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Trends

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Bon Voyage

TO FELINE TRANSPORT AND
VET-VISIT ACUTE ANXIETY AND FEAR

WITH

Bonqat 
(pregabalin oral solution)



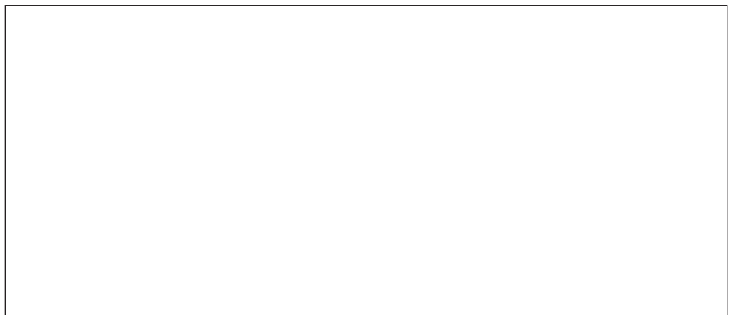
It's never too late to celebrate National Bring Your Cat to the Vet Day!
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feline patients at [BonqatVetTeam.com](https://www.BonqatVetTeam.com).

IMPORTANT SAFETY INFORMATION: Not for human use. Do not use in cats with known hypersensitivity to pregabalin. Use with caution in cats with cardiac disease, hypertension, renal disease, or severe systemic disorders. The safe use of Bonqat has not been evaluated in breeding, pregnant, or lactating cats; in cats younger than 7 months of age; in cats with cardiac disease, hypertension, renal disease, or severe systemic disorders; or in conjunction with opioids and other sedatives. The most common side effects are incoordination, lethargy, and vomiting. See Brief Summary of full Prescribing Information on reverse side.

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Brief Summary of Full Prescribing Information

Bonqat® 
(pregabalin oral solution)

Each mL of BONQAT contains 50 mg pregabalin.
For oral use in cats only.

CAUTION:

Federal law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS:

BONQAT is indicated for alleviation of acute anxiety and fear associated with transportation and veterinary visits in cats.

DOSE AND ADMINISTRATION:

Client Information Sheet is on the reverse of this package insert.

Always provide client information sheet with prescription.

BONQAT is administered orally as a single dose of 5 mg/kg (0.1 mL/kg) approximately 1.5 hours before the start of the transportation or veterinary visit and can be given on two consecutive days. If the cat weighs more than 22 pounds, the total dose will need to be calculated and given in two separate doses as the syringe holds a maximum of 1 mL of solution. A small amount of food can be given with BONQAT.

CONTRAINDICATIONS:

Do not use in case of hypersensitivity to pregabalin or to any of the excipients (sodium benzoate, ethyl maltol, hydrochloric acid, sodium hydroxide).

WARNINGS:

Human Safety Warnings:

Not for human use.

Appropriate precautions should be taken while handling BONQAT. Avoid skin contact, eye contact, or contact with mucous membranes.

Symptoms of exposure to pregabalin include dizziness, sleepiness, blurred vision, weakness, dry mouth, and difficulty with concentration or attention.

In case of accidental eye or mucosal exposure, flush with water for 15 minutes. If wearing contact lenses, eyes should be rinsed first, then remove contact lenses and continue rinsing. Seek medical advice if symptoms occur.

In case of skin contact, wash with soap and water immediately. Remove contaminated clothing. Seek medical advice if symptoms occur.

In case of accidental ingestion, seek medical advice if symptoms occur. Do not drive as sleepiness may occur. In case of ingestion by a child, seek medical attention immediately. Show the package insert or the label to the physician.

Drug Abuse, Addiction, and Diversion

Controlled Substance:

BONQAT contains pregabalin, a Schedule V controlled substance.

Abuse: Abuse is defined as the intentional, non-therapeutic use of a drug, even once, to achieve a desired psychological or physiological effect. Pregabalin is not known to be active at receptor sites associated with drugs of abuse. However, pregabalin is associated with drug liking and is known to be misused and abused in the community, particularly in combination with opioids. Consider the potential risks of misuse or abuse before prescribing this product. Signs of pregabalin misuse or abuse include drug seeking behavior.

Pregabalin should be handled appropriately to minimize the risk of diversion, including restriction of access, the use of accounting procedures, and proper disposal methods, as appropriate to the clinical setting and as required by law.

Note to physician: BONQAT contains pregabalin.

The safety data sheet (SDS) contains more detailed occupational safety information. To report adverse reactions in users or to obtain a copy of the SDS for BONQAT contact Zoetis Inc. at 1-888-963-8471.

Animal Safety Warnings: Some cats may experience hypothermia, depression, drowsiness, muscle tremors, and/or ataxia. These cats should be kept warm and not offered food or water until BONQAT's effects have worn off (usually within 6 hours). (See **TARGET ANIMAL SAFETY**) Keep BONQAT in a secure location out of reach of dogs, cats, and other animals to prevent accidental ingestion or overdose.

PRECAUTIONS:

Use with caution in cats with concurrent cardiac disease or hypertension because BONQAT may cause bradycardia and reflex hypertension. The safety of BONQAT has not been evaluated in cats with concurrent cardiac disease or hypertension.

The safe use of BONQAT in cats younger than 7 months of age has not been evaluated.

The safe use of BONQAT used in conjunction with opioids and other sedatives has not been evaluated.

Use with caution in cats with pre-existing renal disease (See **Clinical Pharmacology**).

The safe use of BONQAT in cats with severe systemic disorders has not been evaluated.

Use with caution in cats with severe systemic disorder.

The safe use of BONQAT in breeding, pregnant, and lactating cats has not been evaluated.

ADVERSE REACTIONS:

In a well-controlled European field study, which included a total of 238 cats (108 treated with BONQAT at the label dose of 5 mg/kg, 29 treated with BONQAT at a dose of 2.5 mg/kg, and 101 administered placebo control), 5 months to 15 years of age and weighing 1.8 to 10.3 kg, the following adverse reactions were reported:

Table 1. Adverse reactions

Adverse reaction	Pregabalin 5 mg/kg N=108	Pregabalin 2.5 mg/kg N=29	Placebo N=101
Ataxia	5 (4.6%)	1 (3.4%)	0
Lethargy	3 (2.8%)	2 (6.9%)	0
Emesis	2 (1.9%)	0	0
Proprioception abnormality	1 (0.9%)	1 (3.4%)	0
Muscle tremor	1 (0.9%)	0	0
Anorexia	1 (0.9%)	0	0
Weight loss	1 (0.9%)	0	0
Mydriasis	0	1 (3.4%)	0

CONTACT INFORMATION:

To report suspected adverse events, for technical assistance or to obtain a copy of the SDS, contact Zoetis Inc. at 1-888-963-8471.

For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at www.fda.gov/reportanimalae.

INFORMATION FOR CAT OWNERS:

Possible side effects on BONQAT include incoordination, tiredness, and vomiting. Some cats might be more sensitive to BONQAT; if the cat appears to be uncoordinated or overly tired, it should be kept warm and not offered food or water until the effect of BONQAT has worn off. This will normally happen within a few hours. If there are further concerns related to side effects after dosing the veterinarian should be contacted.

BONQAT must not be re-dosed if the cat spits part of the dose, vomits after treatment, or in case of hypersalivation, or if BONQAT does not seem to have any effect.

Always provide the Client Information Sheet with prescription.

Keep BONQAT in a secure location out of reach of children, dogs, cats, and other animals to prevent accidental ingestion or overdose.

TARGET ANIMAL SAFETY:

In a margin of safety study, 32 healthy, 7-month-old Domestic shorthair cats (4/sex/group) were administered a negative control or BONQAT for six consecutive days by once daily oral administration at dose levels of 5, 15, and 25 mg/kg/day.

At 5 mg/kg/day, observed signs of sedation included: abnormal gait, slight to moderate uncoordinated behavior, decreased activity, slightly limited usage of hind limbs, lying on side, hypothermia and/or drowsy appearance (i.e. depression, drowsiness, and/or ataxia). Clinical signs of sedation were resolved at the four-hour clinical observation. One male and one female cat had hypothermia observed two to four hours post-dose respectively, the lowest body temperature value was 99°F. Cats had a decrease in heart rate with maximum effect at six hours, but the heart rates stayed within normal range. All adverse observations were resolved by six hours after dosing on the first day of treatment.

At 15 and 25 mg/kg/day, signs of sedation were observed in all cats and included ataxia, lethargy, slightly to moderately limited usage of hind limbs, slight to severe uncoordinated behavior, partially to completely closed eyes, lying on side, dilated pupils, hypothermia, and/or drowsy appearance (i.e. depression, drowsiness, and/or ataxia). On Day 1, all cats had a decreased body temperature at one or more timepoints, the lowest values were 97.8°F when dosed at 15 mg/kg/day and 98.2°F when dosed at 25 mg/kg/day. One cat dosed at 25 mg/kg/day had a loss of consciousness, abnormal gait, eyes closed, decreased activity, lying on side, sedation, salivation, vomiting, hypothermia, and uncoordinated behavior. This cat recovered by the four-hour observation. Directly after dosing, slight to severe salivation was observed in multiple cats on one or more days. Cats had decreased heart rate with maximum effect at two to six hours, some cats had bradycardia (120-130 bpm). The majority of cats maintained a normal blood pressure, but a few cats with bradycardia had a reflexive hypertension. Most adverse observations resolved by eight hours after treatment administration.

In a second margin of safety study, 32 healthy, 1 to 3 years old Domestic shorthair cats (4/sex/group) were administered a negative control or BONQAT for 3 consecutive days by once daily oral administration at dose levels of 5, 15 and 25 mg/kg/day. Directly after dosing, slight to severe hypersalivation was noted in all dose groups.

At 5 mg/kg/day, signs of sedation were observed in 6 of 8 cats, and included: abnormal gait, hypothermia, decreased respiratory rate and/or lethargy. These signs were observed between 1 and 6 hours after dosing on the first day of treatment. On Day 2, at six hours post-dose, one cat had muscle tremors that resolved without treatment by the 8-hour observation. Three cats had bradycardia (120-128 bpm) with maximum effect from two to six hours post-dose, but the heart rate remained within the normal range for the other five cats.

At 15 and 25 mg/kg/day, signs of sedation observed in all cats included: ataxia, hypothermia, lethargy, uncoordinated behavior, decreased respiratory rate, and/or they were cold to the touch. The signs of sedation were observed for 12 hours after dosing. One cat in the 15 mg/kg/day dose group had muscle tremors at four hours post-dosing as well as ataxia, lethargy, hypothermia, and a decrease in heart rate. Cats had a decrease in heart rate with maximum effect at two to six hours, a few cats had bradycardia (106-122 bpm). The majority of cats maintained a normal blood pressure, but a few cats with bradycardia had a reflex hypertension. One cat in the 15 mg/kg/day dose group had bradycardia with reflex hypertension at two hours post-dose followed by a reflex tachycardia at six- and eight-hours post-dose.

STORAGE INFORMATION:

Store the bottle in a refrigerator at 2-8°C (36-46°F). Use bottle contents within six months after the first opening of the bottle. Up to one month of this time the bottle can be stored at or below 25°C (77°F).

HOW SUPPLIED:

BONQAT is packed in a clear 5 mL glass bottle containing 2 mL of BONQAT (pregabalin oral solution) at 50 mg/mL. The bottle has a child resistant closure and an oral dosing syringe adapter. The bottle is further packed into a carton with a package insert and an oral dosing syringe (1 mL).


Approved by FDA under NADA # 141-580

BONQAT® is a trademark of Orion Corporation.

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Turku, Finland

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Kalamazoo, MI 49007



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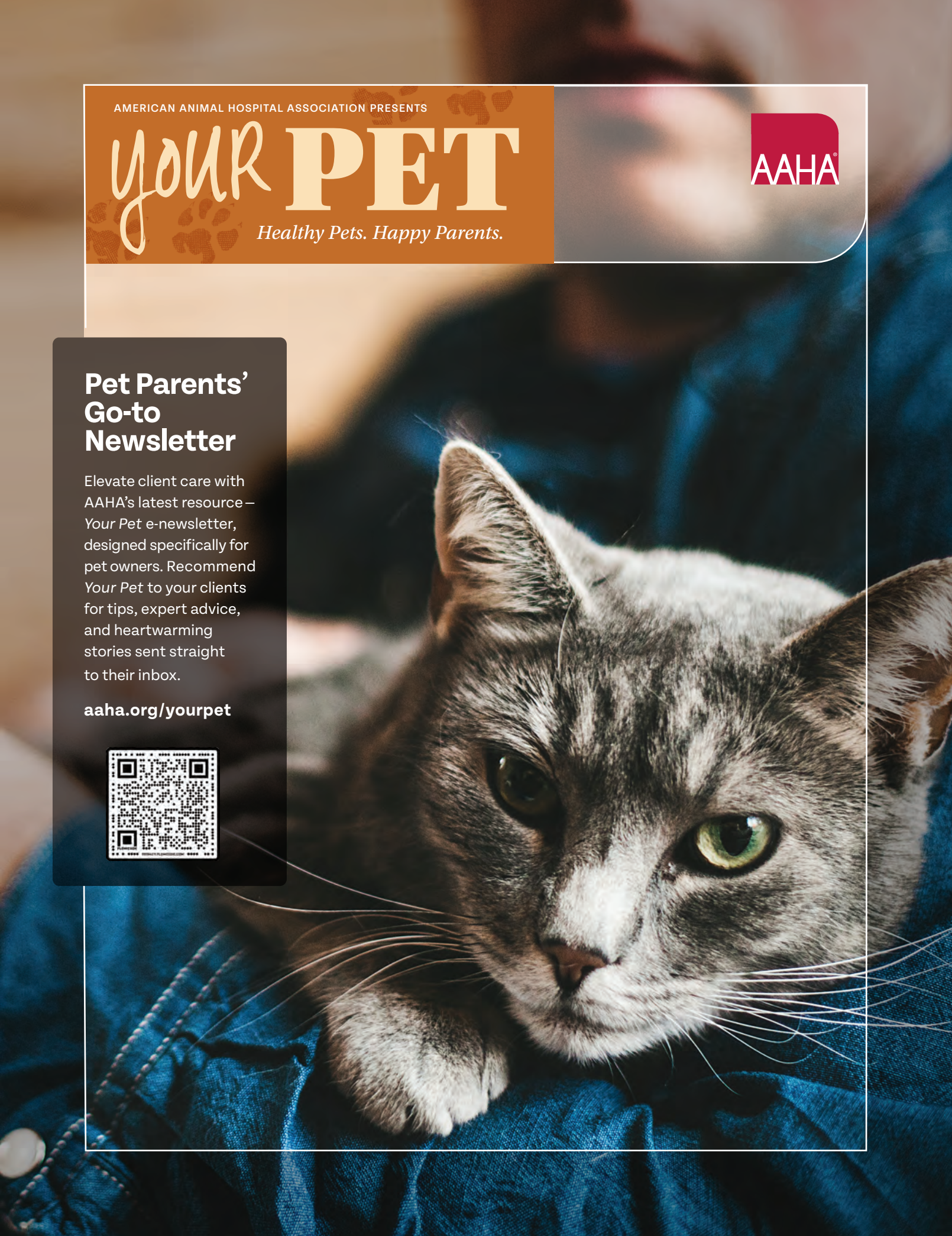
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Trends

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Trends magazine provides timely perspectives on the art and business of companion animal veterinary practice to all members of the practice team.

