is why patients go see their physicians – they want to be able to play tennis, play with their kids, and, in general, re-engage in a pain-free active lifestyle that had been taken away by arthritis.”

Lascelles hopes that the implant will address some of the issues involved with total joint replacements in young and active patients. “There are significant drawbacks to total joint replacements in the young patient,” Lascelles says. “The surgery is more complicated, and the artificial joints are only good for a particular number of years until they must be replaced, often with poorer results each time.

“This procedure is less invasive, and the implant uses the body’s own cells and integrates into the damaged area with little danger of rejection. We believe that it is an early intervention that could be a major advance in postponing joint replacements for dogs and hopefully one day for humans.”

Journal Reference: Bradley T. Estes, Masataka Enomoto, Franklin T. Moutos, Megan A. Carson, Jeffrey M. Toth, Peter Eggert, Jonathan Stallrich, Vincent P. Willard, Deborah J. Veis, Dianne Little, Farshid Guilak, B. Duncan X. Lascelles. Biological resurfacing in a canine model of hip osteoarthritis. *Science Advances*. 2021; 7 (38) DOI: 10.1126/sciadv.abi5918



JOINING RAMS?

DON'T FORGET TO CHECK FOR OVINE BRUCELLOSIS



Local Land Services is encouraging landholders to check their rams before and after joining, to ensure they are fit to do their work and avoid potential spreading of disease.

Local Land Services Veterinarian Scott Ison said it is important to ensure any rams are healthy before joining and producers should be on the lookout for signs of lameness and checking feet, as well as abnormalities with teeth, eyes, and reproductive organs. "It's important producers are checking their rams, making sure they're in good body condition with no signs of illness, so they can successfully join a flock and later breed," Dr Ison said.

"Coming up to joining, producers should be allowing themselves enough time to see how many replacements are needed, especially if any infections such as Ovine Brucellosis (OB) be found.

"OB is an infection of the reproductive tract that causes infertility in rams and less commonly abortion in ewes, which can result in considerable economic losses for producers. It can spread quickly through the ram flock and is usually introduced with new rams or strays.

"OB can cause lesions in testicles and can cause reduced or prolonged lambing, so if you are noticing any of these symptoms, please speak to a vet."

Dr Ison has also reminded landholders that rams should be adequately prepared and fit to load before they are transported to saleyards across the state, especially if they are being culled because they are lame, blind or have lesions.

Producers who sell animals that are not fit to load may be prosecuted by the RSPCA or other enforcement agencies.

"Rams, as well as all livestock, need to be transported in a way that reduces stress and minimises any risks to animal welfare," Dr Ison said.

"To ensure rams are fit to load some may need veterinary treatment and producers should be checking for common health issues such as swollen or injured testicles, lameness and blindness.

"Injuries can be detected at saleyards or abattoirs by the on-plant vet and reported to the RSPCA for investigation - our advice is if in doubt, leave it out."

To download the latest national 'fit to load' guide by Meat & Livestock Australia (MLA), visit mla.com.au/isitfittoload.

AUSTRALIA'S MOST POPULAR POOCH



@cavoodle_teddy_bear_cavoodles

If you're the owner of a Cavoodle named Charlie or a Labrador named Bella you're in good company, according to the latest data released by HCF Pet Insurance, which has revealed our nation's favourite dog breeds and names.

Australia's most popular dog breeds are the Cavoodle, Maltese Cross, and Labrador. The most popular dog names are Charlie, Bella and Ruby, although popularity of breeds and names differ across the states.

The data has been released alongside the results of a survey* conducted on behalf of HCF Australia, Australia's largest not for profit health fund, which found that people were more likely to feel positive about having insurance for their pets (74%) than for their own health (67%).

HCF Chief Officer Product and Innovation Lorraine Thomas said it was no surprise dog owners were choosing human names for their canine companions given they're often seen and treated as loved members of the family.

“We know that almost two thirds of Aussie homes have pets – in fact there are more pets in Australia than there are people, and almost 40 per cent of homes have at least one dog which is a trend on the rise now that we are spending more time working and learning from home,” Ms Thomas said.

“Their affection and loyalty make them a favourite furry companions. Dogs are also great for physical fitness and immune system development as well as being wonderful for our mental health.”

The names people choose for their dogs also reflect a sense of humour and fondness for popular culture.

While not in the top 10, all of the characters from the popular Children's TV Show Bluey feature as popular names (Bluey, Bingo, Bandit, Chilli, Trixie, Muffin, Lucky, Rusty); musical tastes are acknowledged with Elvis, Bowie, and Dolly Parton; and it appears superheros also frequent dog parks with names including Bruce Wayne, Lara Croft, Clarke Kent, The Phantom and Indiana Jones.

Ms Thomas said that just like human members of the family, it was important to plan for the unexpected when it comes to health. “HCF Pet Insurance can help with up to 80 per cent of eligible vet expenses, which can make a huge difference to the family budget if your dog suddenly has an injury or gets sick and needs treatment.

“We believe our furry friends deserve exceptional care, which is why we're proud our approach to providing uncommon care was recognised with 2021 Mozo Experts Choice Award for Exceptional Quality Pet Insurance,” Ms Thomas said.

Mum of three Jacqui Grant, who has Charlie the Cavoodle, said: “We got Charlie 4 years ago after our boys used to be obsessed with all of the dogs at the park. We had friends who had Cavoodles and after doing some research we found that the breed ticked all our boxes.

“He immediately became part of the family growing with the kids and being there to share all of the important memories. He is so affectionate with the kids and loves playing with them. He always knows what they need whether it is a cuddle during quiet time or to join in a game of footy.

“He makes friends everywhere he goes - running up to both other dogs and humans to get some attention. We couldn't imagine life without him!”



DOGS GO NUTS FOR DHA ENRICHED PEANUT BUTTER

Training our beloved four-legged friends can sometimes be a challenge, however, Australian made and owned natural supplement company, Field Day, has made it easier with the newest addition to its range, the Pooch Peanut Butter.

Developed by Vet Nutritionist, Field Day's Emily Turner says many dogs are lacking in DHA, an essential Omega-3 fatty acid contained in Field Day's Pooch Peanut Butter.

"Whilst our feline friends' diets typically consume adequate amounts of DHA thanks to the fish proteins and oils commonly found within cat food, studies have shown that our dogs aren't getting enough of this nutrient source in their diets, especially puppies," says Emily.

Emily suggests incorporating DHA rich foods into your furry friend's diet from a young age to further help with brain development and health as DHA is a major building block in the brain, and healthy neuron function is directly dependent on our dog's diet.

"DHA is found in high amounts of breast milk, so as puppies are feeding with their mothers they are getting the appropriate levels they need to develop. Once puppies are weaned and go to their forever homes, DHA needs to be incorporated into weekly meals and treats to ensure they continue to develop properly," Emily adds.

"Treats such as peanut butter can also be easily incorporated into our pooches' diet, such as making energy balls for your pooch when you're making your own." Emily adds that DHA has been shown to support brain, heart, eye and immune health in dogs of all ages. It also aids in relieving allergies, enhancing joint health and improving inflammatory conditions.

Leading Animal Behaviourist, Sophie Allan also suggests using peanut butter as a treat in stimulating toys such as lick-mats or a KONG, which has proven benefits for relieving anxiety for dogs and keeping them calm.

