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November/ December 2023
VETERINARY NURSING IN ACTION

SPECIAL FOCUS

Backyard Chickens

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Domestic chickens are becoming popular as companion animals. In this issue, we dive into what to keep in mind when taking a husbandry history for your avian patients.

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NAVTA BOARD REPORT

FROM THE EDITOR

NAVTA Reiterates:

"Our focus is on higher utilization, better wages, scope of practice, and title protection, not Veterinary Professional Associate Position."

The Board of Directors of the National Association of Veterinary Technicians in America (NAVTA) unequivocally asserts and reiterates its statement from January 2023 that NAVTA will continue to focus its time, energy, money, and human resources on the top priorities of improving Veterinary Technician utilization and wages, defining a uniform scope of practice for all credentialed Veterinary Technicians, and protecting the Veterinary Technician title. NAVTA will not be prioritizing the development of any "mid-level practitioner" or "veterinary professional associate" positions before these other critical issues are addressed.

The recent launch of a website developed by the Coalition for the Veterinary Professional Associate (CVPA) ignited a flurry of conversation on social media, most of which denounced the Coalition's efforts as mistimed and unnecessary. NAVTA President Jamie Rauscher, LVT, echoed those sentiments, saying, "There are higher priorities and bigger issues that need to be fixed first in the Veterinary Technician world. We need to ensure every practice knows how to and actually utilizes their Veterinary Technicians to the highest degrees possible. We need to increase the average wage of a credentialed Veterinary Technician to an actual livable wage. We need to harmonize the scope of practice of all credentialed Veterinary Technicians. And we need to protect the title of 'Veterinary Technician' so that uncredentialed individuals are not allowed to use that title. Those are the things that are important to the profession. Those are the areas where NAVTA is putting its resources."

NAVTA was invited in February 2023 to participate in the CVPA's meetings and conversations. This invitation came as a result of NAVTA's January 2023 public statement declaring NAVTA's strong desire to be proactively involved in the conversations and developments with regard to the mid-level practitioner position. Should there be other groups formed related to this topic, NAVTA will seek to have a representative at those tables, too.

NAVTA's role on the CVPA is to represent Veterinary Technicians and bring to the CVPA the concerns of NAVTA's members and the Veterinary Technician profession. NAVTA's Immediate Past President, Ashli Selke, CVT, is NAVTA's representative on the CVPA.

"The NAVTA Board of Directors believes it is critical that NAVTA be at the table for these conversations, to

NAVTA JOURNAL

NAVTA

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[H]aving a seat at the table does not mean that NAVTA supports this new position . . . It is imperative that NAVTA be involved in these discussions on behalf of the entire Veterinary Technician profession.

have a say in the decisions and outcomes, and to ensure the Veterinary Technician profession is not harmed in any way by the proposal to create a new veterinary position," Selke said. "But having a seat at the table does not mean that NAVTA supports this new position. It is a strategically intelligent move on NAVTA's part to be part of these conversations now, rather than trying to respond or react to the outcomes later on, should they come to fruition. There are only three Veterinary Technicians on the CVPA—the rest of the Coalition includes veterinarians, lawyers, business people, and association executives. It is imperative that NAVTA be involved in these discussions on behalf of the entire Veterinary Technician profession. In fact, it would be a dereliction of duty if NAVTA were not involved in these conversations."

NAVTA has set up an online portal for Veterinary Technicians to submit their comments, questions, and concerns about the mid-level practitioner or veterinary professional associate position. **Click here** (or copy and paste this link in your browser) to begin that process: **https://shorturl.at/LNV37**. Your input will be delivered directly to the CVPA leadership.

Indiana Veterinary Technician Association

SAVE THE DATE—The Annual Membership Meeting is December 1st!!

Free stuff is always good, but free CE is even better! Join us in person on Friday, December 1st for IVTA's Annual Membership Meeting in West Lafayette. Meet you IVTA Executive Board, enjoy free food, and earn 1.0 hours CE from Megan Brashear, BS, RVT, VTS (ECC) as she presents *Fungus Among Us—Blastomycosis*. This event is FREE to our members, and we will offer discounted rates for new members that sign up that day! Follow us on Facebook **(facebook.com/InVTA)** and stay tuned for more details!

License Renewal

And speaking of CE… it's time to renew your license! The renewal period for RVT licensure is now open. RVT licenses expire on January 1st of even-numbered years. You must complete 16 hours of CE credits between January 1st, 2022 and January 1st, 2024 to maintain an active license. More information and links to online renewal, are listed in the box below.

— Kari Brubeck, RVT

LICENSE RENEWAL QUICK LINKS

> **GENERAL INFORMATION:**
www.in.gov/vetboard/rvt-licensing-landing-page/

> **RENEWAL APPLICATION:**
www.in.gov/pla/files/Generic-RVT-Renewal-2022.pdf




New Jersey Veterinary Technician and Assistant Association

NJVTA at Fetch Coastal

The New Jersey Veterinary Technician and Assistant Association is excited to attend Fetch Coastal this October. Each year this conference gives the NJVTA a great opportunity to connect with veterinary nursing team members from all over New Jersey as well as some surrounding states. If you are attending Fetch Coastal this year, be sure to stop by the NJVTA booth for some great swag and to participate in giveaway contests!

Tech Talks Conference

Everything is coming together for the NJVTA's 29th annual Tech Talks Conference which will be held December 3. Each year the organization sends out a survey to ask their members to share topics they want to learn about. Based on the survey results, the conference will have 3 tracks: Clinical, Mentorship, and Wellness!

Based on the survey results, the conference will have 3 tracks: Clinical, Mentorship, and Wellness!

Thanks to all the amazing sponsors, this year will not only have multiple great tracks but will also have a meet and greet happy hour event the night before and the incredible Amy Newfield, MS, CVT, VTS (ECC) as the keynote speaker for the conference!

School News:

The Bergen Community College Veterinary Technology program works hard to set their students up for success and provide them with the tools to have a fulfilling career in veterinary medicine. The program directors are excited as they started the process to create a SCNAVTA Chapter with 52 members! The students were also recently treated to a quest lecturer. Peg Wheeler MS, LVT, CVBP, Career Coach, spoke to the students about mentorship and the need to find and align themselves with people who can help them see and envision their own goals for a lifelong career in veterinary medicine. Ms. Wheeler has almost 50 years in the profession and gave the students real life scenarios where having someone to guide her through and stand with her during those tough times made her the technician she is today. The students truly appreciated her visit.

— Chrissy Giovannielli, CVT, VTS (SAIM)
NJ NAVTA State Representative

The Tennessee Veterinary Technician Association

TVTA Fall Veterinary Conference

The Tennessee Veterinary Technician Association (TVTA) has just completed a very successful Fall Veterinary Technician Conference in Pigeon Forge, TN. We had 100 attendees and we hosted our first exhibit hall. The topics were varied, including animal research, surgical asepsis, bandaging, hematology, fear free handling, and large animal restraint. We sold TVTA T-shirts and quarter zips as well.

West Tennessee Conference

Our West Tennessee conference is scheduled for November 4-5, 2023 in Martin, TN at the University of Tennessee at Martin.

We will be accepting nominations for some offices on the executive board later this month, if anyone would like to nominate themselves or someone else. You must be a licensed veterinary technician in the state of Tennessee and a current member of the TVTA. Please check our Facebook page for more information on the specific offices and nomination forms. As a side note, our website is under construction and we will announce in our newsletter and on the FB page when it is available.

Congratulations to Brie Pruitt, NAVTA Student Chapter Advisor of the Year!