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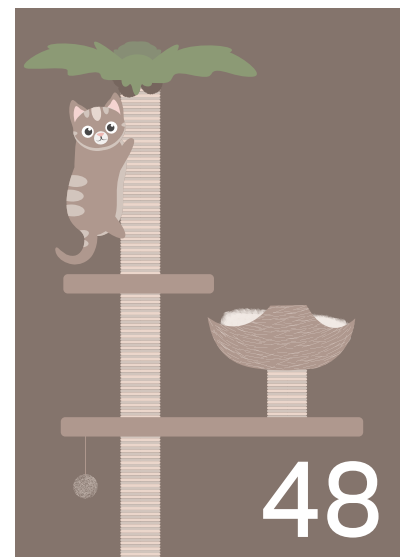
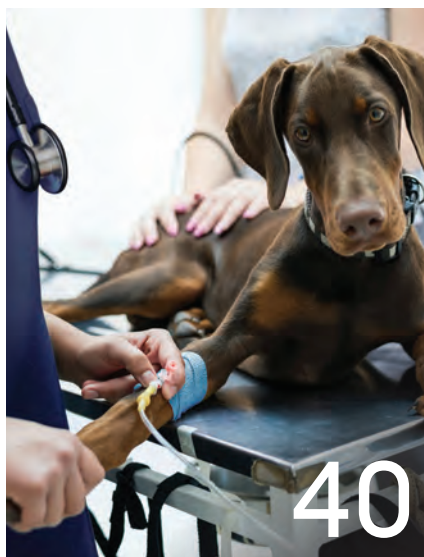
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From the Editor

When I was a kid, our cats Jelly Beans and Frisbee rarely—if ever—saw the vet. It wasn't really on our radar that cats needed veterinary care. They were not even spayed, because one time after Jell had been missing for a few days, we found her and a litter of mewling kittens in the bottom drawer of great-grandfather's filing cabinet. We loved them dearly, but of course were doing them a disservice by not providing them with regular vet visits.

Fast-forward to now, and we know more about cats than ever before, but people still persist in the thinking that cats don't need as much care as dogs. Or, at least it takes more work to get cats to the vet so many owners don't think it is worth it. As the profession continues to try and educate cat owners, we will do our small part by presenting this month's Cat Issue!

In this issue we have some great cat content, from Renee Rucinsky, DVM, DABVP (Feline), writing on some of the new or underutilized feline diagnostic procedures, to Jamie Rauscher, LVT, and her piece on making use of technicians to help your practice be more cat friendly. We also have a unique article on how to recycle cat trees, and our "5 Questions for a Specialist" column is all about that feline specialty.

This issue also features some very useful information from the brand new *2024 Fluid Therapy Guidelines for Dogs and Cats*. Don't miss it!

Nominate Your Employee of the Month

Don't forget to head over to aaha.org/EOTM to nominate one of your co-workers for the Employee of the Month contest, and you could win \$100 for yourself, and \$400 for your nominee. There is no catch, it's free to enter, and you get free money!

Coming Next Month

In September we're looking at a very interesting lineup, with topics ranging from pain management, to social media misinformation antidotes, to emergency preparedness. We'll also have a great feature on some of the volunteers working around the world on eliminating rabies.

As always, let me know what you think at trends@aaha.org.


Ben Williams
Editor

Contributors



**Renee Rucinsky, DVM,
DABVP (Feline)**

Renee Rucinsky, DVM, DABVP (Feline) is a graduate of the University of Missouri College of Veterinary Medicine and is the owner of Mid Atlantic Cat Hospital and Mid Atlantic Feline Thyroid Center in Maryland.



Jamie Rauscher, LVT

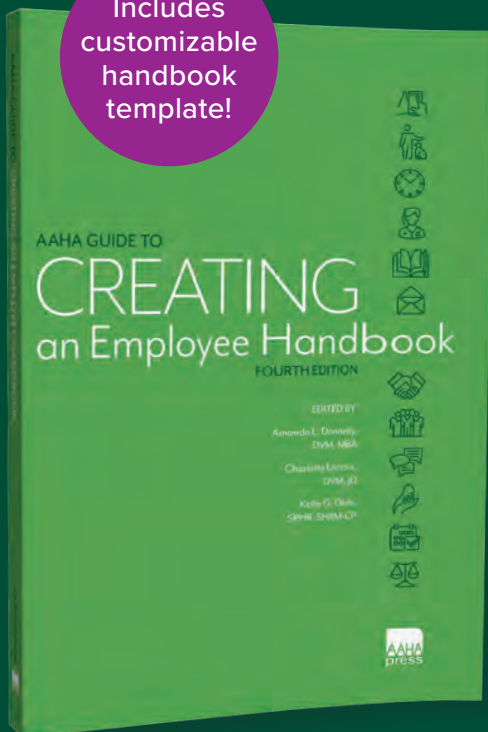
Jamie Rauscher, LVT, is the Hospital Manager of Animal Hospital of Towne Lake, Cat Clinic of Woodstock and Hwy 92 Animal Hospital in Georgia. She is the president of NAVTA.



Cara Hopkins

Cara Hopkins became a Master Composter in 2017, so she spends a lot of time thinking about trash and recycling. She lives in Boulder, Colorado, with her two cats.

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1. Data on file at Boehringer Ingelheim.

2. SENVELGO[®] (velagliflozin oral solution) [Freedom of Information Summary; NADA 141-568]. St. Joseph, MO: Boehringer Ingelheim Vetmedica, Inc.; 2023.

3. SENVELGO[®] (velagliflozin oral solution) [prescribing information] Duluth, GA: Boehringer Ingelheim Animal Health USA Inc.; 2023.

IMPORTANT SAFETY INFORMATION: SENVELGO[®] (velagliflozin oral solution) is indicated to improve glycemic control in otherwise healthy cats with diabetes mellitus not previously treated with insulin. **Before using this product, it is important to read the entire product insert, including the boxed warning.**

Cats treated with SENVELGO may be at an increased risk of diabetic ketoacidosis or euglycemic diabetic ketoacidosis, both of which may result in death. Development of these conditions should be treated promptly, including insulin administration and discontinuation of SENVELGO.

Do not use SENVELGO in cats with diabetes mellitus who have previously been treated with insulin, who are receiving insulin, or in cats with insulin-dependent diabetes mellitus. The use of SENVELGO in cats with insulin-dependent diabetes mellitus, or the withdrawal of insulin and initiation of SENVELGO, is associated with an increased risk of diabetic ketoacidosis or euglycemic diabetic ketoacidosis and death.

Sudden onset of hyporexia/anorexia, lethargy, dehydration, or weight loss in cats receiving SENVELGO should prompt immediate discontinuation of SENVELGO and assessment for diabetic ketoacidosis, regardless of blood glucose level. SENVELGO should not be initiated in cats with ketonuria, ketonemia, pancreatitis, anorexia, dehydration, or lethargy at the time of diagnosis of diabetes mellitus, as it may indicate the presence of other concurrent disease and increase the risk of diabetic ketoacidosis.

Keep SENVELGO in a secure location out of reach of **children, dogs, cats, and other animals** to avoid accidental ingestion or overdose. **For more information, please refer to the enclosed package insert or visit [SENVELGOclinic.com](https://www.senvelgoclinic.com).**



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L6528
Package Insert

Senvelgo[®]

(velagliflozin
oral solution)

15mg/ mL

For oral use in cats only

Sodium-glucose cotransporter 2 (SGLT2) inhibitor

Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian.

WARNING: DIABETIC KETOACIDOSIS/EUGLYCEMIC DIABETIC KETOACIDOSIS

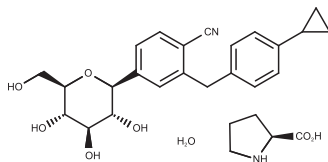
- Cats treated with SENVELGO may be at an increased risk of diabetic ketoacidosis or euglycemic ketoacidosis (see Adverse Reactions). As diabetic ketoacidosis and euglycemic ketoacidosis in cats treated with SENVELGO may result in death, development of these conditions should be treated promptly, including insulin administration and discontinuation of SENVELGO (see Monitoring).

- Due to the risk of developing diabetic ketoacidosis or euglycemic ketoacidosis, do not use SENVELGO in cats with diabetes mellitus who have previously been treated with insulin, who are receiving insulin, or in cats with insulin-dependent diabetes mellitus (see Contraindications).

- SENVELGO should not be initiated in cats with anorexia, dehydration, or lethargy at the time of diagnosis of diabetes mellitus or without appropriate screening tests (see Animal Safety Warnings).

Description: SENVELGO[®] (velagliflozin oral solution) equal to velagliflozin L-proline H₂O 20.051 mg/mL, is a clear, colorless to slightly yellow, to slightly brown, liquid multi-dose preparation consisting of 1.5% w/v velagliflozin in an aqueous mixture of propylene glycol and ethanol intended for oral use in cats. SENVELGO is an orally active, sodium-glucose cotransporter 2 (SGLT2) inhibitor.

The chemical name of velagliflozin is 2-(4-cyclopropyl-benzyl)-4-((2S,3R,4R,5S,6R)-3,4,5-trihydroxy-6-hydroxymethyltetrahydropyran-2-yl)-benzonitrile. It forms a co-crystal with L-proline ((S)-pyrrolidine-2-carboxylic acid) as a monohydrate and velagliflozin, L-proline and H₂O are in 1:1:1 ratios. Its empirical formula is C₂₃H₂₇NO₃ x C₅H₉NO₂ x H₂O, its molecular formula is C₂₈H₃₆N₂O₆, and its structural formula is:



Indication: SENVELGO is indicated to improve glycemic control in otherwise healthy cats with diabetes mellitus not previously treated with insulin.

Dosage and Administration: Always provide the Client Information Sheet with each prescription.

Dosing instructions:

The SENVELGO dose is 0.45 mg/lb of body weight (1 mg/kg), once daily regardless of blood glucose level. The dose may be administered directly into the mouth or with a small amount of wet food. Do not mix into food. The solution should be given at approximately the same time every day. If a dose is missed, it should be given as soon as possible on the same day. If the cat vomits within 30 minutes of dosing, the dose can be repeated.

SENVELGO should be administered using the dosing syringe provided in the package. The dosing syringe fits onto the bottle and has a body weight scale with increments per pound of body weight. The dose should be rounded down to the nearest pound. After administration, close the bottle tightly with the cap. If needed, the syringe can be cleaned with a clean, dry cloth.

Prior to initiation of treatment:

Prior to initiation of SENVELGO, the veterinarian should ensure the cat is alert, active, eating, and drinking. The veterinarian should conduct a physical examination, obtain a medical history, CBC, serum chemistry, serum fructosamine, and urinalysis including evaluation for ketonuria (see Animal Safety Warnings).

If there is a delay of more than a week between diagnosis of diabetes mellitus and initiation of SENVELGO, the veterinarian should re-evaluate the cat with a full physical examination and updated history to ensure the cat still meets the criteria described above. A delay of more than a week between diagnosis and starting SENVELGO may increase the risk of developing diabetic ketoacidosis.

Monitoring of cats receiving SENVELGO:

Sudden onset of hypoxemia/anorexia, lethargy, dehydration, or weight loss in cats receiving SENVELGO should prompt immediate discontinuation of SENVELGO and assessment of diabetic ketoacidosis, regardless of blood glucose level.

• Evaluate for ketonuria 2 to 3 days after initiation of treatment and approximately 7 days after initiation of treatment and anytime the cat shows signs of illness. If ketonuria is present, discontinue SENVELGO and promptly treat with insulin, even if blood glucose is normal.

• During the first 4 weeks after initiation of SENVELGO, glycemic control and clinical improvement should be evaluated.

- A physical examination, blood glucose curve, serum fructosamine, and body weight should be assessed at 1 and 4 weeks after initiating SENVELGO.

- SENVELGO should be discontinued, and initiation of insulin considered, in cats demonstrating poor glycemic control (weight loss, average blood glucose from a glucose curve > 300 mg/dL or fructosamine values suggesting poor control (> 450 µmol/L) after 4 weeks of treatment).

• During ongoing treatment with SENVELGO, blood glucose, fructosamine, urinary ketones, serum chemistry, body weight, hydration status, and clinical signs of diabetes mellitus should be routinely monitored.

- Presence of ketonuria should prompt discontinuation of SENVELGO and transition to insulin.

- Cats with increasing or persistently elevated triglyceride or cholesterol levels may have declining glycemic control or pancreatitis, and may be at risk of developing diabetic ketoacidosis or euglycemic diabetic ketoacidosis (diabetic ketoacidosis with normal blood glucose levels). Consider further evaluation and discontinuation of SENVELGO in these cats.

- Increasing or persistently elevated feline pancreas-specific lipase (fPL) should prompt further evaluation for pancreatitis and consideration of discontinuation of SENVELGO.

- Initial mild weight loss may be seen with SENVELGO associated with its mode of action (glucosuria and caloric wasting). Unintentional weight loss which doesn't improve or stabilize within 7 days may indicate the need to evaluate for concurrent disease and consideration of discontinuation of SENVELGO (see Adverse Reactions).

- If clinical signs of illness occur, evaluate the cat as soon as possible to ensure it is not at risk for diabetic ketoacidosis or euglycemic diabetic ketoacidosis (see Animal Safety Warnings).

- SENVELGO should be discontinued if the cat's clinical condition declines and/or glycemic control worsens after initial improvement.

• Cats may present with diabetic ketoacidosis and a normal blood glucose concentration (euglycemic diabetic ketoacidosis). Delay in recognition and treatment of diabetic ketoacidosis and euglycemic diabetic ketoacidosis may result in increased morbidity and mortality.

• Development of diabetic ketoacidosis or euglycemic ketoacidosis requires the following actions:

- Discontinuation of SENVELGO

- Prompt initiation of insulin therapy

- Administration of dextrose or other carbohydrate source, regardless of blood glucose concentration

- Appropriate nutritional support should be promptly initiated to prevent or treat hepatic lipidosis.