"Peanut Butter is seen as a high-value treat when training. The delicious nutty smell gains their attention quickly and the reward will be sure to get them to sit, stop barking or halt, whatever you require when training.

"Field Day's Pooch Peanut Butter is enriched with Algae Oil, a plant-based omega that is rich in DHA, making it a healthy treat for training your dog, whilst fueling their bodies with much-needed nutrients," says Sophie.

"Placing peanut butter in a squeeze tube is a great way to quickly and easily give a treat to a dog training in a muzzle. It is especially helpful if a dog will be left at home alone for extended periods of time, to deter them from whining or barking by keeping them occupied and happy."

Catering to all pooches, ages and breeds, Field Day's Pooch Peanut Butter is the perfect training and treat essential and one to add to your shopping list. Pooch Peanut Butter \$9.95 RRP (\$0.60 per serve*): made from human grade peanuts, antioxidants and algae oil, Field Day's Pooch Peanut Butter is nutritionally enriched with DHA to support brain, heart and immune health in dogs of all ages.

Doubling as a useful training tool, Field Day recommends using this high-value treat within problem solving and boredom buster toys and as a reward for good behaviour such as keeping still whilst grooming!

*Average serving size is based on an average-sized dog (15-20kg).



CALL OUT FOR DOGS

CONTINUED EVALUATION OF EXCITING NEW ANTI-CANCER DRUG



November was National Canine Lymphoma Awareness Month. It came with a reminder from biotech company PharmAust Ltd for pet lovers to regularly inspect their dog for lumps or bumps.

They put the call out for more pet dogs to help evaluate an interesting new anti-cancer drug shown to be safe and effective in Phase 1 and advanced Phase 2 clinical trials.

The ongoing Phase 2 trial for the drug monepantel (MPL) is finalising dose optimisation and is a prelude to a multi-institutional canine cancer Phase 3 trial to start early 2022.

The trial's principal investigator Dr Kim Agnew is leading a team of highly qualified veterinary oncologists in New South Wales, Queensland and Western Australia who are evaluating MPL in dogs that have been newly diagnosed with B-cell lymphoma and have not started any treatment.

Cancer is the number one cause of death in dogs over the age of 2. Lymphoma is one of the more common cancers and occurs in the white blood cells of the immune system. Symptoms can include tumours, lethargy, weight loss and loss of appetite.

"The key to a good prognosis with canine lymphoma is early diagnosis and this particular form of cancer is very rapidly progressive, so it's important to act quickly," said Dr Agnew.

MPL shown to be a safe and effective cancer treatment

MPL is already approved for veterinary use for a different indication and species. PharmAust is aiming to repurpose MPL as a safe and effective cancer treatment.

"During the trials to date, over 25 pet dogs have been treated with MPL for lymphoma and the results are very promising," said Dr Agnew.

"So far, we have shown that the new MPL tablet is very palatable and easy for pet owners to administer at home. Furthermore, at the recently identified optimal drug blood levels, side effects seem to be very minimal and all pet dogs that have maintained these levels over the course of treatment, have been assessed as at least stable disease by the administering veterinarians.

"Some pet dogs have continued after the trial on a combination of this optimum level of MPL and prednisolone, and all have exceeded the life expectancy of dogs that might be administered only prednisolone at diagnosis."

PharmAust was pleased to successfully meet its predetermined interim goals demonstrating both significant objective clinical benefit and significant overall response rate. It is now inviting more dogs with treatment naïve lymphoma to help complete the final optimisation of the Phase 2 trial in a bridging program before moving into the Phase 3 trial.

"PharmAust's long term strategy is to develop MPL to treat cancer in both dogs and humans," said Dr Richard Mollard, CSO of PharmAust and CEO of PharmAust's wholly owned subsidiary Pitney Pharmaceuticals Pty Ltd.

"In pet dogs with treatment naïve B-cell lymphoma and in humans with treatment refractory cancer, Monepantel displays strong evidence of anti-cancer activity in its own right. However – and perhaps more interestingly following our retrospective analysis of trial data in combination with prednisolone – Monepantel appears capable of doubling the life expectancy of pet dogs with B-cell lymphoma compared to if treated with just prednisolone alone. We now plan to formally test this hypothesis in the Phase 3 clinical trial.

"Most importantly, all dogs also appear to enjoy a high quality of life while taking Monepantel, with reports of trial participants enjoying camping and playing at the park and at the beach with their owners."

Program entry criteria

The canine entry criteria for MPL Clinical Trials include:

- Any stage lymphoma (based upon physical exam, abdominal ultrasound and thoracic Xray)
- Substage a (feeling well)
- Immunophenotype can be pending, but needs to be B-cell based on clinical characteristics
- No previous treatment, including corticosteroids (prednisolone)
- No other significant concurrent medical problems
- Good quality of life.

For more information or to enrol, please contact Dr Richard Mollard on rmollard@pharmaust.com

FIRST REVIEW OF ITS KIND PROVIDES IMPORTANT INSIGHTS INTO THE DIAGNOSIS OF STRANGLES IN HORSES

A new study from the Royal Veterinary College (RVC), analysing laboratory diagnoses of strangles across the UK, has been published in leading veterinary journal, the Veterinary Record. It paves the way for an improved understanding of the spread and control of strangles to reduce the impact of this devastating disease.

Strangles is a contagious upper respiratory tract infection, caused by the bacterium *Streptococcus equi*, which can affect horses, ponies and donkeys of any age, breed or sex with younger horses typically more severely affected. It is also one of the most prevalent infectious diseases amongst horses and ponies worldwide, carrying a very high welfare burden with up to 100% of horses in outbreaks becoming affected.

This landmark study, funded by The Horse Trust, brought together an international team from the RVC, the University of Melbourne, jDATA, Intervacc AB, Wellcome Trust Sanger Institute and the British Horseracing Authority.

Researchers analysed data from seven UK diagnostic laboratories between January 2015 and December 2019, finding that 1,617 laboratory diagnoses of strangles were recorded over the study period. However, when taking into account the number of potentially undiagnosed horses, the true number of equids affected by strangles is thought to be much higher.

Importantly, the findings of this study begin to quantify the occurrence of strangles within the UK and guide veterinary surgeons in their approach to disease diagnosis. This includes not ruling out a strangles diagnosis when a horse or pony presents with more general clinical signs of nasal discharge, with or without fever, in the absence of abscessation or swelling of the submandibular and retropharyngeal lymph nodes. More generally, the study suggested that the description of 'classical' and 'atypical' clinical signs should be revised.

The study also provides a crucial resource for horse owners in the form of an online tool (www.jdata.co.za/ses) to identify if strangles outbreaks have occurred in their area, or a region they may be travelling to with their horses. This resource is actively updated meaning that if a region is currently experiencing higher numbers of strangles diagnoses, owners can stay informed and subsequently heighten their biosecurity and hygiene protocols. This will help to reduce the spread of strangles and ultimately the impact it can have on yards, owners and horses.

The publication also reinforces the benefit of a united front for strangles research and how through laboratories, veterinary practices and owners working together, we can provide much more detailed insights into the disease, leading towards safeguarding the health of our horses.

Abigail McGlennon, PhD student in the Department of Pathobiology and Population Sciences, Royal Veterinary College, said: "Prior to the development of the Surveillance of Equine Strangles network in 2018, there was limited information available about strangles diagnoses in the UK. This publication highlights the prevalence of strangles in the UK and the variation in signs that infected horses show. The results of this five year surveillance study enable the continued development of evidence-based recommendations within the equine industry to help reduce the spread of strangles and keep our horses healthy and happy."