We would like to recognize that Brie Pruitt, Columbia State University Veterinary Technology program educator and NAVTA Student Chapter Advisor was nominated by four students for Student chapter advisor of the year. She was chosen to receive this award among many other student chapter advisors across the nation. Congratulations Brie!

— Mary M. Hatfield, AS, BS, M.Ed., LVMT, LAT; NAVTA State Representative

Academy of Dermatology Veterinary Technicians

World Congress of Veterinary Dermatology

We are looking forward to the World Congress of Veterinary Dermatology (WCVD) taking place in Boston, MA, USA in July 2024. This event takes place every 4 years in lieu of the North American Veterinary Dermatology Forum (NAVDF) and this year we are lucky to have it held here in the United States. This is the 35th Anniversary of the World Congress, which provides 5 full days of continuing education in veterinary dermatology presented by distinguished experts from around the globe.

For questions that you may have about ADVT as well as CE resources, up-to-date information can be accessed from our website at **www.vetdermtech.org** or on our ADVT Facebook page.

— Jennie Tait, AHT, RVT, VTS (Dermatology) Charter Member, Chair of Public Relations Committee, Academy of Dermatology Veterinary Technicians

Don't be a CHICKEN!

BASIC CHICKEN HISTORY 101

Maranda Carter, RVT

Photo by iStockphoto.com / suriyasilsaksom

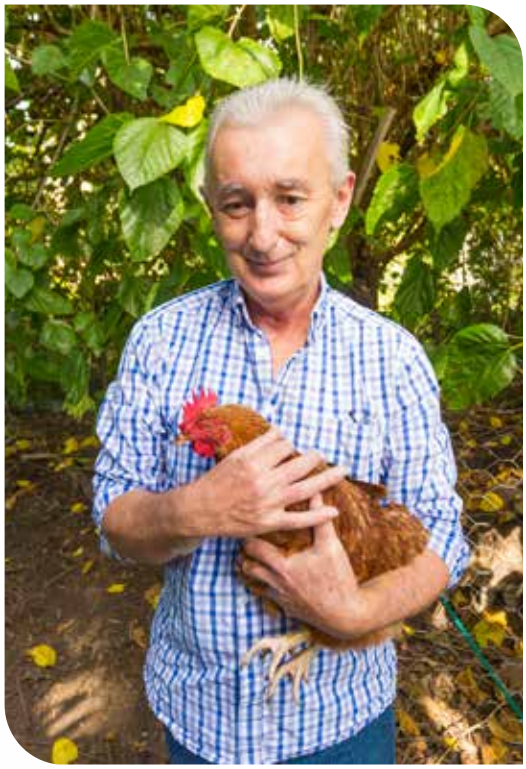
"Poultry as pets?"

Believe it or not, domestic chickens (*Gallus gallus domesticus*) are becoming more popular as companion animals. "Hobby poultry," as it is commonly known, and keeping backyard chickens has dramatically increased and, as the nature of human-animal bond continues to evolve, it would not be surprising if more people start presenting their companion chickens for veterinary care.

With good care, chickens can live up to 10 years! Chickens are inquisitive, social and friendly animals. They are typically pretty docile and easy to handle. They can be relatively inexpensive to maintain and can produce more fresh eggs than some people even know what to do with!

With all the benefits that chickens can provide, it's important to note they do present some challenges when it comes to veterinary care. Even if the owner considers the birds to be companions, to the state they are still a food animal and there can be rules and regulations that would need to be adhered to that may differ from regular companion animals. You also may have to worry about certain medications and withdrawal periods for safe egg consumption.

Even though pet chickens are a very different type of pet bird, as is the case with all birds, a complete husbandry history is essential for quality care. The first time I was tasked with rooming and getting a history from a chicken's owner at my practice, I realized I had no idea what to ask them. Over time, I have compiled this list of generalized husbandry questions for companion poultry owners:



Photos by iStockphoto.com/RyanJLane (top), PeopleImages (middle left), davidf (middle right), Litvalfa (bottom)

BASIC INFORMATION TO GATHER:

1. **Signalment**
   - Age, Gender, Breed
   - How long have you owned the animal?
   - Where did you get the animal from?
2. **Purpose of animal**
   - Companion, layers, meat (broilers)
   - Note: Most of the chickens seen in companion animal practice are going to be "companion layers"
   - If for meat or eggs, personal use or commercial?
   - If layer, last time she laid, how many eggs/how often?
3. **Flock size? How many other chickens or other pets? Other fowl (like turkeys) on the property?**
4. **Exposure to wildlife?**
   - Predator protection is important!
5. **Housing**
   - Coop/pen? Size?
   - Substrate/bedding in coop? Run substrate?
   - "Poop boards" used?
6. **Diet/Access to water**
   - Starter, grower, maintenance, layer formulation? Mash, crumble, pellet forms?
   - If younger bird, inquire about medicated/non-medicated feeds
   - Table scraps?
   - Treats?
   - Scratch?
   - Supplemental calcium source?
   - Grit?
7. **Any vaccinations that have been done? If so, when?**
   - For example: Mareks disease, Newcastle disease, Coccidiosis vaccine
8. **Nest boxes for layers?**
9. **Access to foraging?**
10. **Types of perches?**
11. **Typical behavior of animal(s)?**
12. **Presenting complaint(s)? And how long has it been going on?**
13. **Other major health issues previously?**

MARANDA CARTER, RVT

Maranda Carter is an RVT who resides in the Wichita Greater Metropolitan Area in Kansas. She graduated from WSU Tech (formerly WATC) in 2018. She has experience in small animal general practice, exotic animal, as well as emergency and critical care. She also currently teaches as an adjunct instructor for the WSU Tech Veterinary Nursing Program.

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WHAT MAKES THE NAVTA JOURNAL GREAT?

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National Association of Veterinary Technicians in America

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www.navta.net/editorial-guidelines

ANESTHESIA CASE ASSESSMENT

Hypocapnia following venous air embolism during thoracic limb amputation in a dog

James W. Mackey, BS, CVT, VTS (Anesthesia & Analgesia)

History

A 9yo MN Doberman Pinscher presented for left thoracic limb amputation. Vital signs on presentation were: heart rate 120 beats per minute (bpm), respiration rate 16 breaths per minute (brpm), capillary refill time (CRT) < 2 seconds, mucous membrane color (MMC) pink, body weight of 40 kilograms (kg), and a body condition score of 6/9. Physical examination revealed an aggressive demeanor and the presence of a firm mass associated with the left shoulder.

Current medications consisted of levothyroxine 0.4mg PO q 12h, carprofen 75 mg PO q 12h, gabapentin 300 mg PO q 8-12 h, trazodone 100 mg PO q 8-12h, and acetaminophen 325 mg PO q 12h.

A review of the medical record revealed the historical presence of a heart murmur, mild cardiac disease, and a history of hypothyroidism (well controlled with levothyroxine). A II/VI systolic heart murmur was first noted one year earlier. An echocardiogram performed at that time revealed mild mitral regurgitation; no cardiac interventions were indicated. Recent diagnostics included a CBC (within normal limits (WNL)), a chemistry panel (WNL except ALT 171 [5 - 160 U/L]), and thoracic radiographs (WNL). Radiographic evaluation of the shoulder mass revealed an aggressive lesion of the left caudal scapula with primary osseous neoplasia being the most likely diagnosis. Prior needle biopsy suggested malignant neoplasm (sarcoma). After surgical consultation, the owner elected to pursue left thoracic limb amputation.