Contraindications: Do not use SENVELGO in cats with diabetes mellitus who have previously been treated with insulin, who are receiving insulin, or in cats with insulin-dependent diabetes mellitus. The use of SENVELGO in cats with insulin-dependent diabetes mellitus, or the withdrawal of insulin and initiation of SENVELGO, is associated with an increased risk of diabetic ketoacidosis or euglycemic diabetic ketoacidosis and death.

Warnings:

User Safety Warnings: Not for use in humans. Keep out of reach of children.

Wash hands after use. This product may cause mild eye irritation. Avoid contact with eyes. If the product accidentally gets into the eyes, rinse eyes immediately with plenty of water; if wearing contact lenses, rinse the eyes first then remove contact lens(es) and continue to rinse for 5-10 minutes. If eye irritation continues or accidental ingestion occurs, seek medical advice and provide this product information to the physician. Exposure to product may induce local or systemic allergic reaction in sensitized individuals. Oral exposure to velagliflozin may cause transient effects such as increased renal glucose excretion, increased urine volume, and hypoglycemia.

Animal Safety Warnings:

• SENVELGO should not be initiated in cats with:

- Anorexia, dehydration, or lethargy at the time of diagnosis of diabetes mellitus as it may indicate the presence of other concurrent disease and increase the risk of diabetic ketoacidosis.

- Ketonuria, ketonemia, or suspected diabetic ketoacidosis or a history of the same

- Clinical suspicion of pancreatitis within the last month based on clinical signs, serum fPL > 12 mcg/L, and/or diagnostic imaging consistent with pancreatitis.

- Chronic or unresponsive diarrhea

- Cachexia

- Bilirubin > 0.5 mg/dL

- Creatinine > 2 mg/dL

• SENVELGO may cause a mild increase in serum creatinine, blood urea nitrogen (BUN), phosphorus, and sodium in cats with or without chronic kidney disease within weeks of starting therapy, followed by a stabilization of values.

• Cats with baseline creatinine between 1.6 and 2 mg/dL when SENVELGO treatment is started should be closely monitored for signs of volume depletion/dehydration and body weight loss. Renal function should be monitored within the first week of treatment initiation and then according to standard chronic kidney disease guidelines. SENVELGO has not been evaluated in cats with baseline creatinine > 2 mg/dL.

• Cats should be screened for urinary tract infections and treated, if indicated, when initiating SENVELGO. Cats treated with SENVELGO should be monitored for urinary tract infections and treated promptly.

• Cats should be evaluated for concurrent disease including pancreatitis, infectious disease, urinary tract infection, neoplasia, and hypersomatotropism (acromegaly) before initiating and while receiving SENVELGO as these conditions may increase the risk of developing diabetic ketoacidosis.

• Persistently low or worsening serum chloride values compared to the pre-treatment value may indicate the development of diabetic ketoacidosis or euglycemic diabetic ketoacidosis.

• SENVELGO may cause increased serum calcium and persistent elevations may require additional diagnostics. Persistent elevated calcium has been associated with increased risk of calcium-containing urolith formation in other SGLT2 inhibitors.

• Cats should be closely monitored for development of diabetic ketoacidosis or euglycemic diabetic ketoacidosis (for example, ketonuria or anorexia) after stopping SENVELGO. Euglycemia may persist for 2 to 3 days after stopping SENVELGO.

• Keep SENVELGO in a secure location out of reach of dogs, cats, and other animals to avoid accidental ingestion or overdose.

Precautions:

• Consider temporarily discontinuing SENVELGO during times of decreased caloric intake, such as surgery or decreased appetite, as continued administration of SENVELGO may increase the risk of diabetic ketoacidosis.

• SENVELGO contains propylene glycol. When cats are administered SENVELGO at the 1 mg/kg/day dose, cats receive 40 mg/kg/day of propylene glycol. Exceeding 80 mg/kg/day of propylene glycol may result in excess hepatic glycogen stores. Use caution when administering SENVELGO to cats receiving other products that contain propylene glycol.

• Glucosuria may persist for 2-3 days after stopping SENVELGO. In cats receiving SENVELGO, glucosuria is not a reliable indicator for monitoring glycemic control.

• The safety and effectiveness of SENVELGO has not been evaluated in cats with chronic kidney disease (IRIS (International Renal Interest Society) Stages 3 and 4).

• The concurrent use of volume depleting drugs in cats treated with SENVELGO has not been evaluated.

• SENVELGO has not been evaluated with concurrent use of insulin or other blood glucose lowering treatments.

• The safety and effectiveness of SENVELGO in breeding, pregnant, and lactating cats has not been evaluated.

Adverse Reactions:

Two hundred fifty-two (252) cats with diabetes mellitus were enrolled in a 180-day multicenter field study. Safety data were evaluated in 252 cats treated with at least one dose of SENVELGO. Regardless of blood glucose level, cats received SENVELGO at a dose of 0.45 mg/lb once daily. The most common adverse reactions were diarrhea or loose stool, weight loss, vomiting, polyuria, polydipsia, and elevated blood urea nitrogen (BUN). The table below summarizes the adverse reactions reported in the study.

Adverse Reactions	Frequency (N=252) Number (%)
Diarrhea (including loose stool)	132 (52.3%)
Weight loss*	111 (44%)
Vomiting	92 (36.5%)
Polyuria	46 (18.3%)
Polydipsia	42 (16.7%)
BUN†	39 (15.5%)
Anorexia or hyporexia	34 (13.5%)
Hypersalivation and/or gagging	33 (13.1%)
Urine specific gravity > 1.060	29 (11.5%)
Dehydration	28 (11.1%)
Lethargy	20 (7.9%)
Polyphagia	19 (7.5%)
Urinary tract infections/cystitis	18 (7.1%)
Diabetic ketoacidosis or euglycemic diabetic ketoacidosis‡	18 (7.1%)
Hypercalcemia	16 (6.3%)
Ketonuria§	14 (5.6%)
Inappropriate urination	14 (5.6%)
Death or euthanasia	13 (5.2%)
Elevated AST and/or ALT**	12 (4.8%)
Hypertriglyceridemia††	12 (4.8%)
Hyperphosphatemia	12 (4.8%)
Elevated fPL	11 (4.4%)
Pancreatitis	10 (4.0%)
Elevated creatinine	9 (3.6%)
Hepatic lipidosis	6 (2.4%)
Urinary incontinence	3 (1.2%)

* Approximately 80 cats had weight loss during the first week of treatment, likely due to dehydration and/or caloric wasting from glucosuria.

† Most cats had elevations \leq 1.5X upper limit of normal (ULN).

‡ All but 5 cases occurred within 2 weeks of starting SENVELGO. Twelve of these cats had euglycemic diabetic ketoacidosis.

§ These cats did not progress to diabetic ketoacidosis and all but one developed ketonuria within a week of starting SENVELGO. The cats discontinued SENVELGO and transitioned to insulin.

** Four of these cats had AST (aspartate aminotransferase) and/or ALT (alanine aminotransferase) > 2X ULN.

†† These cats sometimes also had elevated cholesterol.

The following adverse reactions were seen in the study with < 1% frequency: elevated creatine kinase (> 3X ULN), hypoglycemia without clinical signs (glucose \leq 50 mg/dL), anemia, abnormal behavior, bradycardia, and dermatitis.

Ketonuria and diabetic ketoacidosis: Thirty-two (32) cats developed ketonuria, diabetic ketoacidosis or euglycemic diabetic ketoacidosis and were removed from the study. Twenty-six (26) of these cats developed ketonuria, diabetic ketoacidosis, or euglycemic diabetic ketoacidosis within the first 7 days of treatment with SENVELGO. Thirteen (13) of these cats developed ketonuria without further progression to diabetic ketoacidosis or euglycemic ketoacidosis and were transitioned to insulin. An additional thirteen (13) cats developed diabetic ketoacidosis or euglycemic ketoacidosis. Nine cats recovered after hospitalization and intensive treatment. Three of the 9 cats had concurrent conditions: hepatopathy (1), hepatic lipidosis (1), and pancreatitis and hepatic lipidosis (1). Four of the 13 cats were euthanized; three because the owners declined treatment and one cat was euthanized after not responding to hospitalization and intensive treatment.

Six cats developed ketonuria, diabetic ketoacidosis or euglycemic diabetic ketoacidosis after the first 7 days of treatment. One cat developed ketonuria without progression to diabetic ketoacidosis or euglycemic ketoacidosis after more than 4 months on SENVELGO. Five cats developed diabetic ketoacidosis or euglycemic ketoacidosis. Two cats (one with concurrent pancreatitis and hepatic lipidosis) were treated and recovered. One with concurrent pancreatitis was treated and recovered but died several days later. Two of the five cats were euthanized; one cat was euthanized after poor response to hospitalization and intensive therapy; and one was euthanized due to declining condition unrelated to diabetic ketoacidosis.

Thirty-eight enrolled cats had been previously treated with insulin. Of those 38 cats, 12 (32%) developed ketonuria, diabetic ketoacidosis, or euglycemic diabetic ketoacidosis during the first week and were removed from the study. These 12 cats are included in the 26 cases reported above and represent 46% of the cases removed in the first week of treatment due to ketonuria or ketoacidosis.

Death and euthanasia: Nineteen cats died (3) or were euthanized (16) during the study, or shortly following removal from the study, with thirteen possibly related to SENVELGO use or declining glycemic control. In addition to 6 of the cases associated with diabetic ketoacidosis described above, euthanasia was associated with the following conditions (number of cats): acute renal failure within a week of starting SENVELGO (1), worsening or emergent urinary incontinence associated with poor glycemic control (2), worsening polyuria/polydipsia and inappropriate urination (1), progressive signs of diabetes mellitus (1), declining condition and suspected pancreatitis (1), azotemia and lack of effect within a week of starting SENVELGO and possible concurrent hypersomatotropism (1).

Contact Information: To report suspected adverse drug events, for technical assistance, or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim Animal Health at 1-888-637-4251. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at www.fda.gov/reportanimalae.

Information for Cat Owners: Please provide and review the Client Information Sheet with cat owners to ensure they understand the entire contents before SENVELGO is administered. The Client Information Sheet contains important information regarding the use of SENVELGO. Owners should be advised to discontinue SENVELGO and contact a veterinarian immediately if their cat develops anorexia, lethargy, vomiting, diarrhea, or weakness.

Clinical Pharmacology:

Mechanism of Action:

Velagliflozin is an inhibitor of sodium-glucose cotransporter 2 (SGLT2), the renal transporter responsible for reabsorption of glucose from the glomerular filtrate back into the circulation. By inhibiting SGLT2, velagliflozin reduces the reabsorption of filtered glucose and lowers the renal threshold for glucose, thereby increasing urinary glucose excretion.

Pharmacokinetics: In a laboratory study conducted to determine the prandial state of maximum exposure, systemic exposure for velagliflozin was greater in the fasted state than in the fed state by 170% for the mean maximum observed plasma concentration (C_{max}), and by 45% for the mean area under the plasma concentration versus time curve (AUC) from dosing (time 0) to the last quantifiable concentration (AUC_{0-12h}), respectively.

In a well-controlled, laboratory margin of safety study in healthy, adult cats (see **Target Animal Safety**), after repeat daily oral dosing for six months, a slight to moderate increase in exposure to velagliflozin was observed. In addition, a tendency for a less than dose proportional increase of maximum plasma concentration (C_{max}) and exposure (AUC) over the tested dose range was noted.

Following oral administration of SENVELGO in cats at 1 mg/kg, velagliflozin was rapidly absorbed with a median time to maximum concentration of 0.25 hours. The velagliflozin mean (\pm standard deviation) C_{max} was 1030 (\pm 361) ng/mL and the mean AUC_{0-12h} to the last quantifiable plasma concentration was 3295 (\pm 1098) day*ng/mL. The elimination half-life of velagliflozin was 3.68 (\pm 0.34) hours.

Effectiveness: Two hundred and fifty-two (252) cats diagnosed with diabetes mellitus were enrolled in a 180-day multicenter field study. The cats included various purebred and mixed breed cats ranging in age from 4 to 18 years and in weight from 5.7 to 26.5 lbs (2.6 to 12 kg). Cats were administered SENVELGO at a dose of 0.45 mg/lb (1 mg/kg) orally, once daily, regardless of blood glucose level, beginning on Day 0. Cats were evaluated at Days 2 or 3, and Days 7 and 30 and then monthly.

Treatment success was evaluated on Day 30 and was defined as improvement in at least one clinical sign of diabetes mellitus (polyuria, polydipsia, unintended weight loss, polyphagia, or diabetic neuropathy) and improvement in at least one blood glucose variable (blood glucose curve mean or serum fructosamine).

Of 198 cats included in the effectiveness-evaluable population:

- 175 cats (88.4%) were considered a treatment success on Day 30 (lower bound of the two-sided 90% confidence interval was 84%).
- Mean blood glucose decreased from 446.4 mg/dL (single fasted sample) prior to Day 0 to 169.8 mg/dL (blood glucose curve mean) on Day 30
- Mean fructosamine levels decreased from 551.4 μ mol/L prior to Day 0 to 332.0 μ mol/L on Day 30.
- Improvements in the clinical signs of polyuria, polydipsia, body weight, polyphagia, and diabetic neuropathy on Day 30 were observed in 125/177 (71%), 128/176 (73%), 133/167 (80%), 33/80 (41%), and 7/30 cats (23%), respectively.
- 157 cats completed the 180-day study

Target Animal Safety: In a well-controlled laboratory margin of safety study, SENVELGO was administered orally to fasted, healthy, 8 to 9 month old cats at 0, 1, 3, or 5 mg/kg body weight (corresponding to 1X, 3X or 5X the intended labeled point dose of 1 mg/kg) once daily for 26 weeks (6 months). Control cats (0 mg/kg) received saline at a volume equal to the 5 mg/kg dose. There were eight cats per group (4 females, 4 males). All cats survived the study and there were no SENVELGO-related effects on ophthalmic examinations, indirect systolic blood pressure measurements, and blood coagulation parameters. Hypersalivation and vomiting after dose administration occurred infrequently and was only observed in the groups that received SENVELGO.

During physical examinations on Days 14 and 28, there was a drug-related decrease in heart rate (< 140 bpm) in the cats that received SENVELGO compared to the control cats. There were no other drug-related effects on physical examinations.

Polydipsia, glucosuria, decreased urine creatinine, and diarrhea were reported more frequently in cats that received SENVELGO than in control cats.