Nic de Brauwere Senior Welfare Veterinary Surgeon at Redwings, said: "This welcome paper clearly shows how SES is making a huge additional contribution to our understanding of when, where and how strangles is circulating in the UK at any given time. It expands research beyond the labs and into the communities that are being affected by outbreaks, giving us essential, practical insights, such as the value of diagnostic tests in helping to identify strangles cases in all their forms, and the increased outbreak risk on commercial equine premises. We are glad to have SES and the RVC as collaborators for Strangles Awareness Campaign 2022 where research outputs help each SAW to be up to date and responding to the every changing picture of strangles in the UK"

Jan Rogers, Director of Research & Policy at The Horse Trust, said: "The Horse Trust is delighted to have enabled this research, carried out by the combined expertise of the scientists involved, which has enabled the foundation of a surveillance network and highlighted key factors which can quickly be acted on by owners in order to be able to identify strangles and reduce the spread of this horrible disease. The work of these scientists fundamentally underpins the need for equine identification to become digitally based to enable accurate disease surveillance in the interests of horse wellbeing."



NEW TYPE OF HENDRA VIRUS IN FLYING FOXES



A paper detailing the findings has been published just days after the new genetic type (HeV-g2) was detected in a horse near Newcastle in New South Wales, the most southern case of Hendra yet recorded.

Hendra virus can be transmitted from flying foxes to horses, and from horses to people. Previous studies had found the virus in flying foxes in Queensland and parts of New South Wales. After monitoring flying fox samples from 2013-2021, researchers at CSIRO's Australian Centre for Disease Preparedness (ACDP) found the new genetic type in flying foxes in Victoria, South Australia, and Western Australia.

ACDP is a World Organisation for Animal Health (OIE) reference laboratory for Hendra and Nipah virus diseases. Reference expert and CSIRO scientist Dr Kim Halpin said spillover of the disease from flying foxes to horses has still only been reported in Queensland and New South Wales.

"However, because Hendra Virus Genotype 2 is so genetically similar to the original Hendra virus, there is a potential risk to horses wherever flying foxes are found in Australia," Dr Halpin said.

"It's important to note that Hendra has never been reported to spread directly from flying foxes to humans – it's always been transmitted from infected horses to humans. We expect this new genetic type would behave the same way.

"And given the similarities, while more research is needed, we expect the existing Hendra virus vaccine for horses should work against this new type too.

"This finding really underscores the importance of research into flying foxes – it's crucial to helping us understand and protect Australians against the viruses they can carry."

Another project, called "Horses as Sentinels", led by the University of Sydney and CSIRO and funded by a Biosecurity Innovation Program grant from the Department of Agriculture, Water and the Environment, detected the same genetic type earlier this year in samples collected from a horse from Queensland in 2015. Results of this research are available in preprint.

Dr Steve Dennis, President of Equine Veterinarians Australia, said the findings are a reminder there's a risk of Hendra virus wherever there are flying foxes and horses.

"Owners and any people who interact with horses can reduce the risk of infection from Hendra virus and other zoonotic viruses through vaccination of horses or humans where available, wearing appropriate PPE, and seeking veterinary attention for sick horses," Dr Dennis said.

CSIRO and the "Horses as Sentinels" project team have been working closely with vets and laboratories around Australia to implement improved tests for horses with signs of Hendra virus disease.

More information for horse owners is available at <https://www.outbreak.gov.au/for-vets-and-scientists/hendra-virus>. Peer-reviewed results of CSIRO's flying fox study have just been published in *Virology Journal*.

MORE ABOUT THE STUDY

Previous studies suggested the black and the spectacled flying foxes were the primary carriers of Hendra virus. This study found the new genetic type of Hendra in grey-headed flying foxes in Victoria and South Australia, and in the little red flying fox in Western Australia, confirming the virus can be found in four species of flying fox and in a broad geographic range of Australia.

The new genetic type was first detected in a flying fox sample from 2013, but with technology available at the time the researchers could not fully analyse its genome sequence to confirm its identity and understand its significance.

By piecing together the new virus' genome from several flying fox samples since then using the latest technology, they discovered it was indeed a new type of Hendra virus.

Ninety-eight flying foxes tested negative to the original Hendra virus, but 11 were found to carry genetic material indicative of HeV-g2.

Flying fox research is crucial to our understanding of the viruses they can carry, the factors that might lead to transmission, and steps we can take to minimise those risks.

ABOUT HORSES AND FLYING FOXES

To date, all human cases of Hendra virus infection have resulted from direct contact with infected horses. Direct transmission of Hendra virus from flying foxes to humans has not been observed.

This finding is a reminder of measures that horse owners and people who work closely with horses can put in place to reduce the risk of infection from Hendra virus and other henipaviruses. This includes vaccination, wearing appropriate PPE, and seeking veterinary attention for sick horses.

Flying foxes should only be handled by people who are appropriately vaccinated, trained, and wearing personal protective equipment. Injured or sick flying foxes should be reported to a wildlife care organisation or local veterinarian.

Flying foxes are protected animals, with two species on our nationally vulnerable list. They are critical to our environment because they pollinate our native trees and plants and also spread their seeds. Without flying foxes, we wouldn't have our eucalypt forests, rainforests and melaleucas.

Biosecurity measures will help to minimise the risk of disease transmission, while protecting these important species and their role in maintaining a healthy environment.

PNEUMONIA AND PLEURISY IN SHEEP DURING SUMMER

Both pneumonia and pleurisy in sheep can prove costly for producers, from having slow growth rates, carcass trimming or even death. Pleurisy is inflammation of the lining of the chest cavity and is seen at slaughter as translucent bands joining the lungs to the insides of the ribs.

Pleurisy typically occurs in conjunction with pneumonia, which makes sheep reasonably sick. Many sheep recover from pneumonia, so the residual pleurisy is seen at processing.

Outbreaks of pneumonia and pleurisy are caused by either environmental, animal and pathogen factors, these could include:

- dusty conditions, hot weather and excessive crowding
- inadequate nutrition, concurrent disease (e.g. internal parasites) and stress. These all impact the animal's immune system making them more susceptible to pneumonia
- pathogens include bacteria and viruses – primary pathogens like *Mycoplasma ovipneumoniae* initiate a mild pneumonia with no or mild signs – which can make the sheep more susceptible to a secondary bacterial infection which leads to severe disease

- parasitic infection from lung worm can play a role additionally, poor drenching technique can lead to aspiration pneumonia.

Agriculture Victoria Veterinary Officer Hayden Morrow said the severity of signs can vary greatly as some sheep will not show any respiratory signs except a reduction in weight gain, while others develop nasal discharge, coughing, laboured breathing, exhaustion and a lack of appetite before progressing to death.

“Clinical cases of pneumonia lead to increases in mortality, increased treatment costs and a reduction in animal welfare. However, reductions in weight gain from mild cases are also likely to be significant,” Dr Morrow said.