Case Management and Outcome

Acepromazine 0.02 mg/kg and butorphanol 0.3 mg/kg were administered IM. An 18 gauge intravenous catheter (IVC) was placed in the right cephalic vein. Flow by oxygen was provided at a rate of 3 L/min for 5 minutes. Maropitant 1 mg/kg was administered IV. Induction of anesthesia was accomplished using ketamine 2 mg/kg and propofol 2 mg/kg IV titration. The patient was intubated with a 57 French endotracheal tube (ETT). Proper placement of the ETT was confirmed using direct visualization and capnography. A small leak around the ETT was noted during positive pressure ventilation (15cmH20); air was slowly injected into the pilot balloon until cessation of the leak occurred. General anesthesia was maintained with a rebreathing circuit using isoflurane at an initial rate of 1.25% in 100% oxygen running at 3L/min (75mL/kg/min). Monitoring equipment was established and vital signs were: HR 106 bpm, SPO2 96%, RR 19brpm, ETCO2 46 mmHg, ECG normal sinus rhythm (NSR), blood pressure (BP) 127/68 (98) mmHg, and temperature (temp) 97.3F. Cefazolin 22 mg/kg IV was administered and repeated q90m.

The patient was transported to the operating theater. Monitoring equipment was re-established: HR 110 bpm, SP02 96%, RR 19brpm, ETCO2 37 mmHg, ECG NSR, BP 99/56 (71) mmHg, and temp 97.3F. Positive pressure ventilation (15cmH20) confirmed continued ETT/airway seal.

Lactated Ringers Solution (LRS) was initiated at 5 mL/hg/hr. Methadone 0.2 mg/kg IV was administered as the primary analgesic. Lidocaine and ketamine constant rate infusions (CRI) were started for adjunct analgesia (loading dose of 1 mg/kg followed by 2 mg/kg/hr and loading dose of 0.5 mg/kg followed by 0.6 mg/kg/hr, respectively). 2 mg/kg of lidocaine was drawn up by the surgical assistant for later direct nerve infiltration. Nocita 0.2mL/kg was drawn up by the surgical assistant and instilled later during surgical closure. The oxygen flow rate was reduced to 0.9L/min (23mL/kg/min) and isoflurane was reduced to 1%.

The initial surgical incision was made. Anesthetic depth was deemed appropriate based on cranial reflex assessment (absence of palpebral blink, loose jaw tone, rotated eye position).

Vitals signs were HR 93 bpm, SP02 98%, RR 10 brpm, ETCO2 39 mmHg, ECG NSR, BP 88/51 (67) mmHg, and temp 96.4F. 35 minutes later, ETCO2 rapidly decreased from 40 mmHg to 19 mmHg. The patient was re-assessed and no other abnormalities were observed. The following troubleshooting measures were pursued: verification of ETCO2 with a second monitor, suctioning and repositioning of the ETT, leak testing the anesthetic machine, serial blood pressure readings, and confirmation of the oxygen flow rate. ETCO2 remained low (19-25 mmHg). An arterial blood sample was obtained, which confirmed the presence of hypocarbia (PaCO2 31 [36-40 mmHg], all other values WNL).

At this point the possibility of a pulmonary embolism was broached, and the surgeon confirmed earlier transection of the axillary vein prior to ligation. The ETCO2 remained low for the duration of surgery (19-30 mmHg), however no other abnormalities were observed. At the conclusion of surgery vital signs were HR 95 bpm, SP02 95%, RR 18 brpm, ETCO2 30 mmHg, ECG NSR, BP 97/60 (73) mmHg, and temp 97.1F. Carprofen 2.2 mg/kg was administered SQ.

LRS was reduced to 2.5mL/kg/hr. Patient was transported to the ICU and recovered in sternal recumbency. Oxygenation was monitored continuously for the next four hours via pulse oximetry, and the patient was placed on a respiratory watch. The lidocaine and ketamine CRIs were reduced to 1.5 mg/kg/hr and 0.12 mg/kg/hr respectively. Gabapentin 10 mg/kg, trazodone 5 mg/kg, and acetaminophen 10 mg/kg PO were administered q8h.

No postoperative adverse effects were noted, and the patient was discharged from hospital 24 hours later.

Comments

Hypocapnia is defined as a decrease in ETCO2 concentration [<35 mm Hg]. Potential causes of hypocapnia under general anesthesia include hyperventilation (e.g. light anesthetic plane, increased nociception, overzealous mechanical ventilation), decreased perfusion, airway obstruction, equipment malfunction, small patient size, esophageal intubation, inappropriately high carrier gas flow rates, leak in the breathing circuit, and pulmonary embolism.

In this case, hyperventilation was ruled out as a potential cause using capnography and direct observation of respiratory rate. Decreased perfusion was deemed less likely due to concurrent normotension and the sudden drop in ETCO2 values. Airway obstruction was ruled out using evaluation of capnography waveform and by suctioning the ETT. Equipment malfunction was ruled out by verifying readings with a second monitor. Given the patient's weight, patient size was deemed unlikely. Proper ETT placement was confirmed with direct visualization and capnography. Oxygen flow rates were verified to be appropriate. The breathing circuit was checked both prior to and during the procedure. Therefore, the observed hypocapnia (ETCO2 19-30 mm Hg) and hypocarbia (PaCO2 31 mmHg) were most likely caused by iatrogenic venous air embolism (VAE). This hypothesis is further bolstered by the sudden decrease in ETCO2 (suggesting a rapid change in patient status) and by the delayed venous ligation reported by the surgery team.

The causation between VAE and hypocapnia is well understood.[1] Entrapped air within the venous circulatory system can affect ventilation, oxygenation, perfusion, cardiac circulation, pulmonary circulation, cardiac output, and/or cardiac rhythm. The observable effects of VAE depend on both the rate and volume of air entering venous circulation. In general, the body can mitigate small volumes and/or slow rates of air entering venous circulation. However, large volumes and/or high infusion rates may cause negative sequelae including hypocarbia, decreased oxygenation, hypotension, hypertension, decreased cardiac output, decreased perfusion, cardiac arrhythmias, heart murmurs, and cardiac arrest.[2]

Treatment

Treatment of VAE should focus on prevention. Iatrogenic VAE can occur during placement/maintenance of IVCs (both peripheral and centrally placed), administration of IV fluids, during open surgical procedures (especially those that expose/transect large diameter veins), and during laparoscopic surgical procedures that utilize carbon dioxide insufflation.[3] If prevention of VAE fails, limiting the volume and rate of air injected is of paramount importance.

Additional treatment steps will depend on the observed clinical signs but may include supplementing oxygen, treating arrhythmias, supporting blood pressure, and/or attempted aspiration of injected air.

Iatrogenic VAE is well described in human literature, but has been minimally described in veterinary literature. One case study details VAE during thoracic limb amputation in a dog, similar to the report described here.[3] Given the theoretical basis, the prevalence of forelimb amputations, and the serious nature of potential side effects, the possibility of VAE during certain veterinary surgical procedures should be better anticipated.

Acknowledgements

Thank you to KF, DB, and KG for doing the legwork. Thank you to AD for editing. Thank you to AL for instilling the knowledge and passion. J

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Foxtails...

STICKLERS for DISTRESS

Oreta M. Samples, BS, RVT, MPH, DHSc

Foxtails are the seeds of a grass-like weed that grows in many countries worldwide. The genus classification is Alopecurus; several species are found in North America, North Africa, Eurasia (13 countries extending from the European Union border to the Far East), and Australia (*Figures 1-3*). The weed is regarded as either an annual (a plant that lives its complete life cycle in one year) or a perennial (a plant that can live for three or more growing seasons). This makes it challenging to eradicate the weed from a pet's environment, especially in temperate climates. Several species of Alopecurus exist in various parts of the United States and Canada (*Table 1*).