Reddish, mucoid feces were observed in three instances in the 1X group cats. One cat in the 5X group had decreased activity, vomiting, and reduced feed consumption for one day, and reddened rectal mucous membranes were observed over the next 5 days. Two cats (3X and 5X groups) were each observed to have a reddened prepuce with white-yellow discharge twice during the study that was not associated with abnormal urinalyses.

Food consumption was higher in the cats that received SENVELGO compared to the control cats. The rate of body weight gain was lower in the 5X group cats compared to cats in the control, 1X and 3X groups.

There were drug-related increases in reticulocyte count, mean corpuscular hemoglobin, mean corpuscular volume, and Heinz body percentage, and a decrease in mean corpuscular hemoglobin concentration in the cats that received SENVELGO compared to control cats. None of the cats showed any clinical signs of anemia and the number of erythrocytes, hemoglobin, and hematocrit values were normal. There was no effect of SENVELGO on white blood cells and platelets.

There were drug-related increases in serum magnesium, albumin, cholesterol, and triglycerides in the cats that received SENVELGO, with some magnesium, serum albumin and triglyceride values above the reference range. There was a drug-related decrease in mean BUN in the cats that received SENVELGO. There were no other treatment-related changes in serum chemistry parameters, including serum glucose and symmetric dimethylarginine (SDMA).

A reticular pattern was observed on the surface of the liver of one control, three 1X, four 3X, and three 5X group cats.

How Supplied: SENVELGO (velagliflozin oral solution) 15 mg/mL, 30 mL nominal fill volume is supplied in a 45 mL plastic bottle with dosing syringe.

NDC 0010-4614-01

Storage Information: SENVELGO can be stored at or below 77°F (25°C) with excursions permitted up to 104°F (40°C). Once the bottle is opened, use the contents within six months.

Approved by FDA under NADA # 141-568

Marketed by:

Boehringer Ingelheim Animal Health USA Inc.
Duluth, GA 30096

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Revised 06/2023



View from the Board

Creating Healthy Ecosystems One Practice at a Time

The One Health initiative aims to sustainably balance and optimize the health of people, animals, and their shared ecosystems. As veterinary professionals, we share stewardship with environmentalists, medical professionals, teachers, botanists, researchers, government officials, and others to optimize the health of those we serve. Recognizing the interconnectedness of each sector is critical to ensuring lasting change.

I recently had a remarkable journey to the Southeastern Cape of South Africa with seven colleagues to work with an individual whose life work is the embodiment of the One Health initiative. Dr. William Fowlds, a wildlife veterinarian and owner of Ikhala Veterinary Services, has focused his veterinary career on making an impact in his homeland through conservation efforts to improve the health of communities, farms/reserves, and native wildlife

and to restabilize the ecosystems in which they all exist. He took us out of our daily lives and immersed us into the world of conservation and preservation. We got to experience first-hand how an intentional and purposeful vision can impact an ecosystem one hectare at a time. This experience left an impression on each of us and has inspired us to look for ways we can leave this world better than we found it.

It is a joy to get to work in a profession that makes a difference. We foster healthy ecosystems for animals and the environment in which they live, and we protect our communities.

We don't have to do this on a grand scale. We impact change by taking care of those walking in the front and back doors of our hospitals. We can choose to cultivate healthy environments in which our team members can thrive. Optimizing a positive team culture creates psychologically safe environments for both people and pets. Embracing initiatives that

reduce stress, such as Fear Free and Cat-Friendly Practices, can contribute to the improved health of the patients we care for, the team we employ, the environment we work in, and the community we serve. When our team's needs are met and people feel cared for and valued for the work they perform, opportunities arise to pass goodwill along to others in our community.

We get to leave our profession and our communities better than we found them through thoughtful choices, unified strategic decisions, and collaborative efforts. We can make a choice to be better and do better. This ripple effect can bring about impactful and meaningful change in our communities to benefit the pets, people and ecosystems we serve.



Parva Bezruczyk, DVM is a co-owner of Arizona Animal Wellness Center in Gilbert, Arizona, and the vice president of the AAHA Board of Directors.

The Scoop

Trends in Feline Health: Trupanion Data

Trupanion, a provider of medical insurance for cats and dogs, recently offered insights into feline health derived from over 20 years of their pet health data.

Trends in cat ownership and insurance coverage:

The percentage of cat-owning US households reached 24% in 2023. Nearly 50% of these cat-owning households have two or more cats. More pet owners are turning to pet medical insurance. The 2023 North American Pet Health Insurance Association (NAPHIA) State of the Industry report noted that the number of insured cats in the US and Canada totaled over 1.3 million in 2023, up from less than half a million in 2019.

Trends in unexpected veterinarian visits:

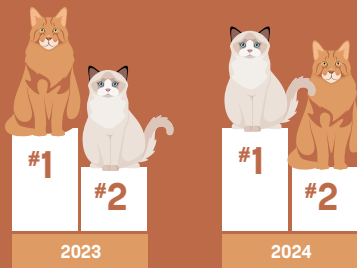
According to Trupanion data, dogs make 82% more unexpected visits to the vet than cats. Trupanion General Manager, Stephen Rose, BVSc, commented on this trend. “One... reason [for this] is that cats tend to hide their pain and discomfort, which can mask signs of illness.”

Trends in Feline Insurance Claims

The 10 most common insurance claims for cats, reported by Trupanion:

1. Renal failure
2. Vomiting
3. Diarrhea
4. Diabetes mellitus
5. Hyperthyroidism
6. Urinary Tract Infection (UTI)
7. Inflammatory Bowel Disease (IBD)
8. Lymphoma
9. Mass lesion
10. Gastroenteritis

Fun Cat Facts



In 2023, ragdoll was the top breed with the Maine coon following in second place. So far in 2024, the most popular cat breed is Maine coon; ragdoll is in second place.



Locations with the highest cat populations for Trupanion members.

Luna, Oliver, and Leo

The most common cat names for Trupanion-insured cats.



In 2024, 35% of cat owners using Trupanion have two or more cats insured.



Drug Implant Shows Promise for Managing Feline Obesity and Diabetes

Researchers estimate that up to 40% of the domestic cat population needs help managing their weight, and feline obesity is now one of the most common challenges encountered at veterinary practices. Obesity in cats, as in humans, is associated with decreased life expectancy and various health complications.

Vivani Medical, Inc., is a biopharmaceutical company developing miniaturized, long-term drug implants for chronic weight management in obese or overweight human patients with one or more risk factors. Recently,

Vivani Medical's miniature, subdermal, exenatide drug implant was tested in cats to manage feline obesity and diabetes. The results published in *BMC Veterinary Research* showed positive proof-of-concept weight loss data with OKV-119.

"The data published in *BMC Veterinary Research* is further evidence that our proprietary NanoPortal implant technology holds promise in reducing obesity in cats," said Adam Mendelsohn, PhD, Vivani president and chief executive officer.

"Assistant Manager Cat" Receives Cancer Treatment

When Horatio, "Assistant Manager Cat" of Seventh Son Brewing Co. in Columbus, Ohio, was diagnosed with fibrosarcoma, the brewery opened a GoFundMe where 50% of the proceeds go to Horatio's treatment, and the other 50% go to the University of California, Davis Feline Cancer Research Fund and an Ohio organization dedicated to saving pets' lives through funding veterinary care.

The Feline Cancer Research Fund is managed by UC Davis's School of Veterinary Medicine's Center for Companion Animal Health. Michael Kent, MS, DVM, director of the center, said of the donation, "This gift to benefit cat cancer research will be put to use to help us better tackle this disease that is the number one killer of cats. Our research has shown that over 35% of cats will die of this disease and it is vital that we come up with better diagnostics and treatments."

Key current research includes:

- A study of longevity and mortality in cats.
- A study of feline oral squamous cell carcinoma (OSCC).
- A study on predicting early treatment failure in feline nasal lymphoma (feNL) treated with radiation therapy.



Quote of the Month

In nine lifetimes, you'll never know as much about your cat as your cat knows about you.

Michel de Montaigne, Philosopher



AAHA

Community

Question

I am looking for CE training recommendations for our lower-level managers.

We want to offer some opportunities for assistant managers looking to level up in the space. Does anyone have programs they really liked or would recommend?

A: AAHA's Beyond Medicine is always a good one to start with and one that we found extremely valuable.

A: Vetfolio has a great selection of courses for leaders and management. I personally loved "Lead like a Unicorn."

Offer your CE training suggestions for assistant managers and join in on the conversation at community.aaaha.org. For help, email community@aaaha.org.



Common Heartburn Medications May Help Fight Cancer and Other Immune Disorders in Dogs

Researchers at the Texas A&M School of Veterinary Medicine and Biomedical Sciences (VMBS) have discovered that proton pump inhibitors (PPIs)—medications commonly used to treat heartburn and acid reflux in people and animals—may be effective at fighting cancer and other immune disorders in dogs. Similar research is ongoing in human medicine.

PPIs are designed to inhibit the proton pumps that govern stomach acid production, but new research suggests they also may affect pumps in cancer and immune cells.

"While we can't use PPIs alone to treat cancer, we're hopeful that we may be able to improve the effectiveness of chemotherapies by combining them with PPIs in the future," says Emily Gould, DVM, assistant professor in the Department of Small Animal Clinical Sciences (VSCS).

"Cancer cells have their own microenvironment; acidic conditions help drive inflammation and metastasis," Gould says. "They have their own proton pumps that help create those acidic conditions. Our research suggests that PPIs might inhibit these pumps in addition to the ones in gastrointestinal cells."

A New Way to Fight an Aggressive Cancer in Dogs

Hemangiosarcoma is a common and aggressive type of cancer in dogs that arises from blood vessel cells and spreads very quickly, frequently affecting the spleen, liver, heart, and other organs.

"It is common for these tumors to suddenly cause massive bleeding into the abdomen or chest," says Heather Gardner, DVM, an assistant professor at Cummings School of Veterinary Medicine at Tufts University.

Gardner, a veterinary oncologist who has investigated osteosarcoma and lymphoma in dogs for several years, is studying ways to use a new technique called liquid biopsy to identify tumor-specific markers in a blood sample to detect and monitor hemangiosarcoma.

This work is part of a larger project led by Cheryl London, DVM, PhD, DACVIM, associate dean for research and graduate education at Cummings School, Tufts University.

Their goal is to study plasma samples from dogs who have hemangiosarcoma and validate that the liquid biopsy approach can identify biomarkers or genes that are prognostic for patients. The second part of the project is to use those panels to determine which therapy is best for individual dogs with hemangiosarcoma.

AAFP/EveryCat Health Foundation Scholarship Recipients Announced

The American Association of Feline Practitioners (AAFP) and EveryCat Health Foundation have announced the 2024 scholarship recipients for veterinary students pursuing a career in feline clinical practice or feline clinical research.

Jessica Holmes, University of Georgia, Class of 2025 was awarded the Clinical Research Scholarship. Haley Momany, Washington State University, Class of 2024, received the Clinical Practice Scholarship.

Holmes' postgraduate goal is a residency in neurology. She hopes to reimagine and improve the feline neurologic exam and increase the amount of research into feline neurologic disorders.

Momany aims to become a board-certified internal medicine specialist with a strong focus on feline health.

"We are honored to recognize individuals dedicated to the advancement of feline health and hope to inspire continued



commitment with these awards," said Jackie Ott Jaakola, executive director EveryCat Health Foundation.

AI-Driven, Personalized Drug Response Predictions for Canine Cancer Patients

In response to increased veterinary demand for personalized canine cancer testing, ImpriMed has launched ImpriMed Drug Response Predictions (DRP), providing veterinarians with AI-driven clinical outcome predictions, tailored to the individual needs of canine cancer patients.

ImpriMed's DRP uses AI models trained on extensive, clinically proven data sources to make personalized treatment predictions for canine cancer.

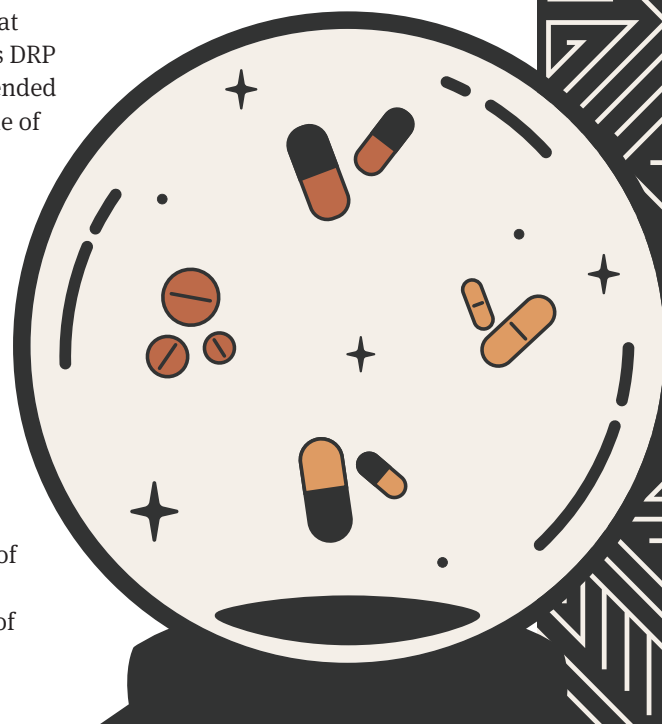
"With ImpriMed's personalized predictions, veterinarians can quickly and confidently establish treatment plans that improve the quality of life for patients," said Sungwon Lim, ImpriMed's CEO and co-founder.

ImpriMed cites the following results related to its

application of AI technology to personalized medicine:

- Extended Canine Median Survival Time: *Frontiers in Oncology* reports that dogs with relapsed B-cell lymphoma that received ImpriMed's DRP experienced an extended median survival time of 160 to 187 days.
- Improved Veterinarian-Client Relationships: 80% of surveyed veterinary oncologists (70 out of 87) reported positive client reactions to ImpriMed.
- Recommended by Veterinarians: 95% of surveyed veterinary oncologists (83 out of 87) using ImpriMed

were satisfied with both the company's report content and ImpriMed's services overall.





↑ Bella (left) and Squid (right) with the City of Davis Fire Department who saved Squid from a house fire.

Dog Survives CO Poisoning in House Fire

Squid, a 5-year-old female husky/terrier mix, was successfully treated for carbon monoxide poisoning after a house fire, according to UC Davis's VetMed News.

Squid's owner, Allison O'Donnell, DVM, and her fiancé were away when their house caught fire. City of Davis Firefighters found Squid and provided her oxygen therapy at the scene. Animal Control transported Squid to UC Davis veterinary hospital where she was immediately placed on oxygen in the emergency room. O'Donnell was able to be with her there.

Squid's respiratory status declined that first night due

to swelling in her throat and nasal cavity from inhaling hot ash in the fire. Steroids helped reduce inflammation, and Squid responded well to oxygen therapy. In the morning, she appeared bright and responsive.