Agriculture Victoria advises to focus on prevention and manage risk factors, which include:

- avoid handling/transporting sheep in hot dry conditions – consider impact of mixing purchased groups of lambs from different sources (stressful but also potentially exposes lambs to new pathogens)
- ensure nutrition and access to water is optimised – ensure other major animal health issues such as intestinal worms are managed and suitable shade is available
- hosing down dusty yards and laneways before moving stock – consider impact of stocking rate on dust levels when containment feeding and avoid dusty feeds
- do not lift head above horizontal and don't drench in cradle
- new sheep could be carriers of respiratory pathogens that are new to your flock. Clinical cases of pneumonia can be treated with consultation from a private veterinarian.

CUTEST SHEEP IN THE WORLD

IS NOW ON AUSTRALIAN SHORES

Valais Blacknose sheep, known to be the cutest sheep in the world, have been born for the first time in Australia following the successful importation of embryos and semen from the United Kingdom (UK).

Head of Biosecurity Andrew Tongue said this was not only the first time the breed had been born in Australia but the first time the breed had reached Australian shores.

“The Valais Blacknose Sheep originated in the Swiss Alps, where for centuries it was used for meat and wool,” Mr Tongue said

“More recently, the animals’ adorable looks and gentle temperaments have made them popular around the globe and many families are keeping them purely as pets.

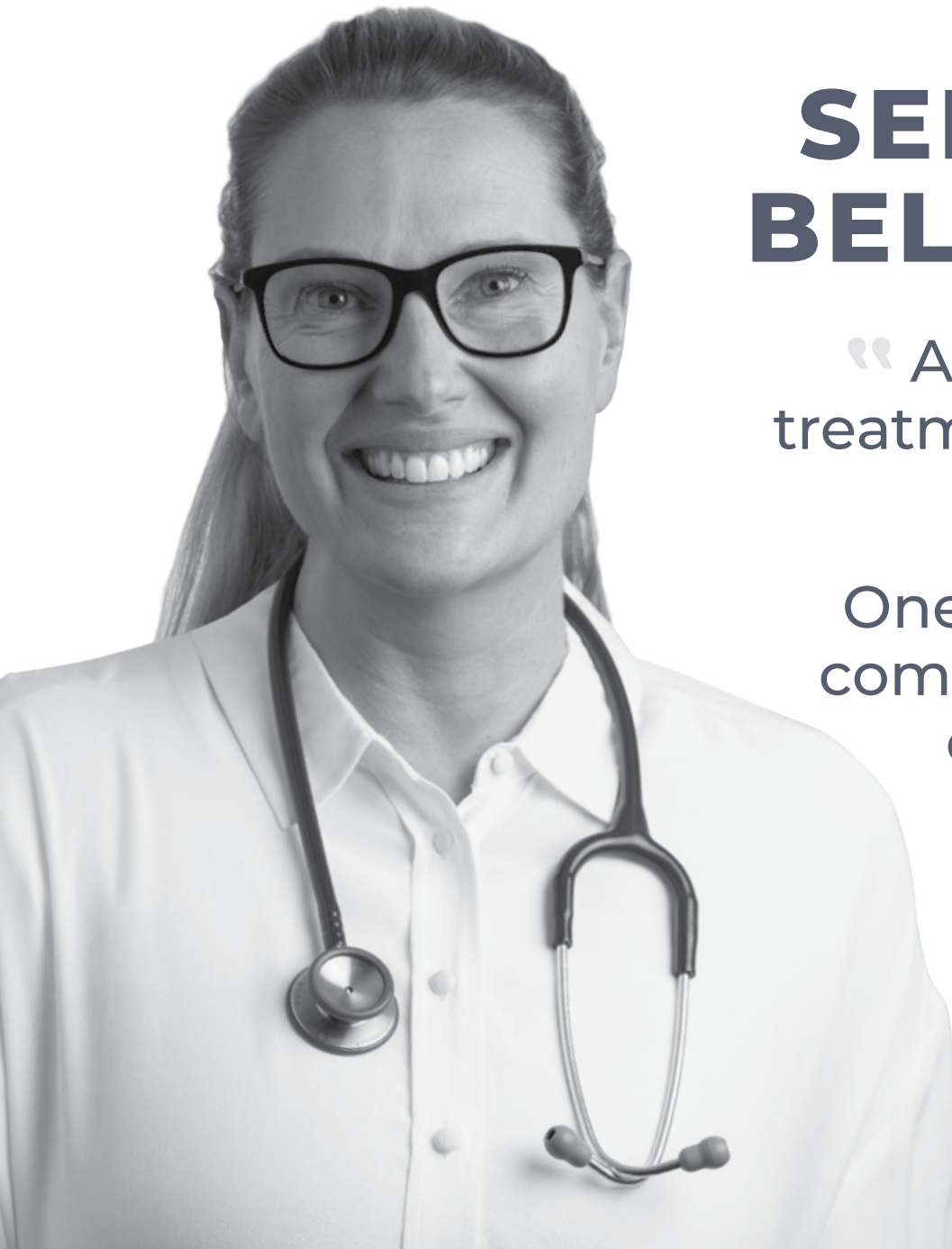
“The breed has now spread to Europe, the UK, and the US, and this year the first Valais reached Australia.

“Farmers and pet lovers have been interested in getting the Valais Blacknose breed into Australia for many years, but an Australian importer, Caprotek, finally succeeded following a request to the department to import embryos and semen from this breed.

“The department liaised with the importer to ensure the genetic material met all of Australia’s strict biosecurity requirements.

“Sheep genetic material could potentially pose a risk of serious animal diseases such as scrapie, the ovine equivalent of Mad Cow disease. Following a long process over three years, complicated by Brexit and the COVID-19 pandemic, the frozen embryos and semen were approved by the department and were able to make their way to Australia”.





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Reference: 1. APVMA number 88412. 2. De Ridder, T., Campbell, J., Burke-Schwarz, C., et al. Randomized controlled clinical study evaluating the efficacy and safety of intratumoral treatment of canine mast cell tumors with tigilanol tiglate (EBC-46). J Vet Intern Med 2021;35(1):415-429

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RSPCA – 150 YEARS OF CARING FOR ANIMALS

2021 marked 150 years of RSPCA Victoria's work caring for and protecting animals. Since its formation in 1871 when the first meeting was held in Melbourne to improve the lives of horses in colonial Victoria, Australia's most trusted animal welfare organisation has worked to better the lives of all creatures great and small, fur covered and feathered, homeless and abused, abandoned or in poor health.

The first RSPCA to be established in Australia, RSPCA Victoria has worked to rescue, rehabilitate, and rehome hundreds of thousands of animals in need. Since its inception RSPCA Victoria has advocated for changes that would end tail docking of puppies and intensive breeding operations, to improve the welfare of racing animals, to make it easier for renters to have pets, and inform major pieces of legislation, notably the Domestic Animals Act 1994.

Dr Liz Walker, RSPCA Victoria's CEO, said it was an important time to commemorate and reflect on the charity's challenges and achievements thus far.

"We are incredibly proud to commemorate this remarkable milestone and to have the opportunity to acknowledge the many dedicated people who have cared for Victoria's animals over the past 150 years. Since then, the work of RSPCA Victoria has expanded to a federation of nine RSPCA societies across Australia," said Dr Walker.

"While the organisation and community as a whole can commemorate many achievements, there is still much to be done and we remain committed to continually improving animal welfare to create a better life for animals," said Dr Walker.