It is possible that many species of animals, both wild and domestic, may be affected by foxtails in a deleterious way. This article will focus on dogs and cats and the effects of foxtails on their health. Because these animals frequently roam or live/spend part of their days outside, they may frequently encounter the weed that produces a spiky seed known as "foxtails or ayls." These seeds may adhere to haircoats, work their way between toes, or become lodged in the ears, nose, or mouth when animals brush against the plant or chew on it. They may also become embedded in the skin and migrate into tissues where they can cause organ damage (Watson, 1994).

In the United States, foxtails are the seeds of the plants of the species Alopercurus and are responsible for the perpetuation of the plant as either an annual or perennial. It is these seeds that are problematic to animals sharing the environment. Alopercurus grows within the United States in a variety of soils and soil textures. It will grow in moist or dry soils and can be found in pastures, gardens, yards, ditches, etc. It is, therefore ideally located for pets to encounter in a variety of settings. Within the United States, it ranks as the second most common broadleaf weed, the fourth most common weed among grass crops and pasturelands, and the sixth hardest to eradicate in areas where it infiltrates grass crops, pasture, or turf found in the US (Zimmer, 2023). This causes a significant economic impact on turf or sod growers. It is normally seen from late Spring to early Fall, although in areas of year-round warm temperatures such as Southern California, it may be seen year-round (Foxtails Pose Serious Health Risks to Animals, 2018). When the spikey seed hardens, it becomes rigid enough to penetrate tissue or organs.

(Clockwise from top left) ***Figure 1:*** *A. saccatus (Image credit: Wikipedia Commons/Chloe and Trevor Van Loon);* ***Figure 2:*** *A. carolinianus (Image credit: Wikipedia Commons/Matt Lavin);* ***Figure 3****: A. Aequalis (Image credit: Wikipedia Commons/ Matt Lavin)*

Many health risks are associated with foxtails and range in severity from minor to severe and, in some cases, life-threatening. These may be divided into the following categories: Penetration or Infiltration. These categories are based on the actions of the Foxtail when the companion animal encounters them and the possible consequences. Each category comes with specific challenges surrounding identification, diagnosis, and treatment.

Infiltration of Foxtails

The definition of infiltration involves something entering an organism; outside animals may encounter foxtails at various times of the year; they are most easily detached when the animal brushes up against the plant or chews or plays with the plant (Wikipedia, 2023). The infiltration effect happens during the initial foxtail penetration after which the seeds move into and through tissue; this may be dangerous if body organs are encountered. The migratory infiltration through subcutaneous and dermal tissues may

TABLE 1: Species of Alopecurus of North America, Canada, and Eurasia

Genus/Species	Nickname	Type	Area of Growth
A. saccatus	Pacific Foxtail, Pacific Meadow Foxtail	Annual	WA, OR, ID, CA
A. carolinianus	Carolina foxtail, Tufted meadow foxtail	Annual	US and Western Canada
A. aequalis	Shortawn foxtail, Range foxtail	Perennial	Eurasia to North America

leave infected tracts or form abscesses or granulomas in the wake of migration. The continued migration may only end once a vital organ is reached where the foxtail may embed. Such embedded material may cause severe damage to organs, including the brain, the lungs, or anywhere within the alimentary canal. They may or may not be easily detected upon x-ray, CT, or MRI scans. Affected organs will require surgical intervention in order to rectify the issue and alleviate suffering. According to clinicians at UC Davis, School of Veterinary Medicine, it is possible upon radiographic location of foxtails in the body to stain with a sterile stain so that surgeons are better able to spot them during surgical intervention (Foxtails Pose Serious Health Risks to Animals, 2018).

Zwingenberger, in 2009, reported on the presence of foxtails within the canine pharynx, causing abscesses requiring medical intervention after radiographic diagnosis. In lung involvement cases, pneumothorax and pleural effusion complicate effective intervention and treatment (Zwingenberger, 2009). When infiltration into the body occurs, subsequent associated infections can occur (Zwingenberger, 2009). A retrospective study by Philip, et. al (2022) reviewed 791 cases of foxtail-induced foreign body lesions in dogs and cats from 2009-2018. It was documented that the following clinical factors were in evidence in cases of foxtail association lesions: Hematological labs were non-specific, bacterial cultures of lesions demonstrated anaerobic bacteria as the most common microbes identified and included Bacteroides/Prevotella spp., Fusobacterium spp., and *Peptostreptococcus anaerobis*; additionally, the anaerobe Actinomyces was rarely isolated (Philip, 2022).

Penetration by Foxtails

Penetration involves the entry and movement of a sharp object into and throughout the body. It could be confused with infiltration, except it includes spear-like penetration into tissues through the subcutaneous, dermal, and often tissue layers before migration begins (Penetration, 2023). The nose and mouth may easily be penetrated by foxtails as companion animals by the nature of their sizes, and necessary ambulation on four limbs places them in close proximity to the foxtails. While foxtails are detached from the plant, they then may adhere to the fur or skin or enter an area such as the nose or mouth where they move forward by way of the body's movement with the barbs digging in as a means of advancement (Foxtails: Why They Are Dangerous?, 2023). This continual advanced movement can allow foxtails to become embedded in the nasal cavity, causing breathing difficulties or minor discomfort. However, severe, or continual migration of foxtails through the nasal passages can eventually find the seed affecting the brain (Foxtails: Why They Are Dangerous?, 2023).

Likewise, in animals that might ingest or chew on the Alopercurus species of plants, inhalation of the foxtails may also occur, allowing them to find their way into the lungs. If they enter the mouth, they may be swallowed and travel throughout the alimentary canal. This can lead to deleterious results that will require surgical or endoscopic intervention. It is also possible for foxtails to adhere to the inner side of the pinna or penetrate the actual ear canal as well as adhere to or scratch the eye. Penetration may be detected in cases involving the head due to animal pawing or scratching.

One of the most common sites for minor foxtail irritation involves the feet. Foxtails may adhere to fur but work their way between the toes and become embedded into the pads or between the toes. This may cause abscesses as well as localized infections of the feet, pads, and toes. Owners should pay close attention to such sudden behavior as pawing or scratching and inspect the animal or bring it in for veterinary examination to identify and remove foxtails (or any other foreign object). Depending on how deeply the foxtails are embedded and the amount of pain that may be encountered in removal, owners should seek veterinary care for

One of the most common sites for minor foxtail irritation involves the feet. Foxtails may adhere to fur but work their way between the toes and become embedded into the pads or between the toes.

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TABLE 2: Common Microbes Associated with Foxtails

Microbe	Morphology/Gram	Type	Media	Treatment
Prevotella spp.	Rods, Gram–	Anaerobic	Kanamycin-vancomycin-laked blood agar (KVLB)	Pipezabactum-trazebactum, cefoxitin, meropenum, imipenum, tigercyclin
Fusobacterium spp.	Spindle-shaped rods/ pleomorphous rods, Gram–	Anaerobic	Fusobacterium Selective Agar (FSA)	Penicillin, metronidazole, clindamycin, cephalosporin
Peptostreptococcus anaerobis	Cocci (chains), Gram+	Anaerobic	Wilkins-Chalgren media	Penicillin G, cephalosporins
Actinomyces	Filamentous rods, Gram+	Anaerobic	Casein-Starch Media (CSM)	Penicillin (long-term: 6 months to a year)

removal to avoid causing pain and possibly being bitten. The small barbs that cover the seeds can feel like many small needles or pins sticking to the tissues simultaneously and may elicit a pain response.