On the third day, Squid was comfortable breathing room air. Ophthalmologists successfully treated the corneal ulcers in her eyes caused by hot smoke and ash in the fire.

Discharged after five days, Squid is monitored closely by O'Donnell who expects Squid to be fine in time for their move to Philadelphia.

Cornell College of Veterinary Medicine Hosts Conference on AI in Vet Med

The Cornell College of Veterinary Medicine (CVM) reports that, recently, experts in veterinary medicine, AI researchers, industry pioneers, and thought leaders from around the world gathered at the CVM for the Symposium on Artificial Intelligence in Veterinary Medicine. In a release, the school states that the event, nicknamed "SAVY," was originally envisioned for 50 participants but ended up drawing over 200 registrants to the three-day program.

"There was a real thirst for knowledge here," said Parminder Basran, PhD, FCCPM, associate research professor in the Department of Clinical Sciences and one of the event's organizers. "What motivated us to create SAVY was the realization that many conversations and working groups on AI were happening in individual specialties within veterinary medicine, but so far no one had

brought together the broader veterinary community."

The symposium's events were organized around four pillars of veterinary medicine where AI is already having a large impact—patient-facing medicine for companion animals and livestock, population medicine, and One Health. Four keynotes and numerous talks explored these themes, while a poster session, a small-group workshop, a closing panel, and social gatherings offered participants further opportunities for discussion and building connections. A roundtable brought together industry experts and academic leaders to share major challenges and possible solutions.

A few topics stood out for continued discussion, particularly figuring out the ethics of AI as well as the need for more clean, standardized, and reliable data.



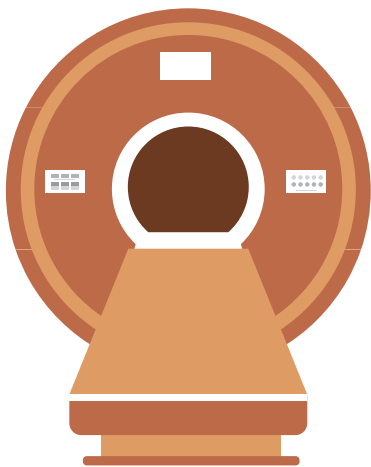
"More work must be done to gather the right data in the first place and to emphasize the need for data based on domain expertise over general-purpose data," said Media Cause vice president of technology and conference speaker Luke Dringoli.

MSU Veterinary Medical Center's New 3T MRI System

A new state-of-the-art MRI system at the Michigan State University's Veterinary Medical Center will produce clearer-than-ever images of patients, providing a superior tool for veterinarians to diagnose medical issues accurately and to determine targeted treatment plans.

The 3T MRI System's magnet has twice the field strength of the hospital's previous MRI. (The T in 3T is short for "Tesla," the unit that defines a magnet's field strength.) The system also uses artificial intelligence and deep learning to refine both the scanning process and image quality. The machine is even capable of multinucleic imaging, a scanning innovation currently in its earliest stages.

"The Philips MR 7700 is the first that Philips installed in a veterinary setting," says Rebecca Linton, MBA, who manages the Hospital's Radiology Service. "This puts us at the forefront of clinical imaging. MRI technology is constantly developing and advancing—with the new system's features, we'll be positioned to perform any type of imaging study that may be desired over the next 20 years."



FDA Approves Drug for Dogs with Pulmonary Edema

The US Food and Drug Administration (FDA) recently conditionally approved UpCard-CA1 (torsemide oral solution) for use in the management of pulmonary edema in dogs with myxomatous mitral valve disease (MMVD).

MMVD is a disease in dogs where an abnormal heart valve or muscle does not allow the heart valve to close completely, impacting the ability of the heart to pump blood and resulting in an enlarged heart (cardiomegaly). If left untreated, this condition may lead to heart failure and fluid accumulation in the chest and abdomen (congestive heart failure).

The initial conditional approval is valid for one year with the potential for four annual renewals. During this time, the animal drug sponsor must demonstrate that it is actively working toward collecting the remaining effectiveness data needed to achieve full approval. The animal drug sponsor must attain full approval within five years after receiving conditional approval, or it will no longer be in effect.

Zoo Deer Undergoes Complicated Fracture Repair

Thanks to her relationship with humans, a white-tailed deer named Annabelle was able to recover from an injury most deer don't come back from, reports the Tufts University Cummings School of Veterinary Medicine.

Annabelle imprinted on humans at just a few weeks old, after she was rescued by staff from the Massachusetts Division of Fisheries and Wildlife. At about eight weeks old, Annabelle started her new life at Buttonwood Park Zoo in New Bedford, Massachusetts.

While running through the pasture exhibit, Annabelle caught her leg in rocks along a stream. When she tried to free herself, she fractured her right elbow. Jill Hudon, CVT, LVT, a veterinary technician at the zoo, sent over Annabelle's medical report and radiographs to staff at the Cummings School.

An isolation area was set up for Annabelle at Cummings School's Hospital for Large Animals. Emmy Budas, DVM, who was completing an internship in the Zoological Companion Animal Service at the Cummings School's Henry and Lois Foster Hospital for Small Animals (FHSA), asked Annabelle's zookeepers for advice on how to gain Annabelle's trust so they could treat her.

"I learned that grapes are her favorite food. She grew fond of me after a couple of grapes," Budas said. "I'm not sure another deer would have made it—most would be fearful and flee the situation."

The fracture was comminuted and had started healing abnormally over the two weeks since the break, so the doctors had to break down the callus and resituate the pieces of bone into the correct spots. Some pieces of bone were missing entirely.

During the surgery, Mike Karlin, DVM, DACVS (LA), DACVS (SA), an assistant professor in the Department of Clinical Sciences at FHSA, successfully attached two plates and several screws to repair her leg. Annabelle spent five days at HLA recovering before returning to Buttonwood Park Zoo, where she received physical therapy and made a full recovery.

5 Questions for a Feline Specialist

Melissa Mustillo, DVM, DABVP (Feline Practice)

Melissa Mustillo, DVM, DABVP (Feline Practice), is managing veterinarian at A Cat Clinic in Boyds, Maryland. She received her DVM from the University of Tennessee, after which she moved to Maryland. She joined the team at A Cat Clinic following an intense, year-long internship in medicine and surgery. Mustillo has a strong interest in ultrasonography, internal medicine, and geriatric medicine. She became board-certified in Feline Practice in 2020.



1 What made you choose your specialty area?

Cats are fascinating and mysterious animals. They are also notoriously underserved in veterinary medicine. Going through my veterinary education, I connected more with cats and feline medicine than any other area. This is why I have dedicated my professional life to them. My goal is to educate cat owners and other veterinarians about feline health and welfare and to help strengthen the human–animal bond.

2 What is one thing you wish you could tell general practitioners regarding your specialty?

Do not be afraid of cats! I promise that cats are more fearful of you, especially in a veterinary setting. Also, there is so much educational material out there on how cats' medical needs are different

than dogs'. I would also like the veterinary community to accept ABVP diplomates as specialists in their field and to refer patients to us just as they would a surgeon or oncologist.

3 What is one thing that clients (pet owners) could do that would make your job more satisfying?

I want clients to do their research before adopting a cat. Cats are not the easy-going, independent creatures everyone thinks they are. Cats have many physical, environmental, and behavioral needs that must be met so they can lead healthy, enriched lives.

4 What is the most rewarding part of your job?

The most rewarding part of my job is bonding with my clients

and watching their cats grow from kittens to seniors. I love being part of the human–animal bond. Whether it is a happy new kitten appointment, a complicated senior with multiple health issues, or an end-of-life conversation, I deeply love being there for clients and their cats.

5 What advice would you give to someone considering your specialty?

If you are passionate about cats and strive to be the best doctor you can be, I highly encourage becoming a Diplomate of the American Board of Veterinary Professionals. Being an ABVP diplomate motivates me to constantly learn and offer my clients top-quality medicine and care. I also love being a part of our supportive ABVP community.



Preventive care matters for your veterinary equipment, too

Equipment malfunctions impact revenue, staff, and patient care

The following is sponsored content from MWI Animal Health

As a veterinary practice owner, you know how crucial your equipment is for effective patient care. You're probably also familiar with machine breakdowns. "Every veterinarian has experienced being halfway through a dental (cleaning) and having their dental machine break," says Rick Warter, Sales Director - Medical Technology at MWI Animal Health. "Everyone has had IV pumps go out, and everyone has had anesthesia machine issues where their patients are having potentially life-threatening problems that they've had to deal with."

3 reasons equipment checkups are important

Regular maintenance of your machines is critical to running a smooth, profitable clinic. Equipment breakdowns and malfunctions affect not only your bottom line, but they also impact both your clients and your staff.

1. Impact on practice revenue

"Remember that the cost of fixing your equipment is not the only cost associated with an equipment breakdown," Warter says. You'll need to use a staff member's time to reschedule patients. You may also miss out on some revenue due to clients not rescheduling.

Then there's the risk of losing clients to another clinic because you can't provide a service. "Some of those clients may decide, 'I'm not waiting. I've got family coming into town next week and I don't want my dog's breath to stink, so I'm going to find someone who will do a tooth cleaning now,' and they'll take their pet to another clinic to have that service done," says Warter. This could result in your client transferring to the other clinic permanently.

Along with all of this, "it looks bad to have your equipment breaking down and not being able to provide service," Warter says. "It doesn't give an overall good impression to a customer." Your clients may think your practice doesn't stay up to date or invest in the future.

2. Impact on pet parents

Warter gives this example: Let's say a pet parent drops their pet off at your clinic to get their teeth cleaned under anesthesia. If the machine breaks before or during the procedure, it can't be completed. The patient has to be woken up and rescheduled to go under anesthesia yet again. This is extremely inconvenient to pet parents and could shake their trust in your practice. Plus, having to call a pet parent to explain the situation is not a good experience for anyone involved.

There's also the very real issue of patient safety should you have a malfunction. Certain devices such as anesthesia vaporizers and IV pumps need to be calibrated regularly to make sure they're delivering the right amounts. If they're not, you're putting your patients at risk of an adverse event or even death.

For example, "if you're never having your IV pump calibrated and you set it to deliver 120 mL and it delivers 400 mL because it's not working correctly, that could cause severe complications because you've over-delivered fluid," Warter says. "Conversely, if it's delivering 50 mL to a pet that's dehydrated, you're not going to be meeting the medical needs of that pet."

3. Impact on staff

When equipment isn't working, it can take days to get it fixed, which affects your staff and your workflow. Someone will need to call patients to reschedule visits while the machine is down. Allocated staff resources will have to be changed because technicians who were scheduled to do procedures with the broken machine will need to find other work to do during that time.

"A routine dental takes about an hour. If you're doing two a day for five days, that's 10 hours of work you've scheduled for technicians that they're not going to be able to do," says Warter. "They always have things to do, but you're not going to be generating the same revenue in those time spans." And once your machine is back up and running, you'll have to reschedule those 10 hours. "Now you've got 20 hours' worth of work to do because you've got the 10 that was normally scheduled and the extra 10 that you missed," Warter says. "It has an impact on staff morale to have to do those catch-ups."

Improper maintenance of your equipment also makes your staff less efficient. For example, if a centrifuge is not routinely maintained, it will become off-balance. "You have to have someone stand with it or find a workaround or it's going to vibrate off the table. That's not super-efficient," says Warter. "Every piece of equipment, as it ages and is not well maintained, starts to get those little nuances where you have to adjust what you are doing just to get it to work."

But this can cause frustration for your staff, especially when their focus is on patient care. "When I reach for an IV pump, I

want to know that it delivers 100 mL when I set it for 100 mL," says Warter. "I don't want to have to spend 15 minutes trying to figure out what's wrong." Unpredictable equipment could even result in your clinic staff not using it at all, affecting patient care.

The bottom line

Veterinary equipment breakdowns and outages result in lost revenue and potentially poor medical outcomes for your patients. Equipment breakdowns also affect your staff, your clients, and your reputation.

"Pets aren't the only ones who need preventive care. The medical equipment veterinary practices rely on every day does, too," says Julia Loew, Senior Vice President of Commercialization Services at MWI. "Our equipment health solution prevents the delays, headaches and danger caused by faulty equipment. By supporting the preventive health of the machines that keep a veterinary practice running, we ensure that practices can focus on what matters most: taking care of their pet patients."

Comprehensive solutions that work for you

"MWI has the equipment solution I have been looking for throughout my 35 years in the profession. With their help we can seamlessly deliver care to our patients with little to no downtime due to equipment failures while taking a huge burden from our care team. I am looking forward to our equipment lasting longer and the care team learning how to better care for it. I have been exceptionally impressed with the level of service that MWI has delivered during the setup and implementation phases of this project. The program is very customizable and their expert guidance and review of the options available has allowed us to set it up to serve our exact needs. Thank you MWI for bringing this solution to the market!"

Christine Kjeel, Associate Director, Financial Operations at Modern Animal

AmerisourceBergen

MWI Animal Health®

Seamless care starts with healthy equipment

Introducing MWI's equipment health solution

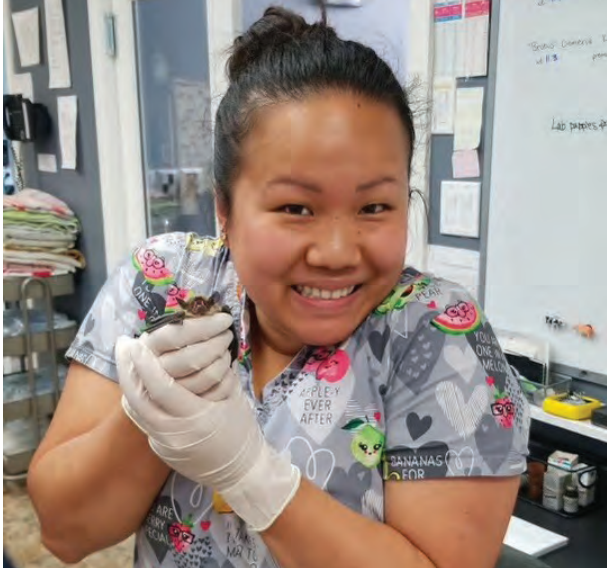
We understand the critical role that equipment plays in delivering quality care. Broken equipment can cause delays in pet care, turning away or rescheduling procedures.

Seamless care begins with healthy equipment. Properly working equipment ensures you can perform the right care in a timely manner for your patients. Save time and prevent frustration by focusing on the preventive health of your equipment.

Take control of your equipment's well-being today!

Ask your MWI sales representative how our equipment health solution can benefit your veterinary hospital.