Originally named the Victorian Society for Prevention of Cruelty to Animals (VSPCA), in 1871 the VSPCA hired the first two inspectors in 1871 and in 1875 VSPCA began looking beyond horses to other livestock such as ducks, geese, goats, and sheep.

In 1956 the VSPCA gained royal patronage, becoming the Royal Society for the Prevention of Cruelty to Animals (RSPCA) a name for which it is well recognised today. A not-for-profit charity that relies on the generous support of the community for more than 90% of operating expenses, RSPCA Victoria's vision is to end cruelty to all animals.

Across the state RSPCA Victoria provides community services including animal shelters, veterinary clinics, education programs, op shops and an Inspectorate that is authorised to investigate and prosecute cases of animal cruelty. Operating six animal welfare shelters that provide refuge, each year RSPCA Victoria strives to give more than 20,000 animals a second chance.

In 1974, RSPCA's administration building opened at the current Burwood East location. This was followed in 1982 by the Animal Adoption Centre which was recently renamed the Dr Hugh Wirth Animal Care Centre in honour of long serving President and Patron, Dr Hugh Wirth, who dedicated his life to animals.

Dr Wirth began his association with RSPCA Victoria in 1949, became president in 1972 and served in the role for a remarkable 43 years.

Since its inception, RSPCA Victoria has worked to prevent cruelty around the state, growing the inspectorate to investigate cases of cruelty, opening veterinary clinics to service the public, developing education programs and working in advocacy. Throughout its history, it has continued to care for and find loving forever homes for the thousands of animals in need that come through the doors.

In addition to caring for animals in need, RSPCA Victoria has been integral to a number of Victorian animal welfare milestones, tirelessly advocating for changes to prevent cruelty. Since its inception RSPCA Victoria has worked to influence changes to legislation to improve animal welfare, including that which resulted in the Prevention of Cruelty to Animals Act 1986 (POCTAA). RSPCA Victoria was also instrumental in the Domestic Animals Amendment (Puppy Farms and Pet Shops) Act which was passed in Victorian Parliament in 2017 to reform the dog breeding and pet shop industries in Victoria and better regulate the sale of dogs and cats.

Additionally, RSPCA Victoria played an instrumental role in the new laws on pet rental reform which came into effect in 2020 after years of campaigning. Now, landlords cannot unreasonably refuse tenants with pets, ultimately helping to support people to create better lives for their pets, resulting in positive animal welfare outcomes and happier communities.

Dr Walker said, “RSPCA Victoria’s progressive work in animal welfare has paved the way for the organisation, now part of the RSPCA Federation with counterparts in every state and territory.”

Backed by 150 years of experience and history, the RSPCA remains one of Australia’s longest-standing, most loved and most trusted charities, strongly positioned to deal with the modern-day challenges of the 21st century.”

Dr Walker also said, “We know animals are good for people and contribute to our lives in a myriad of ways so while we pause for a moment to commemorate and thank those who have supported our work over the last 150 years, our commitment to the Victorian community is to continue to find ways to improve the lives of all creatures great and small.”



Dr Liz Walker, CEO, RSPCA Victoria



RSPCA CELEBRATED IN STAMPS

Australia Post is celebrating 150 years of the Royal Society for the Prevention of Cruelty to Animals (RSPCA) with the release of five stamps representing their mission and practice: research, shelter, protection, certification and advocacy.

Australia Post Group Manager Philatelic Michael Zsolt said the RSPCA deserves to be celebrated for their tireless work towards preventing animal cruelty.

“The RSPCA’s long history of advocating for animal welfare issues is something all Australians are proud of. The stamp designs really show the breadth of the RSPCA’s work across companion animals, farm animals, animals in sport, recreation and industry, and wildlife.”

RSPCA Australia Chief Executive Officer Richard Mussell said the stamps were a fitting addition to the 150th anniversary commemorations. “It’s wonderful to see the RSPCA’s work over many years acknowledged in this way by Australia Post,” Mr Mussell said.

“These stamps are a wonderful opportunity to reflect on our great breadth of work and what has been achieved in what is an important milestone year for us.”

The stamps and associated products are on sale at participating Post Offices, via mail order on 1800 331 794, and online while stocks last.



SAVVY SCRUBS

We all deserve to look and feel good at work. Yet our essential workers spend everyday in unflattering, uncomfortable and ill-fitting work scrubs.

But that's all about to change after two Aussie veterinarians and a fashion designer joined forces to create 21 Scrubs – a range of stylish and fashion savvy scrubs that are practical, flattering, comfortable and durable as well as water, hair and stain-proof and they come with a signature stethoscope holder.

21 Scrubs is the brainchild of three working mums and 'boss ladies'; twin sisters and veterinarians Drs Audrey and Alison Shen and fashion expert and entrepreneur Rebecca Lau Marsh. Audrey and Alison own and operate a successful mobile vet business and both feature on the TV series Bondi Vet.

Rebecca has created two profitable fashion retail and e-commerce stores, and has had the pleasure of dressing international and local celebrities.

After working in the veterinary industry for over 15 years and wearing old-fashioned scrubs, Dr Audrey and Dr Alison became frustrated with the lack of choice, and in particular material and style of scrubs available. "Not only were our old scrubs unflattering and ill-fitting, but the fabric was terrible, it attracted hair and lint, and absorbed liquids, stains and smells," said Dr Audrey.

"We used to joke that we wore pyjamas all day and felt so unprofessional in such a professional industry. We understand that scrubs have to be practical. However, practicality doesn't mean you have to compromise on looking fashionable and feeling good."

Initially, the sisters started researching materials in the hope of just making their own scrubs for work. Then, when the COVID-19 pandemic hit in 2020, they quickly realised there was a market for fashion savvy scrubs and a desperate need for it among essential workers.

"COVID-19 really highlighted how important an essential worker's job and role is. We have to keep working despite the challenges and risks involved," said Dr Alison

"We want our essential workers to be inspired and be given the confidence boost and positivity they deserve; to reward them and acknowledge the important work they do to keep everyone safe and healthy. What says this more than functional workwear that allows them to look confident, professional, trustworthy and smart every single day."

Knowing they needed their scrubs to be flattering and functional, they called upon friend and fashion expert Rebecca, to help design the range. "When Audrey and Alison approached me with the idea, I loved it and said yes straight away," said Rebecca.

"We had a very clear vision to create workwear that was functional, that you could move in, was comfortable and of course flattering for all shapes and sizes. We also wanted to create workwear that had an 'all day to night' look, that you can wear out after work or be seen wearing out of work."

Soon after many Zoom catch ups, nighttime brainstorm sessions after kids were asleep, research, testing and trialing, in 2021 their dream turned into a reality and 21 Scrubs was born.

"We are incredibly proud of the scrubs range we have created," said Dr Alison. "Each style has their own defining cuts and features, and all scrubs are made from stretchy, crease-proof, durable, comfortable and eco-friendly lightweight fabric, that most importantly is hair-free, water and stain repellent, fast-drying and squat-proof."

21 Scrubs offers a corporate sample box program where potential customers are sent a sample box of scrubs to try on, so they can be confident about the style and sizes they're ordering.

Embroidery, monogramming and bulk discounted pricing is available. For more information visit www.21scrubs.com.au



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AUSTRALIAN START-UP FIGHTING PUPPY SCAMS

Australian start-up, PETspot, is using technology to battle an increasing number of puppy scammers who have emerged in the past 18 months to take advantage of soaring demand for pets due to COVID-19 lockdowns.