Diagnosis of Foxtails

The diagnosis of foxtails may be as simple as visually identifying the seeds or as complicated as making a definitive diagnosis via endoscopy, radiography, or surgical interventions. Because the seeds have sharp barbs that serve to attach and embed, trying to identify and remove them may be painful. This may necessitate sedation or tranquilization to proceed. It should be remembered that frenzied movement can encourage the foxtails movement and should be avoided at all costs. A diagnostic workup may include patient history, questions about the pet's outdoor environment, and the possible presence of the Alopercurus plant species. Blood and serum testing may be done, such as biopsies (in cases of lesions or granulomas), and diagnostic imaging. As mentioned earlier, surgical exploration or intervention may need to be considered depending on exam findings. Once identification has been made, a treatment plan may be formulated.

Because the seeds have sharp barbs that serve to attach and embed, trying to identify and remove them may be painful [and] may necessitate sedation or tranquilization. It should be remembered that frenzied movement can encourage the foxtails movement and should be avoided at all costs.

Microbiology of Foxtails

A culture and sensitivity test may be in order in cases of abscesses, foxtail-associated infections, or suppurating tracts. The microbes most closely associated with foxtails may be identified through plating on agar (*Table 2*).

In cases where inflammation or infection is a side-effect or repercussion to foxtails, the clinician may not wish to wait for confirmation by culture and sensitivity results to begin treatment. A broad-spectrum antibiotic may be offered because the most commonly associated microbes are a mixture of gram-positive and gram-negative bacterial types. Table 2 indicates specific antibiotics that may be utilized for identified microbes. (Garrett, 2015) (Wanger, 2017)

Treatment of Foxtails Once Identified

The removal of visible foxtails from nasal or oral cavities, hair, or between toes may be facilitated using tweezers with little to no pain. However, if embedded within the skin or ear canal, a consult with the veterinarian is in order. Clients calling and describing such a scenario should be encouraged to bring the pet in for treatment. They should be discouraged from squeezing or picking at the embedded foxtail as this will elicit a pain response from the animal, including biting or snapping. It is also vital to seek veterinary assistance if foxtails are embedded in or around the eye to avoid further or long-lasting ocular damage. Clients should be advised not to disturb the foxtail or to place a cup over the eye to prevent the animal from scratching at it while transporting it to the veterinary facility. Cats are particularly susceptible to foxtail damage to the eye. Symptoms displayed if foxtails are attached to or around the eye include squinting, drainage of mucous, or conjunctivitis that resembles "pink eye." If left untreated, the foxtail can scratch and damage the cornea quickly and, in some cases, irreversibly (Lee, 2021). Because cats are also fastidious groomers, one should be mindful that they may accidentally ingest the seeds which can cause issues within the digestive system.

The use of the endoscope may prove helpful to both visualize and remove foxtails from deep within the nasal cavity or upper or lower parts of the alimentary canal (i.e., throat or anal region). Surgical intervention in areas of the innermost alimentary canal and when body organs are involved is often necessary. (Young, 2023).

Conclusion

The foxtail in its natural environment is seemingly innocuous and perhaps even

Encourage regular grooming of pets to remove seeds from the haircoat in order to discourage penetration into skin or between toes; the area between the toes should be inspected daily, especially in long-haired canine species.

picturesque. However, much like the adage that warns, "everything is fine until it is not," when companion animals encounter foxtails, negative consequences may occur. Veterinary Technicians may work "exposure prevention" into conversations surrounding outdoor environments where pets play or frequently spend time to encourage mowing or frequent inspection of pets upon entering the home after being outside. Encourage regular grooming of pets to remove seeds from the haircoat in order to discourage penetration into skin or between toes; the area between the toes should be inspected daily, especially in long-haired canine species.

Clients may be referred to their local gardening center for herbicides that will assist with the control of the weeds. The weed may be eradicated using pre-emergence or post-emergent herbicides, although there have been reports of some varieties being herbicide-resistant (Zimmer, 2023). Mowing and clearing of clippings from areas where dogs and cats frequently exist will help to prevent injuries. Posting pictures of foxtails, both as a plant and the seeds in exam rooms is a novel way to help pet parents identify and eradicate these issues before they become problematic. By posting in exam rooms, clients' attention is captured while waiting and possibly will elicit a conversation with the Veterinary Technician or clinician. J

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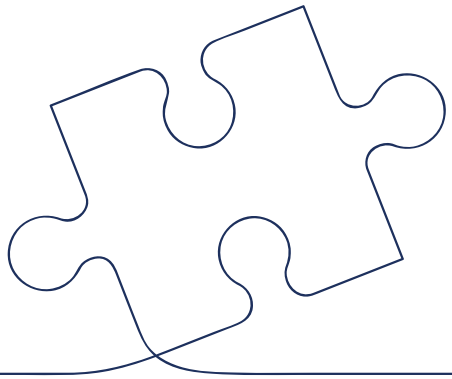


VETERINARY NURSING UTILIZATION TODAY, *and Moving into the Future*

Angela Rathmann, AAS, CVT, VTS (ECC), (SAIM)

We hear negativity in our profession daily; sentiments along the lines saying that we have been fighting the same battles, such as utilization and lack of career path in this profession for the past 20 years. That nothing substantial has really changed in this field. These sentiments are echoed throughout social media, chats, blogs, and even some printed articles. It can get depressing- if you believe it. But is this truly our reality as Veterinary Nurses (VN) as we head into 2024? Or does it have to be? How can we as VN's be fully utilized in our field? How far can we truly go?

Scarcity vs. Growth Mindset

We can sit around and examine all that is wrong with the profession and moan and groan. Or, on the heels of National Veterinary Technician's Week, maybe it's a good time to look at all we have truly become as Veterinary Nurses today—even better yet, how far we can still go.

So many lovely veterinarians are (and we do love you!), but some must still become enlightened as to what all VN's are clearly capable of doing (for the scope of this article any VN referenced would at minimum be a credentialed Veterinary Technician (CrVT) within the state they work in) and fully trust in the team they work with. The issue of lacking trust cited in the AAHA Veterinary Technician Utilization Guidelines 2023 is concerning. How can any veterinarian work with a credentialed team member for any length of time and not have trust in them to perform the skills and use the knowledge they have been trained to do and have? If they don't or can't, why do they keep them employed? Let them move on to a practice where they can be valued. Please stop devaluing and disempowering your Veterinary Nurses by underutilizing them. If you DO trust them, please show them, and utilize them to the fullest! Likely one of the major issues surrounding 'trust' in full utilization is that true VN's aren't being employed at all to know what we can accomplish. Concern over the higher cost of a VN may be a roadblock in staffing a lineup of truly talented VN's. However, without taking the chance on doing so, the veterinarian will never allow themselves to see the benefits of having such talent on their team. Nor will they ever experience the impact and benefits—financial, mental, emotional, and to their own personal schedules (oh what a relief it is to have them helping you!).

How can we as VN's be fully utilized in our field? How far can we truly go?