AAHA MEMBER

Employee of the Month

Mabel Ng, RVT

Registered Veterinary Technician

Albert North Veterinary Clinic,
Regina, Saskatchewan

Year started in vet medicine: 2019

Years with practice: 3

Nominated by Morgan Yastrub

Why is Mabel so awesome?

Mabel is an exceptional technician and teacher. She is patient and intelligent/knowledgeable, and you can see her passion for the field of veterinary medicine.

How does she go above and beyond?

In addition to her regular tech duties, she is also always willing to teach and share her knowledge with our newer techs. She is also always open to learning and experiencing new things. She cares about her coworkers and likes to check in and make people smile and she always has their back. Mabel is also wonderful at "keeping her cool" and dealing with challenging clients in a calm manner.

In their own words:



Why do you love your job:

I feel like no matter how small the task, I always feel like I am helping someone or something at the end of the day.



Pets at home:

I have two dogs, Bailey and Ella, and two cats, Reggie and Emily.



What brought you to the profession:

It is an underrecognized industry despite the heroic work that gets put into it. I wanted to be a part of that.



Hobbies outside of work:

Cooking, gardening, and anything outside!



Favorite TV show/Celebrity:

Grey's Anatomy, Blake Lively.

Each month in *Trends*, we will spotlight a team member from an accredited practice. Does your team boast an outstanding veterinarian, veterinary technician, veterinary assistant, customer service representative, or kennel worker? Nominate your employee at aaha.org/EOTM, and you and your employee can win \$500 in gift cards courtesy of CareCredit!

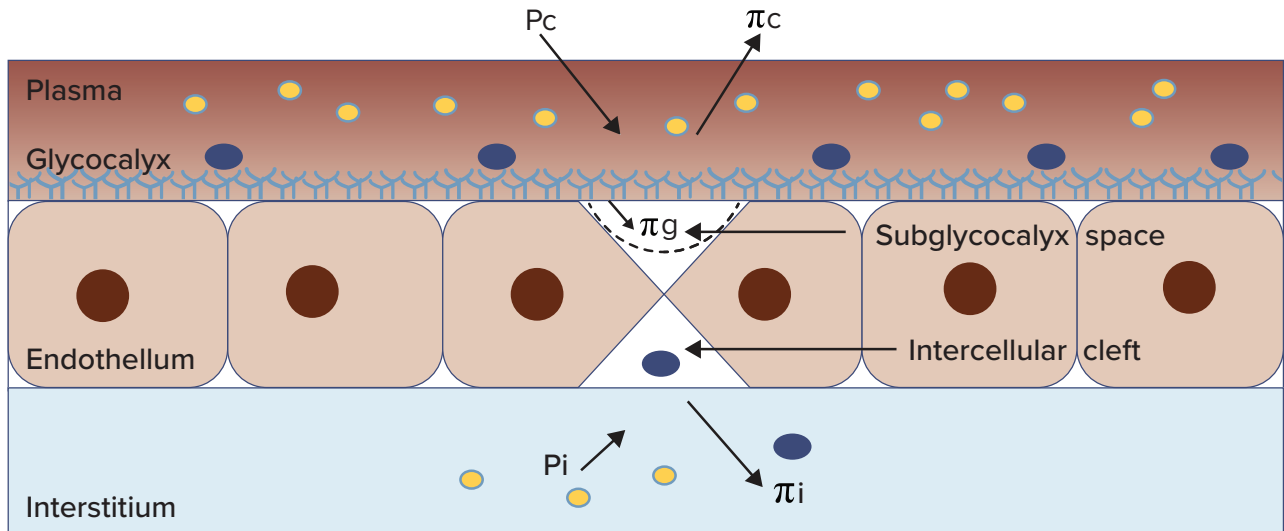
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*The Employee of the Month contest is administered by AAHA.

Photo courtesy of Mabel Ng



Case Report of the Month



A Fluid Situation

Fluids are drugs used in veterinary patients capable of producing beneficial therapeutic or inadvertent harmful effects within the body's intravascular, interstitial, and intracellular fluid spaces. The individualized design of a fluid therapy plan requires careful patient assessment and targeted selection of proper fluid types, administration routes, and rates, along with adjustments during therapy tailored specifically as per the individual patient's fluid requirement and therapeutic response.

These new *2024 AAHA Fluid Therapy Guidelines for Dogs and Cats* from AAHA are an update to the 2013 version of the guidelines, and feature a new task force and updated information on everything related to fluid therapy. This issue of *Trends* has several pages devoted to the new guidelines, and you can download and **read the full guidelines in the latest issue of JAAHA, available at jaaha.org. You can also access the full guidelines at aaha.org/fluid-therapy.**

Read the full guidelines

in the latest issue of *JAAHA*, available at jaaha.org, or at aaha.org/fluid-therapy.



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which stress nutrition is right for your patient?

Urinary Health

Urinary health nutrition to reduce the frequency of FIC signs, dissolve struvite stones, and decrease risk of recurrent struvite stones/plugs and CaOx stones.

Diarrhea/Constipation

Fiber Responsive Enteropathies, Antibiotic Responsive Diarrhea, Infectious Diarrhea, Megacolon (responsive to fiber)

Overweight & Urinary

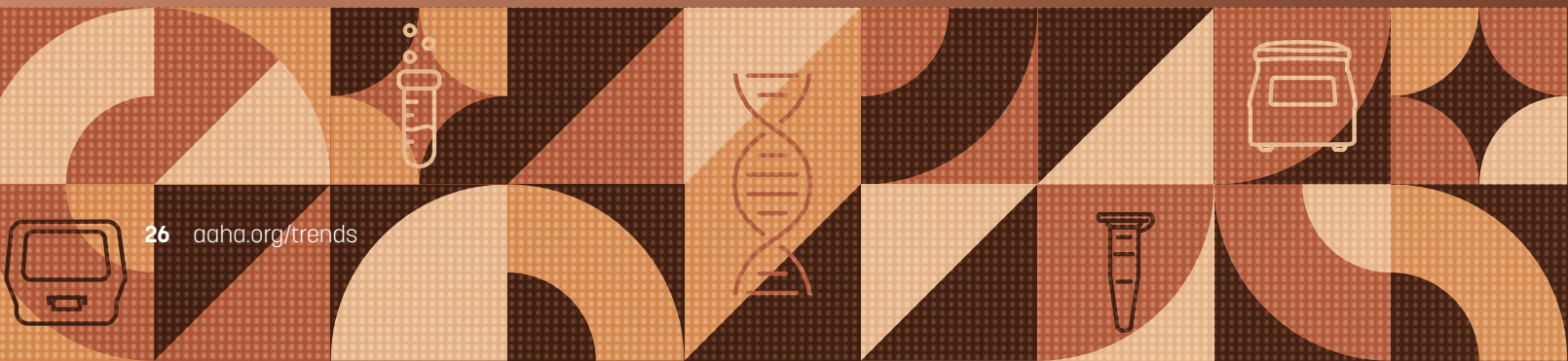
Nutrition that reduces the recurrence of FIC signs, dissolves struvite stones, reduces risk of calcium oxalate stones and helps maintain a healthy weight in cats.

c/d Multicare Stress

Gastrointestinal Biome Stress

c/d Multicare Stress + Metabolic





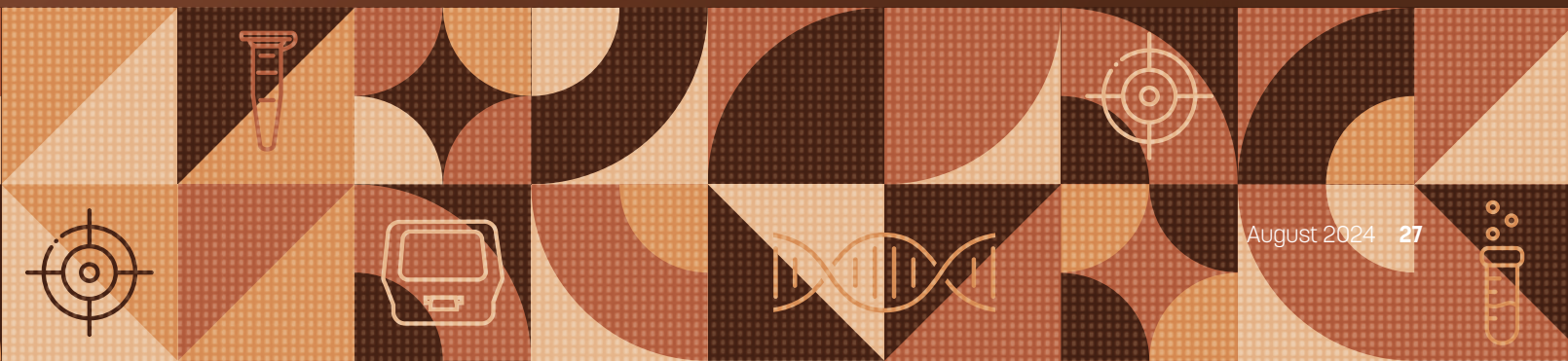
Thinking *Beyond* the Everyday Panels

Next-Level Diagnostics for Cats
Are at Your Fingertips

BY RENEE RUCINSKY, DVM, DABVP (FELINE)

I think most of us have become pretty good at recommending annual blood screens for our patients. And our clients are so well-trained about poop that they bring a stool sample whether we ask for it or not. We send reminders and run basic screens, but are we doing all we can for our feline patients? There are some new (and not so new) diagnostic tests available, and we're going to run down a few of them here.

RistoAmudov, Bulgm/Stock via Getty Images Plus



The Scoop on Poop

If you are still performing fecal flotations in house, I would strongly recommend you consider sending them to a reference laboratory. Although my longtime registered technician sometimes pines for the days of doing in-house fecals (“they were fun,” she said with a touch of melancholy), the truth is that we are just not capable of getting complete, accurate, and repeatable results with in-house testing.

Reference laboratories have upped the intestinal parasite identification game tremendously, and with the added fear of zoonosis, veterinarians have a responsibility to make the best diagnostic choices. In-house fecal parasite testing does not have the added bonus of having antigen testing done along with visual identification of parasite oocysts.

Intestinal parasite immunoassays have become affordable and standard for reference labs. They allow veterinarians to identify and treat parasitic infections that would undeniably be missed if the stool test was performed in-house. With intermittent shedding of oocysts, some parasites are almost never seen on a floatation. How many times have you seen tapeworm segments on a cat’s rear end, only to have the fecal test come back negative?

The first upgrade in intestinal parasite testing is specific parasite immunoassays. Typically, these

tests include a basic zinc sulfate centrifugal flotation, but they also test for the presence of antigen to common parasites, such as roundworm, tapeworm, whipworm, hookworm, *Giardia*, and *Cystoisospora*. Cats with parasites can frequently be asymptomatic carriers, and if antigen is identified, the patient should be treated.

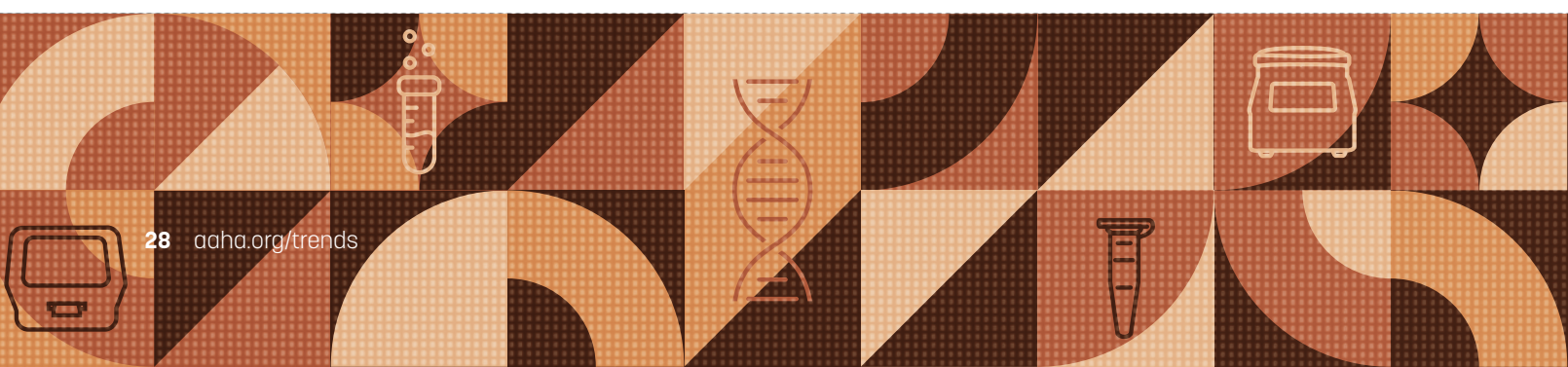
Another upgrade is available for patients who have diarrhea, and for whom fecal antigen testing does not identify a cause. Real-time polymerase chain reaction (PCR) testing increases sensitivity and detection even further and has the added bonus that it can be used to potentially identify which strains of parasites are resistant to anthelmintic drugs. Stool can be submitted for PCR testing, which not only tests for presence of antigens to common parasites, but also identifies and quantifies the presence of pathogenic bacteria

and viruses. These tests can improve patient care by quickly identifying a pathway to treatment.

You Might Think It's Funny, But It's Snot

Speaking of PCR testing, being able to target the causative organism for feline upper respiratory disease can be invaluable. Is it viral? Is it bacterial? Is it something else entirely? Upper respiratory PCR testing is done by submitting a conjunctival and/or pharyngeal swab and looks for common feline viral and bacterial respiratory pathogens. No one wants to have to deal with chronic rhinitis, and one of the best ways to avoid it is to treat cats and kittens correctly from the start. The upper respiratory PCR test allows for specific treatment based on the pathogen identified, ending the merry-go-round of antibiotics, antivirals, and supplements. The cats feel better

Intestinal parasite immunoassays have become affordable and standard for reference labs. They allow veterinarians to identify and treat parasitic infections that would undeniably be missed if the stool test was performed in-house.





faster when we pick the correct medication first, and we can hopefully prevent any long-term effects of a chronic infection and inflammation.

So Gland I Met You . . .

Endocrinology testing isn't new, but sometimes it's good to have a refresher on what's available. If you manage hyperthyroid cats, or cats who have been treated with radioactive iodine 131, consider adding a diagnostic machine such as the Zomedica Truforma to your practice. These machines allow you to run feline-specific thyroid-stimulating hormone (TSH) levels in about 20 minutes. Why is this so great? Well, first of all it's an actual feline calibrated TSH level. Secondly, hypothyroidism is occurring way more than we realize

after treating with I-131 or even with methimazole.