According to the ACCC, as of September 30 2021, there have been 2,544 reports of pet scams with losses totalling more than \$3 million this year, compared with just 498 complaints in 2019.

PETspot, a start-up run by three University of Technology Sydney alumni, allows safe pet transactions to take place through its online platform. The company independently verifies breeders on the platform and guarantees the buyer's money once a payment is made, offering buyers a safe and simple way to find a companion responsibly.

Nick Figliano, the 23-year-old co-founder of PETspot said he came up with the idea for the company after he was nearly scammed out of thousands of dollars when trying to buy a puppy.

"I realised I was dealing with a scammer before I handed over any money, but many others aren't so lucky. The industry is purely cash-based and there was no payment system that covers you for pet scams — until now."

"That's where PETspot comes in, providing a secure way to pay for a dog or puppy and linking buyers directly with responsible sources. We've created Australia's first payment system that is built specifically for pets."

"We're confident in providing consumers with a guarantee of the safety of their transaction because of the rigorous checks and balances we have in place before a breeder is allowed to list themselves on our website," he says.

Mr Figliano teamed up with two of his mates, Joseph Comisso and Jeremy Lay, to start PETspot and with the onset of COVID-19 the business has taken off.

There are now more than 200 authenticated breeders on the website and to date, \$3 million dollars worth of dogs and puppies have found a home through the platform.

PETspot has created a strenuous code of ethics to fact-check dog breeders which includes providing proof of registration with regulatory bodies, showing health tests of the litter of puppies and an identity check.

For more information, visit www.thepetspot.com.au.



A GAME CHANGER IN THE PET FOOD INDUSTRY



The pet food industry has received a lot of criticism of late, with concerns over the safety of some brands coming to light. The industry is largely self-regulated, and use of the likes of sulphur dioxide, sodium and potassium sulphate preservatives only needs to be disclosed if the company volunteers to do so. More owners are beginning to realise that they have been feeding their beloved fur babies potentially harmful ingredients that they would never feed themselves.

However ethical and honest brands are starting to make their move in the market. Australian Pet Organics (APO) is a brand that has originated from Sydney which has gone as far as investing in becoming certified organic.

APO came about when Todd discovered that one of his dogs, Tank had Spina Bifida. By the age of 7, Tank's legs had started to give way. It was hard for him to get up in the morning and run around and play with his sisters. The vet suggested that surgery would be the best option.

Given Todd's history with invasive surgeries himself, he knew that surgery would be very risky for Tank so he started testing alternatively options. He fed Tank bone broth, turmeric and Rose Hip, among other ingredients and within two weeks, Tank was back to being able to play and was mobile again. Two years later, he does still have Spina Bifida, but the inflammation has reduced and he is living a happy and pain free life.

APO will launch with a range of pet supplements and treats designed to help reduce inflammation, heal digestion and target joint health. The range was developed by a vet-nutritionist who is also a conservation scientist and all products have been tested on humans (yes you read that right!). APO also support a variety of animal charities including Deaf Dog Rescue Australia, Australian Working Dog Rescue and Bull Terrier Rescue Australia.

To find out more, head to www.aporganics.com.au

AIRTASKER HELP AUSSIE PETS ADJUST POST-LOCKDOWN

During lockdown, Aussie pets became accustomed to their owners being home all day everyday, and are set to struggle as their owners return to life, work and study.

Luckily, Airtasker "Pawfessionals" are on hand to meet the increase in demand from pet owners looking to help furry friends adjust to a COVID-settled world. Airtasker data unveiled an increase of:

- 44% in training and psychology from July to October 2021
- 125% in pet sitting/daycare from September to October 2021
- 49% in dog walking tasks from July to October 2021

As Aussies start to settle back into a life out of lockdown, data from Airtasker reveals pet owners are turning to pawfessionals to tick off their pet-parent to-do lists, with a 38% increase in pet category tasks from September to October.

Aussie pets have been reaping the benefits of their owners' mandated home time over the past year, with more play time, cuddles and walks offered than ever before. As a result, Aussie

vets are urging owners to look for symptoms of pet's separation anxiety as they adjust to being alone during the day.

Home-alone pet frets are a priority for many owners, with posted tasks for pet psychologists and trainers (+44% since July) and pet sitters (+61% since July and +125% between September and October), amongst the most in demand tasks on the platform.

Other popular requests include dog walking which has seen a 49% increase in tasks since July, with average task price of around \$60, as people look to ensure their pets are still getting out and about. Pet grooming has also spiked by 36%, as owners look to pamper their pooches after months of home haircuts.

NSW Tasker, Louise Marshall has more than 35 years experience in pet care, and offers safe and secure pet transportation on Airtasker, as well as pet sitting. "Lockdown lifting has caused my profile to go gang-busters, with a huge increase in requests from people wanting their pets looked after or transported to a pet sitter or friend, it's allowed me to build up a bank of entirely new clientele!"

Airtasker is a trusted community marketplace that connects people who need work done with people who want to work. People and businesses can simply post a task and then choose from rated, verified and reviewed people ready to work straight away. Founded in 2012, Airtasker has grown to support more than 3.6 million members across Australia, with 30,000 monthly active Taskers. In 2020, Airtasker was named as one of Deloitte's Technology Fast50, amongst the fastest growing established tech companies in Australia.

CBD OIL CAN HELP MANAGE CANINE OSTEOARTHRITIS

The research base on the clinical use of CBD oil is rapidly expanding, and so is our understanding of the role that the endocannabinoid system plays in the progression of osteoarthritis in dogs.

While the conventional treatments for canine osteoarthritis do work well in many cases, the symptoms of osteoarthritis inevitably worsen as a dog gets older. Eventually, there comes a time when these treatments don't always provide enough relief – and this is when CBD oil may help.

When administered appropriately as an adjunct therapy, CBD oil can benefit dogs with osteoarthritis. Not only can CBD reduce inflammation and pain levels, it can also improve mobility.

Even two weeks after the dogs stopped taking the CBD, those in the higher dose groups were still showing improvement. This indicated that CBD was in fact addressing the underlying inflammatory issues – not simply masking the pain.

HOW TO PRESCRIBE CBD OIL FOR OSTEOARTHRITIS

We at CBD Vets Australia recommend that a pre-treatment checkup and baseline blood test are performed before starting treatment with CBD oil.

In the trial described below, dogs with osteoarthritis were administered a full-spectrum CBD oil at an oral dosage of either 2 mg or 8 mg per kilogram of bodyweight twice daily.

The dogs in the study were assessed before the trial began, as well as at two and four weeks into treatment. The researchers found that the 2 mg per kilogram of bodyweight dose was effective in reducing the dogs' visible signs of pain and significantly improving their activity and mobility. However, investigations in dogs have shown CBD to be safe in doses as high as 10-20mg/kg/day.

To achieve medicinal benefits from CBD oil for pets, the dose doesn't usually have to be so high, though it is a good indication of the safety profile. Generally, it's recommended that vets prescribe CBD oil for osteoarthritis on a 'start low and go slow' protocol.





RESEARCH ON THE CLINICAL EFFICACY OF CBD OIL

The 2018 trial saw single-dose pharmacokinetics performed using two different doses of CBD enriched (2 and 8 mg/kg) oil. Thereafter, a randomized placebo-controlled, owner blinded study was conducted. Dogs received one of two treatments: CBD oil (2 mg/kg) or placebo oil every 12 h. Each treatment lasted for 4 weeks with a 2-week washout period.