Utilization—What it Means and Why

There are so many things that VN's can do that are not often recognized—a scale far beyond the usual placing peripheral IV catheters and drawing blood. The new AAHA Veterinary Technician Utilization Guidelines 2023 are a great start in helping to identify some of these skills that VN's do, can do and should be doing daily: inducing anesthesia, placing endotracheal tubes, bandaging and wound care, and even suturing lacerations or closing skin for surgeries (if allowed in the given state) or extracting teeth. Most state statutes do not even make unblocking cats something outside the scope of a VN. How amazing to free up the time for our veterinarian!

How we are being utilized today and in the future as Veterinary Nurses is vital in many ways. The benefits of proper utilization go far beyond monetary (and this is a huge benefit to the practice so let's not discount this). Utilization is key in creation of true career paths and longevity in this career as a VN, not to mention overall career satisfaction. True career ladders are available to Veterinary Nurses now more than ever both in Leadership/Management AND in Clinical pathways. But the complete Clinical career pathway cannot exist without complete and full utilization of our VN's.

What about the VTS?

There are now, as of writing this article, 16 Specialty Academies available for Veterinary Nurses/Technicians (Veterinary Technician/Nurse Specialists—VTS/VNS). The VTS/VNS has undergone a rigorous process of gaining experience in their area of specialty, application, study, training, and testing to achieve this certification and is equipped with an even higher skill set and knowledge than the typical VN. The VTS/VNS is in a special position to aid the veterinary team even further (if available) by performing advanced skills such as multi-lumen central line placement, arterial

blood sampling/catheter placement, performing ultrasounds, pericardiocentesis, thoracocentesis, placing chest tubes, and more (as legal within each states practice act).

In addition to the skill set, these VTS-VN's possess a high degree of knowledge and critical thinking and ability to assess patients in a 'big picture' way, while still applying their nursing finesse. This super-set of abilities puts them in a unique position to help lighten the load of the veterinarians yet doing it in a unique way all our own, that can help improve workflow and overall team communication. With the extreme veterinarian shortages, partnering a VTS with a veterinarian improves efficiency by allowing the VTS to perform physical exams, begin creating diagnostic, treatment, and anesthetic plans (working with and under approval and supervision of the DVM) to expedite the care of the patient and reduce wait times in busy practices. Seeing states like Arkansas provide legislations for the VTS to give provider level care (under guidance and VCPR of the DVM) is exactly the type of role we need in this profession—and exactly what the VTS was built for and more than capable of. Hopefully this is a precedent more states will follow soon!

Pictured: *Steven Kirkpatrick, LVT, VTS (ECC) and Angela Rathmann, AAS, CVT, VTS (ECC), (SAIM) performing a pericardiocentesis and a thoracocentesis.*

Career Possibilities Today

When I first learned about this career path, reading about it in a library book I found in the 7th grade (then we were called Animal Health Technicians), there were very few career paths available to us. For myself, living in Arizona, I only had options of working in General Practice or maybe Equine (IF I could get a job there—very difficult to do).

In a recent meme seen for 2023 National Veterinary Technician week, some 28 different avenues of career paths are available for us a VN's today. How remarkable! I would venture to say there are probably even more pathways than what were listed on the meme if you break it out further. There is truly no limit, no ceiling, in how far we as VN's can go today. We are seeing positions that never existed before such as Vice President roles in companies, Regional Nursing Directors, and even Chief Veterinary Nursing Officers. As discussed, if the leadership pathways aren't for you, clinical pathways are also growing.

Additionally, VN's are internationally recognized speakers, authors, and publishers commonly these days. Something that is a goal anyone can aim for. This year we had our very first Veterinary Technician/Nurse ONLY Conference (NAVC/Hive 2023). The Veterinary Nursing movement is growing daily, weekly, monthly, yearly. Together we are only getting stronger and stronger as we continue to work together and support each other!

What You Should Do!

Veterinarians, work to put trust in your VN's! They will only blossom and grow and continue to impress you and help you improve your practice if you do so. Pay and invest in VN's- they will only aid your practice growth. You, with a strong VN by your side, will make a better veterinarian than you will be all on your own- just like we cannot do our jobs on our own. To quote an movie of the past, "Help US help YOU!" (*Jerry McGuire*, 1996). We all need each other, and we make each other stronger by developing a camaraderie between us and pushing each other UP!

Veterinary Nurses, become intimately familiar with YOUR states legislation and what is legal for you to do, and not do as a VN. Once you know and are confident of the legislation, utilize the forms and goal setting worksheets available in AAHA's Technician Utilization Guideline 2023 to work with your veterinarians and management to plan to improve your utilization in your hospital! Set your goals for personal career growth and never stop growing (this is key!). And above all, keep loving what you do! This is an amazing thing we get to do every day. Don't forget it. I am doing things today that I never dreamed I would even see happening in my career lifetime! So, yes, there will always be tough days. But don't give up—BE the Change!

DITCH THE DON'T WANT LIST.

DEFINE YOUR DO WANT LIST!

Rebecca Rose, RVT • Certified Career Coach

It has become very clear to me that a percentage of people focus on what they don't want without consideration of what they do want. What is your experience?

The conversation that is forefront in my coaching conversations these days is about transforming careers, but the underlying focus is defining what the individual WANTS to manifest.

The conversations go something like this:

RR: "I am happy you have chosen to take the reins in designing your career. What is it you want in your career and life?"

Vet Team Member: "I'm not sure."

RR: "Can you describe to me what you don't want?"

Vet Team Member: "YES! I don't want to be low-balled, disrespected, ignored, underappreciated, understaffed…"

RR: "Good to know. What kind of team do you want to work with?"

Vet Team Member: "I'm not sure."

RR: "Can you describe to me what kind of team you don't want?"

Vet Team Member: "YES! I don't want to work with people who gossip, deliver poor-quality medicine, aren't accountable, are rude…"

RR: "How much money do you need to make, annually?"

Vet Team Member: "I'm not sure."

RR: "Can you describe to me the amount of money you know you don't want?

Vet Team Member: "YES! I don't want what I am currently making…."

See a trend? In my experience, the **DON'T WANT List** is long, descriptive and felt with great conviction. The **DO WANT List** is undefined, nondescriptive and lacking luster.

Which list can you create without overthinking it?

My point is this: you get what you focus on! Clarity in your life and career is needed in order for you to bring it to fruition.

The first step in transforming your life and career is to clearly determine what you value and want. That can be difficult at times.

You are encouraged to fill out the worksheet below to get you started in the right direction.

Whether you are new to working within the veterinary community or not, there are a few tips and tricks that may help you land the ideal position at the best veterinary hospital for **YOU.** First, you may need to do some soul searching to determine your personal and professional values. Then consider what you are seeking in your career within the veterinary practice (*i.e.,* what will make or break "the deal"). Finally, set expectations on what to identify for the interviewing process.