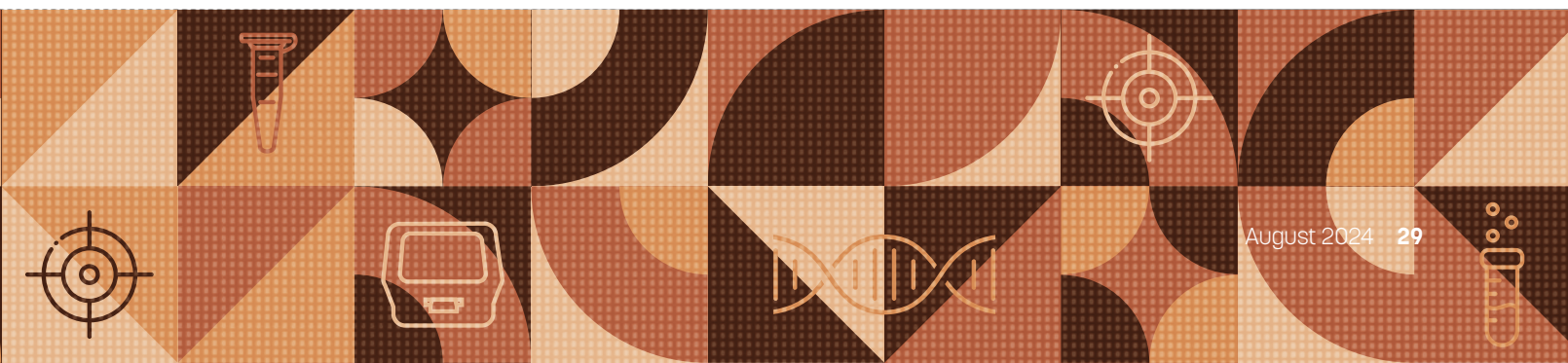
Monitoring total thyroxine levels to evaluate how well hyperthyroidism is managed may not be enough. The T4 level can be in the low normal range, which seems OK, but if we were to check TSH, there is a fair chance that it will be elevated. If that's the case, we either need to start levothyroxine or reduce the methimazole dose. Hypothyroidism is just as dangerous to kidney function as hyperthyroidism. Running a TSH level on cats with early hyperthyroidism can be useful to determine whether they are candidates for radioactive iodine treatment. If the TSH is still measurable, the nonaffected thyroid gland is still working, and administration of I-131 can destroy normal functioning tissue.

Are you getting the most of your in-house lab machines? Did you know that you can get a fructosamine value with some in-house chemistry machines? I only mention this one because I recently found out that wasn't common knowledge. You don't need to wait 24 to 48 hours for results, meaning you can make adjustments for your diabetic cats virtually in real time. Being able to adjust insulin dosages sooner rather than later improves patient care and potentially reduces the likelihood of complications.

Speaking of diabetes, having a handheld ketone meter is invaluable when treating diabetic patients, and makes using the new SGLT2 inhibitor drugs much easier to use. Sending out blood for ketone monitoring can take 24 hours or more to get results, which is not ideal when managing a potentially sick cat. Although urine ketones can be checked, urine strips measure acetoacetic acid, which is not the most sensitive marker for ketoacidosis. How often do you need urine from a cat and his bladder is empty? The ketone monitor uses a drop of blood, just like a glucometer, and measures beta hydroxybuturate, the more sensitive measure for ketoacidosis. Both the Abbott Precision Xtra and Centrivet machines are good options. They are each around \$50.

Gastrointestinal and pancreatic screens have also been around for some time, but may be

Lay/aBird/E+ via Getty Images



underutilized. Pancreatitis seems to be a bit of an epidemic in cats, and thankfully the in-house SNAP test for feline pancreatic lipase immunoreactivity (fPLI) is pretty darned good.

Outside laboratory panels that include cobalamin, folate, and fPLI are common and provide great information. Normal quantitative fPLI levels can vary from cat to cat, and having serial values to follow over time is helpful. The incidence of hypcobalaminemia in senior cats is underrecognized, because we just aren't looking for it as much as we should. Stated cobalamin levels may be somewhat generous, with low normal values actually being abnormal. Even more underrecognized is exocrine pancreatic insufficiency (EPI). Including trypsin-like immunoreactivity (TLI) testing with gastrointestinal panels is something that we have historically thought about for dogs but need to be thinking about for our senior feline patients, too. About 30% of cats with EPI will not have diarrhea. It's not necessarily normal for cats to gradually lose weight as they age, and we need to ensure we are exploring all of the reasons why that might be happening.

Something to Ventricule Your Fancy . . .

The most common heart problem in cats is hypertrophic

cardiomyopathy (HCM), which causes a thickening of the ventricular walls and can lead to fatal complications. Most are familiar with the fact that certain breeds are more prone to this disease. The poster child for HCM is the Maine coon cat, but ragdolls are also commonly affected.

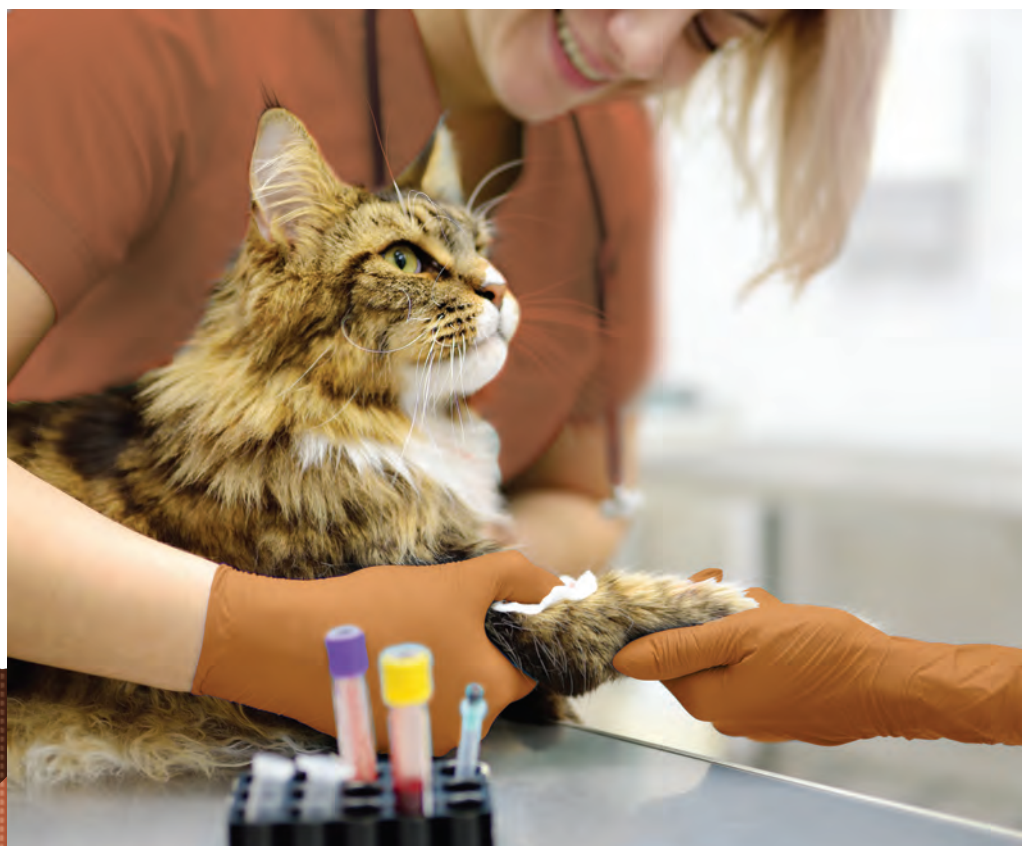
Historically we would try to screen these purebreds with sequential echocardiograms and cardiac pro-BNP testing. A specific gene mutation has been identified in Maine coon cats affected with HCM, with a different mutation identified in affected ragdoll cats.

Michigan State University Veterinary Diagnostic Lab offers a PCR test for purebred ragdolls and Maine coon cats that identifies carriers of the mutation and can categorize them as affected, carrier, or clear. Cats who are clear are unlikely to develop disease, but

those who are affected or carrier need to be monitored further. This testing can also identify individuals that should be excluded from any breeding program.

The Kidney's Motto: Urine It to Win It

It seems like we're always trying to chase down something that will help us protect and save cat kidneys, the Achilles heel of the senior feline. We look at urine concentration, urine protein, blood urea nitrogen, creatinine, phosphorus—all of it. But when you get right down to it, there's not really a whole lot we do differently based on what we see on those lab tests. We control phosphorus elevation, we hydrate, we try to minimize protein loss through the renal tubules. The blood testing that we have had



SbytovvaMN/istock via Getty Images Plus



for chronic kidney disease is relatively indirect.

What if we had tests that would identify specific renal damage earlier? What if we had tests that would help us identify exactly where the kidney damage is? And then what if we could use that knowledge to specifically target and support the affected portion of the kidney?

New renal biomarker testing is heading in just that direction. There are a few new tests that seem to have promise in evaluating kidney disease. The potential for clinical impact is still to be determined fully. The gold standard for evaluating renal function is to measure glomerular filtration rate (GFR) but that isn't something that most of us are able to do routinely in our hospitals. Creatinine has been our usual method of evaluating GFR, but it's not sensitive to detect early kidney disease.

Symmetric dimethylarginine (SDMA) is also a biomarker reflecting GFR. The SDMA test has been commercially available for several years and has been validated for cats. While creatinine can be affected by the patient's muscle mass, SDMA remains unaffected. It can be influenced, however, by the presence of other diseases, such as diabetes mellitus and lymphoma, both of which occur commonly in older cats. There can also be significant biologic variability, making interpretation of small changes difficult.

It seems like we're always trying to chase down something that will help us protect and save cat kidneys, the Achilles heel of the senior feline.

Cystatin B is an intracellular protein found in a variety of locations in the body. In healthy animals, cystatin B should not be present in urine. When it is present, it suggests the presence of renal tubular epithelial cell injury and death and may be helpful very early in kidney disease processes.

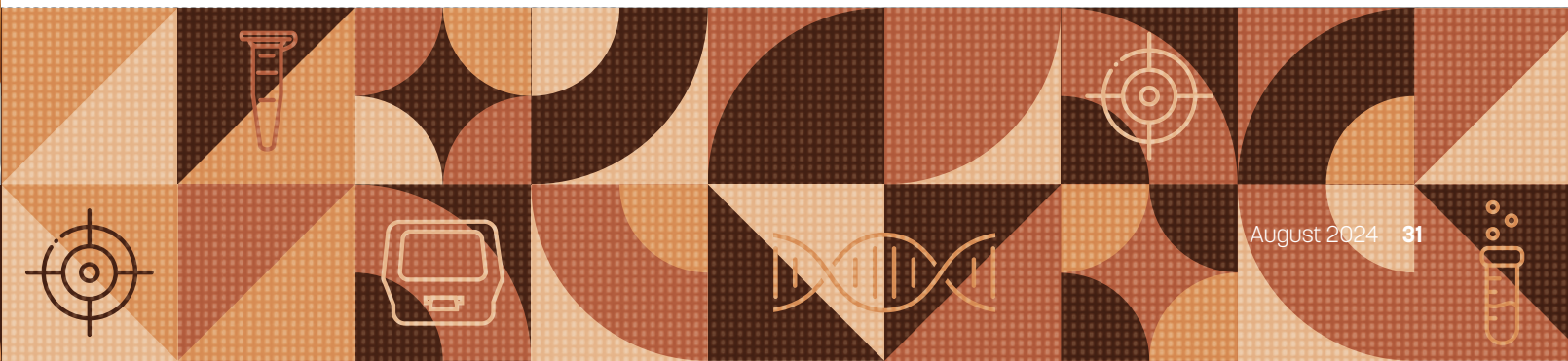
If identified before significant azotemia occurs (which would suggest more advanced renal disease), the clinician may be able to identify other conditions that would contribute to kidney damage and intervene before more permanent damage occurs. Identifying the presence of cystatin B in the urine and controlling hypertension, periodontal disease, or other diseases may allow the clinician to improve patient care and potentially slow renal disease progression. The in-the-trenches usefulness of this test remains to be seen.

Finally, fibroblast growth factor-23 (FGF-23) is a hormone responsible for calcitriol and phosphorus homeostasis and has been used to monitor chronic

kidney disease in people. It promotes urinary excretion of phosphorus. FGF-23 concentration increases in the presence of hyperphosphatemia and increased calcitriol. It may be best used with measuring phosphorus, ionized calcium, and parathyroid hormone (PTH) both for early detection of renal disease and evaluation of treatments.

The Final Assay

When I think of all that has changed and improved since I graduated so many years ago, I sometimes find it hard to believe that we practiced without the things we have now. There weren't ultrasound machines in routine practice, there weren't routine dental radiographs, or even digital radiographs. Pancreatitis was just for dogs. The changes in the last 30 years have helped our feline patients live longer, healthier, happier lives, and I'm sure many of the tests that have been discussed here will continue to move that needle even more. ■







A Technician's Perspective

Utilize Your Techs to Become
More Cat Friendly

BY JAMIE RAUSCHER, LVT

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Cats have always seemed to be the minority in our profession. They go to the vet significantly less often than dogs do. Medicine and research regarding their care always lags years behind that of their canine counterparts. This has been accepted as the norm for a long time.

But, as the years have gone by, the field of veterinary medicine has made great strides to catch up with the times. Over the last few years, credentialed veterinary technicians have continued to play a vital role in the progression of veterinary medicine. They are utilized more in practice to improve efficiency, workflow, and overall profitability in our clinics.

Technicians can also be utilized to improve feline interactions overall and reduce the impact of fear and other negative emotions that may be associated with visits. This would result in more efficient examinations, better experiences, more reliable testing, and improved feline wellbeing.

When focusing on the recently published *AAFP/ISFM Feline Friendly Veterinary Interaction Guidelines*, we are given multiple ways to help these interactions become more patient-friendly, efficient, and effective.

Understanding Cat Friendliness

Since the initial publication of the *AAFP/ISFM Feline Friendly Veterinary Interaction Guidelines* in 2011, the understanding of what is considered “cat-friendly” has progressed considerably. We now acknowledge that a cat-friendly approach encompasses both

nonphysical and physical interactions. We understand that cats have good long-term memory and can remember a single event, such as a negative experience during a veterinary visit.

This means that our interactions not only affect the cat at the time of the visit but also can influence their emotional responses and behaviors at follow-up veterinary visits. First impressions of veterinary visits can impact a young animal for life. A kitten’s experiences between 2 and 9 weeks of age can have a significant impact on the behavior of the cat throughout its life.