Clinically, the researchers found that canine brief pain inventory and Hudson activity scores demonstrated a significant decrease in pain and increase in activity with CBD oil. Veterinary assessment showed decreased pain during CBD treatment. The study concluded that 2 mg/kg of CBD twice daily can help increase comfort and activity in dogs with OA.

Another study explored the therapeutic potential of both naked and liposomally encapsulated CBD in a 4-week, randomized placebo-controlled, double-blinded study. The researchers found that CBD significantly decreased pain and increased mobility in a dose-dependent fashion among animals with osteoarthritis. Liposomal CBD (20 mg/day) was as effective as the highest dose of non liposomal CBD (50 mg/day) in improving clinical outcomes.

Even two weeks after the dogs stopped taking the CBD, those in the higher dose groups were still showing improvement. This indicated that CBD was in fact addressing the underlying inflammatory issues – not simply masking the pain. No significant detrimental impact of CBD oil was observed in the study period.

POTENTIAL SIDE EFFECTS OF CBD OIL FOR DOGS

The most common side effects from CBD observed in dogs are gastrointestinal changes, such as mild diarrhea and reddening around the ears. Side effects depend on the delivery route and are often mitigated by careful, monitored dosing regimens.

Also, it's important to be aware that dogs have a higher number of receptors for psychoactive cannabinoids in their brains than humans, which means THC may not be safe. To avoid accidental ingestion of THC and ensure the safety of pets, it's paramount that owners avoid acquiring cannabis treatments from black market sources, which are often untested and may not contain what is stated on the bottle.



CASE STUDY

TREATING 12-YEAR-OLD SHIMANO'S OSTEOARTHRITIS WITH CBD OIL

For Tracey Jolley's beloved 12 year old Staffy Cross, Shimano, it has been a difficult journey since a severe elbow infection several years ago progressed and became chronic, leaving her with painful osteoarthritis.

After chatting to her local vet, Tracey got in touch with CBD Vets Australia to see whether CBD oil could help manage Shimano's pain and mobility issues, and help improve her quality of life. Soon after, Shimano commenced treatment on a low dose, which is still being gradually increased.

On her first day of treatment, Shimano was administered 0.1ml once daily for three days. Slowly, the dosage was worked up to 0.42ml based on Shimano's body weight in the morning and at night. So far, Tracey has been encouraged by the improvements she has seen in Shimano's mobility and comfort levels.

"She's walking a wee bit faster than what she used to - she used to just dawdle, but now she can have a little spurt of energy on her walks."

"There are times when she has a swim. But if she's having a day when she is feeling a bit sorer, like on a cold morning, she'll be a bit slower."

"Her night times are normally her better times. I find that she's holding her own. Some days she's just so happy, and you can see in her face that she's feeling more relaxed and content in herself."

Given the benefits she's seen so far, Tracey plans on continuing with Shimano's course of treatment with CBD oil. "We'll stay on it, but I would like to see the benefits a bit more over the long term."

"You've got to keep in mind too that with her elbows the way they are, she would prefer to just relax and chill and I'm happy with that. It would be like if you or I had a problem in our legs that won't let us walk very far or go fast. We'd just prefer to take it easy."

"Overall, on some days she just looks like such a happier dog. She doesn't look as sad as she used to. I don't care about anything else, if she's not in pain then I'm happy to keep her on it. As long as she's happy and not in pain, that's all that matters to me."



“
In the cases studied, the tumour was destroyed in seven days and full wound healing observed in 96% of cases, with no significant adverse effects on the dog.
”

THE INNOVATIVE NEW TREATMENT FOR CANINE MAST CELL TUMOURS

References 1. STELFONTA Product Insert APVMA number 88412. 2. McNeil EA, Prink AL, O'Brien TD. Evaluation of risk and clinical outcome of mast cell tumours in pug dogs. *Vet Comp Oncol.* 2006 Mar;4(1):2-8. 3. Murphy S, Sparkes AH, Blunden AS, et al. Effects of stage and number of tumours on prognosis of dogs with cutaneous mast cell tumours. *Vet Rec.* 2006;158(9):287-291. 4. Garrett LD. Canine mast cell tumors: diagnosis, treatment, and prognosis. *Vet Med (Auckl).* 2014;5:49-58. 5. Lowe R, Gavazza A, Impellizeri JA, Soden DM, Lubas G. The treatment of canine mast cell tumours with electrochemotherapy with or without surgical excision. *Vet Comp Oncol.* 2017 Sep;15(3):775-784. 6. Kiupel M, Camus M. Diagnosis and Prognosis of Canine Cutaneous Mast Cell Tumors. *Vet Clin North Am Small Anim Pract.* 2019 Sep;49(5):819-836 7. Monteiro, Beatriz & Boston, Sarah & Monteith, Gabrielle. Factors influencing complete tumor excision of mast cell tumors and soft tissue sarcomas: A retrospective study in 100 dogs. *The Canadian Veterinary Journal. La revue vétérinaire canadienne.* 2011 52. 1209-14. 8. Brodbelt D. Perioperative mortality in small animal anaesthesia. *Vet J.* 2009 Nov;182(2):152-161

Virbac is pleased to announce the launch of Stelfonta®, a breakthrough injectable nonsurgical solution for MCTs in dogs. Stelfonta is a targeted intratumoural treatment for dogs that does not require long-term drug treatment or general anaesthesia. A single treatment destroys the mast cell tumour completely in 75% of observed cases and 87% of tumours with up to two treatments.

MCTs are the most common form of skin cancer in dogs, accounting for up to 21% of skin cancer cases. Treatment for MCTs options include surgery, chemotherapy and radiation, however, these treatments may not be appropriate for every dog.

Until now, surgical removal of the tumour has been standard, but surgery can pose challenges, such as accessibility of the tumour making it difficult or impossible to obtain sufficient margins that can lead to amputation to adequately remove the tumour as well as anaesthetic risks, especially in senior or brachycephalic pets. Many dog owners are keen to avoid surgery or anaesthesia for their family member.

Stelfonta is an innovative yet simple treatment which provides a high tumour elimination rate, rapid healing, and a speedy return to a good quality of life for the pet. In the cases studied, the tumour was destroyed in seven days and full wound healing observed in 96% of cases, with no significant adverse effects on the dog. The effects need to be seen to be believed.

Stelfonta is an intratumoural injection indicated for the treatment of non-metastatic (WHO staging):

- Cutaneous mast cell tumours (located anywhere on the body, legs or head in dogs), and
- Non-metastatic subcutaneous mast cell tumours located at or distal to the elbow or hock in dogs.

Tumours must be less than or equal to 10cm³ in volume and must be accessible to intratumoural injection.

It is administered by injection directly into the tumour mass and generally, dogs do not require sedation or local or general anaesthesia during treatment.

Stelfonta® contains tigilanol tiglate, a biologically active pharmaceutical compound extracted from the seed of the native Australian blushwood (*Fontainea picrosperma*) tree found in the North Queensland rainforest. Tigilanol tiglate was discovered and developed by Australian company QBiotics and has been extensively researched over many years.