Begin with Your Values

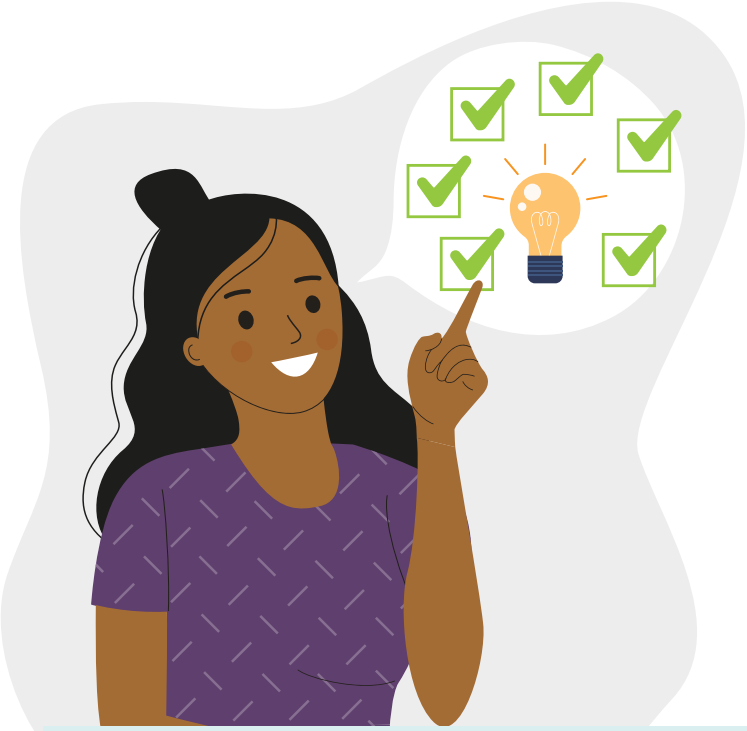
Job hunting begins by determining your personal and professional values. This is where the soul-searching starts, where the rubber meets the road. You may simply initiate the process by answering the questions below**.** As you begin the creative exercise, allow your thoughts and suggestions to flow, without boundaries. Allow for real brainstorming to occur, because when you express yourself, authentically, you can create a dynamic career.

Consider what you believe about being a veterinary professional, as well as how you serve pets and pet owners. Some examples

Be BOLD, Be BRIGHT, Be COURAGEOUS in writing your thoughts.

of commonly shared values include: I believe in providing the best veterinary medicine to every pet that walks in the door; I believe that each day it is my responsibility to give my best for the pet, pet owner and veterinary team; I believe in trustworthiness; I believe in continually learning and training.

1. In regards to:
   - serving pets, I believe…
   - serving veterinary clients, I believe…
   - being a part of an efficient, skillful veterinary team, I believe…
   - my personal time and satisfaction, I believe…
   - my personal passion, I believe…
   - my personal wellbeing, I believe…
2. I hold _____ in high regard when it comes to my personal time.
3. I hold _____ in high regard when it comes to providing veterinary care.



Now that you have identified these, **hold true to your values!** Find a veterinary hospital and team that align with your values as this will lead you to being an efficient and passionate veterinary team member.

Requirements for Your Veterinary Career

There are basic needs (or wants) you may have for your "ideal veterinary practice." You may need to live near your parents or find a practice in a community with exceptional schools for your children, or live in recreational paradise. You need to have a salary and benefits package in mind. Consider the size of the practice, services provided and the standard of care you seek. There may be additional considerations. Write them down, **put pen to paper.**

Declare what you need and want! Write your **DO WANT LIST!**

As an example, fill in the blanks:

- Desired location is _____with _____ opportunities.
- Annual income of $ _____ with a benefits package including _____
- Doctor to Team member ratio is 1 to _____
- Hospital provides the following services:

_____

_____

- Equipment or additional resources:

_____

_____

- The standard of care is defined as

_____

_____

Overview for the Interviewing Process

Green Flags - GO! versus **Red Flags - STOP!**

JOB ANNOUNCEMENT

Green Flag

- Well written job announcement with pre-screening and drug testing
- Up-to-date website
- Engaging Facebook page and other social media
- Manager is the lead in the hiring process
- Video tour of facility with cheerful team members
- Credentialed veterinary team members
- Benefits package

Red Flag

- Lousy written job announcement.
- Owner Veterinarian is the only contact and doing the hiring.
- Outdated website.
- No Credentialed Veterinary Technicians on staff.

INTERVIEWS

Green Flag

- Email correspondences are professional and well written.
- Google reminder or another app utilized in scheduling .
- Offers to meet virtually or phone interview.
- May send out phone interview questions before hand.
- Employee Handbook (will send to you upon request).
- Team phase training (for veterinarians, too!) and teambuilding.
- Working interview, preferred paid.
- Formally trained and supported management team.
- Formally trained and supported veterinary technicians and assistants.
- 15% team turnover (national average).
- Productive team meetings.
- Consistent team messaging in the services and products provided.

Red Flag

- Poor and/or untimely email correspondences.
- No management team and/or no employee handbook.
- Overhearing gossip or sense negative attitudes.
- No team phase training, teambuilding or funds for continuing education.
- High team turnover.
- No team meetings.

You've been given nearly all you need to define your Do Want List and bring it into a real state. All you need to do is have conviction and confidence in bringing it to fruition. "Feel the fear and do it anyway," is a lifelong motto of mine that has served me well. Now is the time for you to feel the fear (or concern, or anxiety) of reaching your greatest potential in designing and maintaining the career of your dreams and doing it anyway! J

Photo by iStockphoto.com / Lyudinka, Mackenzie Miller

ENRICHMENT
for Senior Pets

Zoos have known about enriching the environments and the lives of captive animals for decades. Many of today's larger zoos even have a full-time employee dedicated to the task of inspiring lives of their residents, ranging from cheetahs to polar bears, to Savannah monitor lizards. A zoo lizard may arguably enjoy an environment that is more enriched than even the most "spoiled" of pets. Spoiling pets is oftentimes a part of the problem.

Most cats are now indoors only (68 percent, American Pet Products Association National Pet Owners Survey 2021-2022) so being run over by a car or run down by a coyote is not likely. However, despite an indoor-only existence, cats are born with a hard-wired prey drive, and they continue to have the need to chase, pounce and kill—even if it is only a mouse toy (Overall, 2013). If we do not properly enrich their environments and satisfy these primal feline needs, we run the risk of bolstering a nation of fat, brain-dead cats.

According to the Association of Pet Obesity Prevention, 61 percent of cats are overweight or obese, and 59 percent of dogs (Association of Pet Obesity Prevention). Many of them only get off the sofa for their meals, which is obviously unhealthy.

In cats, there is a correlation between unenriched environments and interstitial cystitis, often dubbed idiopathic feline lower urinary tract disease (FLUTD) or "Pandora's syndrome" (Westropp and Buffington, 2004; Herron and Buffington, 2010; Buffington *et al.*, 2014). This uncomfortable or painful condition combined with anxiety may prompt them to eliminate outside their litter boxes. Having "accidents" is a significant cause for breaking of the human–animal bond, and ultimately owner relinquishment. In general, it turns out that enriching the environment is an effective treatment for FLUTD, and this appears to be true no matter how old a cat may be (Westropp and Buffington, 2004; Herron and Buffington, 2010; Buffington *et al.*, 2014). Of course, in older cats arthritis, feline cognitive dysfunction syndrome and underlying kidney disease, hyperthyroid disease and or/other medical issues may contribute to inappropriate elimination, and require appropriate medical attention.

If we do not properly enrich [cats'] environments and satisfy these primal feline needs, we run the risk of bolstering a nation of fat, brain-dead cats.

While cats may not more frequently suffer from FLUTD as they age, urinary tract infections are more common—and anxiety may contribute to both conditions.

By any definition, many of today's dogs are "livin' the good life." After all, millennials barely even know what a doghouse is, and today, approximately 46 percent of dogs share our beds (American Pet Products Association). It seems wonderful—and in many ways it is. However, few dogs were bred to live their lives on beds and do little else. Most dogs were bred for a purpose, from retrieving waterfowl to herding sheep to guarding property. And having a purpose in life seems to be healthful in dogs, as it may be in people (Boyle *et al.*, 2012). This purpose in dogs and prey drive in cats doesn't diminish with age.

Before examining enrichment for pets, it may be helpful to better understand enrichment by offering examples of enrichment at zoos. Zoo enrichment might include PVC piping filled with food, which a giant anteater uses its long sticky tongue

Photo by iStockphoto.com / Liam Bell

Enrichment does not need to be only about food. For example, zoo animals can be offered old rags or burlap sacks infused with different odors. Enriching an environment may also mean offering different textures, and/or varying items to investigate.

to probe for goodies. Cheetahs are inspired to chase and catch a dead chicken pulled across the exhibit on a pulley at a high speed. Talk about your ultimate fish 'n chips, a polar bear may chip away at a giant ice cube floating in an exhibit with a fish frozen inside it (Steve Ross, personal communication; Shepherdson, 1989, 1998; Schulz, 2004; Baker, n.d; Markowitz, 1982).

Enrichment does not need to be only about food. For example, zoo animals can be offered old rags or burlap sacks infused with different odors. Enriching an environment may also mean offering different textures, and/or varying items to investigate. Orangutans enjoy investigating and methodically taking items apart (Dale and Briere, 1992; Baker, n.d; Markowitz, 1982).

Myriad studies demonstrate that zoo animals benefit physically and mentally from the stimulation provided by an enriched environment. Numerous studies of zoo animals demonstrate that living in unenriched and uninteresting environments is unhealthy; potentially leading to various abnormal behaviors and can play a role in weight gain and general ill health (Dale and Briere, 1992; Shepherdson, 1989, 1998; Baker, n.d; Markowitz, 1982). Also, with less anxiety, there is generally less stress on immune systems, which may contribute to preventing disease onset.

Offering food or treats from toys and food puzzles is one example of enriching companion animals' lives (Overall, 2013). It turns out that the eagerness to work for food and a preference to problem-solve has been studied in lab animals and many captive zoo animals. This phenomenon, of preferring to work for food rather than eat what is freely available, is called contra-freeloading. (McGowan *et al.*, 2014; Inglis *et al.*, 1997). While there is limited data regarding contra-freeloading in dogs and cats, much less in senior pets, it appears to be a very real phenomenon for many individual companion animals.

Hiding kibble or providing toys may not be stimulating enough for geriatric pets with a compromised sense of smell and taste (Dodman and Lidner, 2012). Bringing out the "good stuff" may be necessary to entice (such as using yogurt, tuna or favorite manufactured treats). Of course, it is not advisable to force an elderly hungry dog or cat to search for food, or to be fed out of food toys if they're absolutely uninterested, or physically compromised.

Throughout their lives, many dogs enjoy chewing. However, older dogs may be even more inclined to break teeth and/or items may cause stomach upset. Instead of leaving products like antler ears, hooves, hard bones or even rawhide, there are countless "squishy" treats that require some chewing but are not as likely to break teeth or cause damage to the delicate gums. Other possibilities include apple slices (which can be frozen for a "better chew"), mini-carrot sticks, oral hygiene chews, and similar items. Of course, veterinary advice of what applies to an individual pet is always suggested.

Cognitive enrichment starting early in life may help to protect against the development of early cognitive decline and dementia in some dogs and in people, and therefore one may assume cats as well (Milgram *et al.*, 2006). Enrichment is important for dogs and cats as puppies and kittens; why would it be any less important as they age? Based on personal observations, many people do seem to take their older pets for granted—although I am not suggesting they are loved any less. Often owners assume, "Well, they're old—let them be," or because they're moving less, motivating these older animals may require more effort.

A zookeeper told me how she often would rotate with various animals when she first joined the zoo, filling in wherever she was needed. She maintains that her old little terrier mix was happy to see her return home before she accepted that job, as nearly all dogs are happy to see their people. But once she began at the zoo, the hello consisted of intense and lengthy sniffing, as if to discover, "So today you worked in the bird house?" She told me her new job seemed to give a new purpose to her old dog.

Since pets live by their noses, and even with failing eyesight their sense of smell remains the primary sense, introducing new scents may be fun, or not. For example, anecdotally some cats enjoy lavender, while others actually appear to be disturbed. It turns out the lavender plant itself may be dangerous, and so are the oils in the potpourri (American Society for the Prevention of Cruelty to Animals, 2017). For most (not all) cats, catnip and/or silvervine can provide a fun release, and valerian root can have calming effects.

Spritzing odors, such as just a little cologne or perfume, near a cat or dog bed or along a baseboard may be "interesting," although at least one study suggests that cats in particular do not much care (Wells and Ellis, 2010). For dogs (not cats), you can create a foreign exchange program, where clients can borrow a friend's soft dog toy. It may be more fun to sniff the toy than it is to play with it.

We have all heard stories about how adding a second pet provides a new spark, and the older pet begins to play like a young one. Beware, because adding another pet to a household may be an example of far too much change for a geriatric pet to deal with. A seriously ill pet or a pet in declining health is unlikely to benefit from having another pet. Also, new

cats, in particular, must be introduced very gradually into a home with an existing older cat. Having said that, a second pet may be positively enriching.

There's increasing evidence that stimulation resulting from an enriched environment may delay or even prevent onset on canine or feline cognitive dysfunction syndrome (Overall, 2013). For individually social dogs and for people, there is research that demonstrates that socialization, including exercise derived from walks, may help to delay or even prevent deleterious cognitive changes (Overall, 2013; Johnson *et al.*, 2011).

Aging dogs have been used as model for older people. For example, walking turns out to be just as beneficial for older dogs as it is for older people (Overall, 2013; Johnson *et al.*, 2011; Milgram *et al.*, 2006). In fact, a simple walk, especially exploring new neighborhoods, may be the most enriching activity for any dog (Dodman and Lidner, 2011; Johnson *et al.*, 2011). And social dogs benefit by meeting new people and new dogs. While some older dogs may be too impaired for a walk, the walk doesn't need to break speed or distance records. Or debilitated dogs may even be pushed in a carrier or wagon (Johnson *et al.*, 2011).

Motor learning (as opposed to mere motor activity) may increase synapse formation in the cerebellar cortex in rats (Milgram *et al.*, 2006). One might assume the same is true for dogs and cats—learning does not need to ever stop.

For years, independent living centers for seniors have encouraged adult continued education, such as learning computer skills or how to play chess, as well as encouraging movement through exercise classes. Studies support that these activities are beneficial for both the mental and physical health of residents (Winsted *et al.*, 2014). Dog and cat brains operate in a similar way to human brains (Landsberg *et al.*, 2013). New challenges are important. That old axiom from grandpa turns out to be right, when he said, "If you don't use it, you'll lose it." No wonder, so many facilities continue to support funding for these activities because of the results they witness.

There are numerous studies to support the notion that laughter is, as the old expression goes, the best medicine (Mayo Clinic, 2016). If that is the case in people, might the same be true for dogs or cats? Perhaps an antidote to illnesses associated in aging pets is simply to encourage them to have a good time with a tug toy or squeaky mouse. **Fun matters!** J

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ABOUT STEVE DALE

Steve Dale, CABC, has been a member of the Winn Feline Foundation Board of Directors for thirteen years. Steve is a founding member of the CATalyst Council, and serves on the Board of Directors of the Human Animal Bond Association. He's a contributor to several books including *The Cat: Clinical Medicine and Management*, edited by Dr. Susan Little; and *Treatment and Care of the Veterinary Geriatric Patient*, edited by Dr. Mary Gardner and Dr. Dani McVety; and he edited *Decoding Your Dog*, authored by members of the American College of Veterinary Behaviorists. Steve is the host of three radio talk shows, and he speaks at veterinary and animal welfare conferences around the world. His website is www.stevedalepetworld.com.

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