Tigilanol tiglate works locally by stimulating the immune system, resulting in destruction of the tumour and the tumour's blood supply, followed by rapid healing of the site with minimal scarring. Complete healing of the resulting wound following tumour destruction is typically within 6 weeks.

Stelfonta has a unique mode of action with three interrelated effects that are responsible for its anti-tumour effectiveness:

- Oncolysis of tumour cells that are in direct contact with Stelfonta. This occurs within the first hours following treatment and results from disruption of mitochondrial functioning and tumour cell membranes.
- Stimulation of an acute inflammatory response with swelling and erythema extending to the tumour margins and immediate surroundings. This inflammatory response is normal and contributes to the activity of Stelfonta by causing localised hypoxia and recruitment and activation of innate immune cells, which then target the tumour mass and release reactive oxygen species, proteases, and cytokines. This acute inflammatory response generally resolves within 48 to 96 hours.
- Increased permeability of tumour vasculature leading to tumour vascular destruction due to activation of the protein kinase C.

Stelfonta has also received approval from regulatory agencies in Europe, the United Kingdom and the United States for the treatment of canine mast cell tumours. Since its launch in the UK and Europe, many veterinarians who have used it to treat canine MCTs have reported satisfactory experiences and would recommend Stelfonta to colleagues.

Stelfonta is now available to veterinarians throughout Australia as an alternative to surgical treatment of MCTs. To learn more visit vet-au.virbac.com/Stelfonta and complete the interactive CPD modules. For more information please speak to your local Virbac representative or email stelfonta@virbac.com.au





REFUGE FOR PETS OF DOMESTIC AND FAMILY VIOLENCE

The Australian Institute of Criminology (AIC) reported that 1 in 10 women have experienced domestic and family violence during the Covid Pandemic.

But there's an interesting fact that often goes unreported: One third of pet owners delay leaving a violent home for fear for their pets lives. Multiple studies have shown that domestic abusers often seek to manipulate their victims by threatening or harming pets.

The Safe House for Pets Program has been created by Second Chance Animal Rescue Inc. (SCAR) to provide temporary care for the pets of owners facing enormous challenges as victims of domestic and family violence.

Why is this needed? Because only 3% of domestic violence shelters across the country accept pets.

These owners and their pets have endured a lot of hardship and their bond runs deep. During Covid the need for this program is greater than ever. And the funding has run out.

The Safe House for Pets Program is a vital program within the community and a much needed step to assisting families escaping harmful and violent situations, impacting the lives of hundreds of pets and their owners.

'We safely house the pets of people escaping violent situations and look after these animals while their owners seek safe refuge. Once they have secured permanent safe housing we reunite them.' Explains Marisa Debattista, SCAR CEO

'The tears and look of pure joy on owners faces when they are reunited with their pets again after a traumatic time is just incredible says Marisa. But they need support to carry out this important work.

'Now more than ever, funding is hard to come by and donations have dwindled with the Covid Pandemic.' Marisa explains.

'We are receiving calls daily asking for help and we try never to turn away any pet owners needing help, but Second Chance is struggling every day to make ends meet and we are looking for a miracle.' she says.

SCAR was established in 2008 in the lounge room of SCAR Founder and veterinary nurse, Marisa Debattista, as she realised that too many dogs and cats were being put to sleep simply because pounds and shelters didn't have the space to keep them. After years of fundraising she has moved the shelter from its previous home in Campbellfield to a new facility in Craigieburn.

The Shelter and Animal Hospital facility in Craigieburn rescues animals, due to be euthanised, from other pounds and shelters and offers them a second chance at finding their forever homes. The Facility also offers affordable veterinary care and free pet food and medical care to the pets of people struggling financially.

To support Second Chance and their vital work please donate at secondchanceanimarescue.com.au

SPACECOWS: CSIRO USING AI TO TACKLE FERAL HERDS IN THE TOP END



CSIRO scientist, Dr Andrew Hoskins, is leading the project.

Unmanaged feral cattle and buffaloes have a huge impact on biodiversity including land degradation, overgrazing of native vegetation, erosion and destruction to rivers and wetlands.

CSIRO and Microsoft are working on the digital twin project, dubbed SpaceCows, as part of the collaborative satellite herd-tracking program announced by CSIRO last year, which aims to turn the destructive pests into economic, environmental and cultural opportunities for Indigenous communities across the region.

SpaceCows uses Microsoft technologies to create a digital twin of the land by ingesting data, via satellites, from GPS-tagged animals, as well as terrain and weather data.

CSIRO research scientist, Dr Andrew Hoskins, said the ability to predict the movement of the animals and the accessibility of their location can help inform important decisions about feral animal management.

“The biggest challenge for feral animal management is locating the animals across sometimes inaccessible terrain,” Dr Hoskins said.

“Microsoft’s technologies harness data from tagged animals and Low Earth Orbit satellites, enabling us to see the landscape and forecast the movement of feral herds.

“These insights are critical for Indigenous rangers to determine the best time and place to ethically muster or to decide if an alternative population control measure is needed.

“Feedback from rangers on the ground will be used to finesse the machine learning models which, when combined with up-to-the-minute space sourced data, will then help rangers make informed real-time decisions about managing feral animals and allocating resources.”

Artificial intelligence will also be deployed to help plan the best routes for rangers to reach and manage the animals using quad bikes or helicopters, factoring in issues such as terrain and on-ground conditions to maximise impact.

Head ranger and Traditional Owner at Normanby Station in Cape York, Mr Vince Harrigan, said combining science with the cultural management practices that Aboriginal communities have always maintained will be a big benefit for everyone.

“The project gives us the latest technology to help with land management and tracking cattle, but also provides training with drones and tablets, which is a big thing for our mob, especially the younger ones,” Mr Harrigan said.

“It gives them another opportunity to utilise their skills and become more productive in getting the data needed to get the land to where we want it to be.”

Lynn McDonald, Azure Space Lead, Microsoft Australia said, “This is an important example of how greater access to space-enabled technologies can have a positive effect on critical environmental challenges in Australia.

“Microsoft technologies, CSIRO science and Indigenous knowledge combined have the potential to have significant impact, protecting important environmental and cultural sites for future generations.”

The SpaceCows project is supported by the Australian Government’s Smart Farming Partnership initiative.

“This project picks up on the essence of what the Smart Farming Partnerships initiative is aiming to achieve,” said Minister for Agriculture and Northern Australia, David Littleproud.

“It’s bringing together scientists, traditional owners and the private sector to find technological solutions that help address complex problems.

“This will not only benefit the environment, it will also lead to positive economic outcomes for Indigenous land managers and improve animal welfare outcomes for livestock in the top end.”

The SpaceCows project is an extension of the Healthy Country AI partnership with CSIRO and Indigenous organisations, which has already helped protect Magpie Geese in Kakadu National Park and endangered turtles nesting on Cape York.

A collaborative initiative, SpaceCows is a partnership between CSIRO, the North Australian Indigenous Land and Sea Management Alliance (NAISMA), satellite IoT company Kinéis, James Cook University, Mimal Land Management Aboriginal Corporation, Aak Puul Ngangtam, Normanby Land Management, Charles Darwin University and Microsoft.



Feral animal management is often challenging in remote areas.
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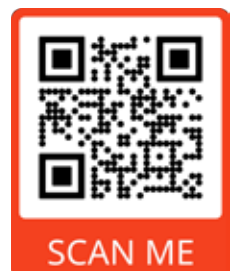


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