Credentialed veterinary technicians can be instrumental in helping to educate clients and their coworkers on the benefits of implementing cat-friendly interactions that will help to enhance appointment efficiency and overall human safety. Restraint increases negative emotions and undesirable behavioral responses. Consistent positive handling allows our feline patients to become safer and easier to work with, which then allows appointments to be completed more quickly with minimal handlers.

Cat-friendly interactions



provide benefits for both our patients and our staff in the following ways:

- Increased human safety
- Improved feline responses to future visits
- Increased efficiency
- Better veterinary care (more frequent visits)
- More accurate exam findings
- More complete examinations
- More accurate diagnostics test

First impressions of veterinary visits can impact a young animal for life.

A kitten’s experiences between 2 and 9 weeks of age can have a significant impact on the behavior of the cat throughout its life.



- Improved anesthesia time and shortened induction time to anesthesia
- Improved client satisfaction

Being a Cat Advocate

With the right training and support, technicians can help promote a more cat-friendly environment, while saving the veterinarian time and money.

Before the veterinarian sees the patient, technicians can help to evaluate a patient based on their body language and other factors.

It is always better to interact with cats in their preferred location. In the practice this is often the bottom half of their carrier or another safe, confined area (high-sided cat bed, under towels or blankets). Offering perches or elevated spaces is better for those who like to explore. Allowing the cat to approach

versus being approached is also a favorable method of introduction. Cats also may have a preference on how they like to be physically handled, which way or not at all. Technicians can help with all of these observations.

A technician's own experience with handling the patient may make the difference in a successful visit versus one that may be a disaster.

Technicians can also help update the cat's medical records with information such as caregiver education, medications recommended by the veterinarian prior to the visit, the cat's preferences, and the cat's emotional state.

As technicians, we can also help to educate our coworkers on the appropriate terminology when referring to our patients. Using negative terminology such as "evil," "nasty," or "aggressive" creates false labels that can impact

our response to patients. It can lead to a lack of sensitivity among team members toward cats in general or toward individual feline patients. Negative terminology oversimplifies individuals' personalities and prevents us from identifying the real underlying stressors. Dismissing a cat as simply "nasty" prevents us from trying to establish actual solutions to minimize the patient's stress.

The Importance of Client Interactions

Sometimes technicians need to advocate for their patient's welfare in ways that may not be obvious to clients. For example, if chemical restraint is deemed necessary for an appointment, technicians can help the veterinarian explain this to the client. Trained technicians can help the client understand the pet's needs and what needs to happen to make their pet's visit

As technicians, we can help to educate our coworkers on the appropriate terminology when referring to our patients. Using negative terminology such as “evil,” “nasty,” or “aggressive” creates false labels that can impact our response to patients.

more successful. Sometimes even rescheduling the appointment may be in everyone’s best interest. Again, this might not be convenient or even make sense to a client, but a technician can help explain the situation.

Technicians can offer advice and materials to help clients train their cat at home. This can help the cat be more comfortable with carrier travel and handling, thus improving outcomes during future visits.

Part of the solution to help minimize both patient and client anxiety involves utilizing technicians to educate clients on carrier selection, stress-relieving medications that the doctor may prescribe, training advice for travel, and mini-health exams at home to help make visits easier. Technicians can help to emphasize the benefits to the cat and the caregiver and explain that all training

must be positive in order to reinforce desired behaviors. These techniques can be demonstrated by staff who have had the appropriate training in this area.

In some cases, helping owners keep their cats in a home environment may make a world of difference in their comfort level

while they are receiving treatment. The cat as well as their owner will often be more at ease at home, and this may also result in more positive treatment outcomes.

Depending on the state that one lives in, technicians can help with these house-call appointments by taking blood pressure, medication administration, fluid administration, and even end-of-life care and counseling. Discussions on hospice care are something that technicians can assist in. You may



Phynart Studio/E+ via Getty Images

find that you have a technician that has a passion for this, and you both may benefit from utilizing them in this manner.

Providing information on websites and social media, videos or links to videos to help educate our clients can be helpful. Practices like these are instrumental in developing cat-friendly protocols that help to make visits as successful as they can be. This leads to stronger client relationships that benefit from being cat-focused and adapting to a cat's comfort level when they are in the practice.

Technicians can ask clients questions such as the following to help with a more cat-friendly examination:

- How was the trip to the practice today?
- What carrier training has your cat received?
- What other training has your cat received?
- How has your cat reacted to previous veterinary visits and examinations?
- What areas of the body is your cat comfortable with being touched?

- What changes in your cat's behavior have you noticed since the last visit?

Technicians can help their veterinarian by:

- Reviewing the medical record for history that maybe helpful in developing a successful treatment plan
- Reviewing the medical record for any conditions that might affect the upcoming visit
- If the patient is coming in for a mobility assessment, requesting that the client video the cat in its own home is best as most cats do not move normally in the practice
- Assisting to reduce wait times
- Helping to remove stressors in the waiting area
- Working to develop a cat-only exam room or area of the hospital where things are more cat friendly
- Helping to perform outpatient procedures in the exam room
- Ensuring that all equipment is available in the room prior to starting

the examination and is thoroughly cleaned between animals to remove smells

- Using appropriate feline-friendly restraint techniques, along with educating co-workers on how to do these as well

Once the patient is in the clinic, the technician can continue to assist by discussing and recording:

- Medications given regularly—ease of administration
- Notation of previsit treatments (ease of administration, dose, and timing) and effect
- Demeanor on arrival and caregiver information about the trip
- Reactions in the practice and with handling—what has worked and what has not
- Cat's behavior on its return home after the last visit

After the visit, noting things such as the need to schedule the appointment during a quieter time, and/or longer duration may also help to prepare for future visits to improve the outcome. Assessing the positives and negatives of the visit can help to make subsequent visits more successful.

A negative visit is an opportunity to improve the next time. Becoming more cat-friendly and focusing on techniques to improve your practice's overall cat care protocols for your patients and their owners will help to make your staff more comfortable in the long run. Your technicians can help to advocate for their feline patients in conjunction with their veterinarians to allow for a team approach that works for everyone and will produce pawisitive results. ■

Part of the solution to help minimize both patient and client anxiety involves utilizing technicians to educate clients on carrier selection, stress-relieving medications that the doctor may prescribe, training advice for travel, and mini-health exams at home to help make visits easier.

Veterinary Visionaries Psychological Health and Safety Guidelines

A Renaissance for the Profession

BY CORAL DOHERTY, RVT, CPHSA, MAKENZIE PETERSON, DSW, MSC,
PHILIP RICHMOND, DVM, CAPP, CPHSA, CCFP

Spring 2022 was the genesis of Veterinary Visionaries™—a future-focused collaboration that convened for an online, crowd-sourced, problem-solving event to address increasingly pervasive, concerning issues related to mental and emotional health in the veterinary profession.

These guidelines—available to all at veterinaryvisionaries.org—signal a renaissance in the veterinary profession. The guidelines bridge the gaps between existing government workplace protections at the federal and state/provincial level, our current reality, and workplace settings where there is an intentional focus on providing ways to actively prevent harm,

mitigate the known risks of the profession, and promote thriving in veterinary hospitals, organizations, and related organizational systems.

Exploring these new guidelines will lead you through the origin story of Veterinary Visionaries (VV) and into a body of work that provides insight into the language, framework, and world of Psychological Health and Safety.

You will find answers to questions such as what IS psychological health and safety? Why focus on this now? And why in veterinary medicine?

Creation of the Guidelines

As the founder of VV, AAHA recognized that effecting change

requires convening a group of stakeholders in an environment that fosters productive discussion and problem-solving. AAHA enlisted the support of 50 other organizations serving the veterinary profession and promised to provide assistance to the task force responsible for executing the winning idea.

“AAHA is proud to have supported the development and project management of the volunteer task force that wrote the groundbreaking Psychological Health and Safety Guidelines for our veterinary ecosystem,” said AAHA CEO Garth Jordan.

Over a period of several months, a group of US and Canadian volunteers with a

vested interest in the mental and emotional health of veterinary professionals formed a small Psychological Health and Safety Task Force. The task force was composed of individuals with diverse experience and expertise in veterinary medicine, well-being, positive psychology, social work, and psychological health and safety, which ensured a comprehensive and robust development process.

They collaborated to first gather, review, and integrate existing internationally implemented guidelines, standards, evidence-based practices, and resources. Next was an iterative process of synthesizing a veterinary-informed narrative and framework, including trauma-informed practices, into an outline of the required factors for a psychologically healthy and safe veterinary workplace. They were organized into three core categories: Organizational Culture, Workplace Experience, and Workplace Relationships, containing 11 Specific Foundational Guidelines.

This first version of Psychological Health and Safety Guidelines is presented with a strong organizational perspective. The intentions are threefold. First, to inspire organizations toward aspirational and actionable change. Second, to provide a framework highlighting the responsibilities of an organization and its leaders to both lead by example and provide the structure to empower employees to share in the co-creation of psychological health and safety. Finally, to spark critical conversations throughout the profession to improve the lives of veterinary professionals across the entire veterinary landscape.

The intent of this project is to ignite a transformation in the veterinary community, fostering a thriving workplace by fully embracing, integrating, and embodying these guidelines. Together, by adopting this level of accountability, the authors believe the material here can have a very positive impact and

bring about a reimagined sense of vitality for the profession. You are invited to engage in this process by celebrating your current successes and personally championing one or more of the opportunities proposed within.

Read the full text of the guidelines at veterinaryvisionaries.org. ■

From the Authors

Guidelines authors Coral Doherty, RVT, CPHSA, Makenzie Peterson, DSW, MSc, and Philip Richmond, DVM, CAPP, CPHSA, CCFP, answered a few questions about the new Psychological Health and Safety Guidelines from Veterinary Visionaries. For more, check out the NEWstat article on aaha.org.

What would you tell someone who is about to read the guidelines?

Coral Doherty, RVT, CPHSA: Try and determine where your team is, in terms of their awareness of the factors that you are looking at. Celebrate what your staff is already doing well as a win. Then go from there and determine what their state of changeability is.

What can practices expect to see internally if they adopt these guidelines?

Makenzie Peterson, DSW, MSc: When leaders integrate and support aspects of psychological health and safety into their workplaces, they will start to see their team sharing new ideas, taking calculated risks and making mistakes, and greater transparency around feedback and accountability. All of this leads to greater workplace efficiency and innovation.

Why are these Psychological Health and Safety Guidelines important to you?

Philip Richmond, DVM, CAPP, CPHSA, CCFP: Knowing the impact that this has on not only our own well-being and job satisfaction but also seeing the impact that it has on patient care. One of our guidelines is civility and respect, and what's fascinating is, when that's not in place, how challenging it is to communicate effectively in a medical workplace.



2024 AAHA Fluid Therapy Guidelines for Dogs and Cats

The AAHA Fluid Therapy Guidelines for Dogs and Cats offer an overview of the body's fluid dynamics and provide practical recommendations for selecting fluids, calculating administration rates, and choosing administration routes in dogs and cats for the purposes of resuscitation, rehydration, and maintenance. The guidelines also cover fluid therapy recommendations for anesthetized patients, patients with common conditions, and those with disorders presenting special fluid therapy challenges. Additionally, the guidelines detail patient

monitoring parameters, highlight methods to prevent fluid overload, describe fluid delivery options, and address controversies and misconceptions in fluid therapy.

The following pages provide highlights from the new Fluid Therapy Guidelines and examples of how to use the guidelines in practice, including:

1. The Guidelines at a Glance
2. Fluid Therapy Treatment Algorithms
3. How to Use These Guidelines: Sasha's Case
4. 6 Tips for Cats from the Fluid Therapy Guidelines

For more information, refer to the guidelines at aaha.org/fluid-therapy. There you'll find a downloadable copy of the guidelines as well as resources, algorithms, tables, charts and frequently asked questions.

The 2024 AAHA Fluid Therapy Guidelines for Dogs and Cats are endorsed by the American Association of Feline Practitioners.



Guidelines at a Glance

Fluid therapy is a mainstay of veterinary practice, from prescribing subcutaneous fluids for the feline kidney disease patient, to supporting the dehydrated parvovirus-positive pup, to treating the Addisonian dog in crisis, to administering fluids during anesthesia. Determining which type of fluids to select, how much to administer, and for how long can be like navigating through choppy waters.

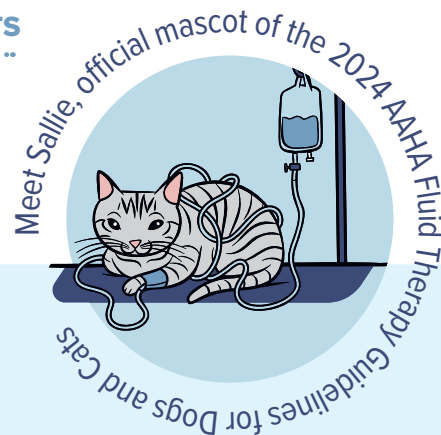
If you feel like you're drowning in fluid therapy questions, the AAHA Fluid Therapy Guidelines have answers. These guidelines not only provide a detailed refresher on the basic principles of fluid therapy, but they also guide the busy practitioner through a variety of common scenarios where fluids are used—from anesthesia, to resuscitation, to treatment of the sick patient.

There are a lot of options for fluid therapy, and the AAHA Fluid Therapy Guidelines can help you select the best one for each individual patient. But deciding on a therapeutic approach is only the first step. Ongoing monitoring is necessary to avoid complications and ensure desired therapeutic outcomes. This is where the rest of the team comes in, and skilled veterinary technicians are key to effective patient monitoring and the success of fluid therapy plans.



Guidelines

For answers to your challenging fluid therapy questions, check out the *2024 AAHA Fluid Therapy Guidelines for Dogs and Cats*, available now at aaha.org/fluid-therapy.



3/2/1

3 Takeaways



Compartmentalize your thinking! Each body fluid compartment—intracellular, interstitial, and intravascular—may require a different fluid prescription tailored to a patient's individual needs.



One fluid rate does not fit all! Using a blanket fluid rate (like "twice maintenance") for all patients, regardless of the condition, can lead to harmful side effects.



Don't overload! Fluid overload is a potentially life-threatening complication, and it's most commonly caused by excessive fluid administration. There's no guaranteed effective treatment, so preventing fluid overload saves lives.

2 Actions



Don't set it and leave it! Evaluate a patient's fluid balance at regular intervals. As the patient's clinical status progresses, adjust the fluid prescription based on ongoing needs, response to therapy, and the course of the disease.



Choose a fluid administration route based on the severity of the fluid deficit and the patient's ability to take fluids orally or via a feeding tube.

- Hypovolemia always requires intravenous or intraosseous fluid delivery.
- Dehydration can be corrected through intravenous, subcutaneous, or enteral fluid administration, or a combination of these routes.

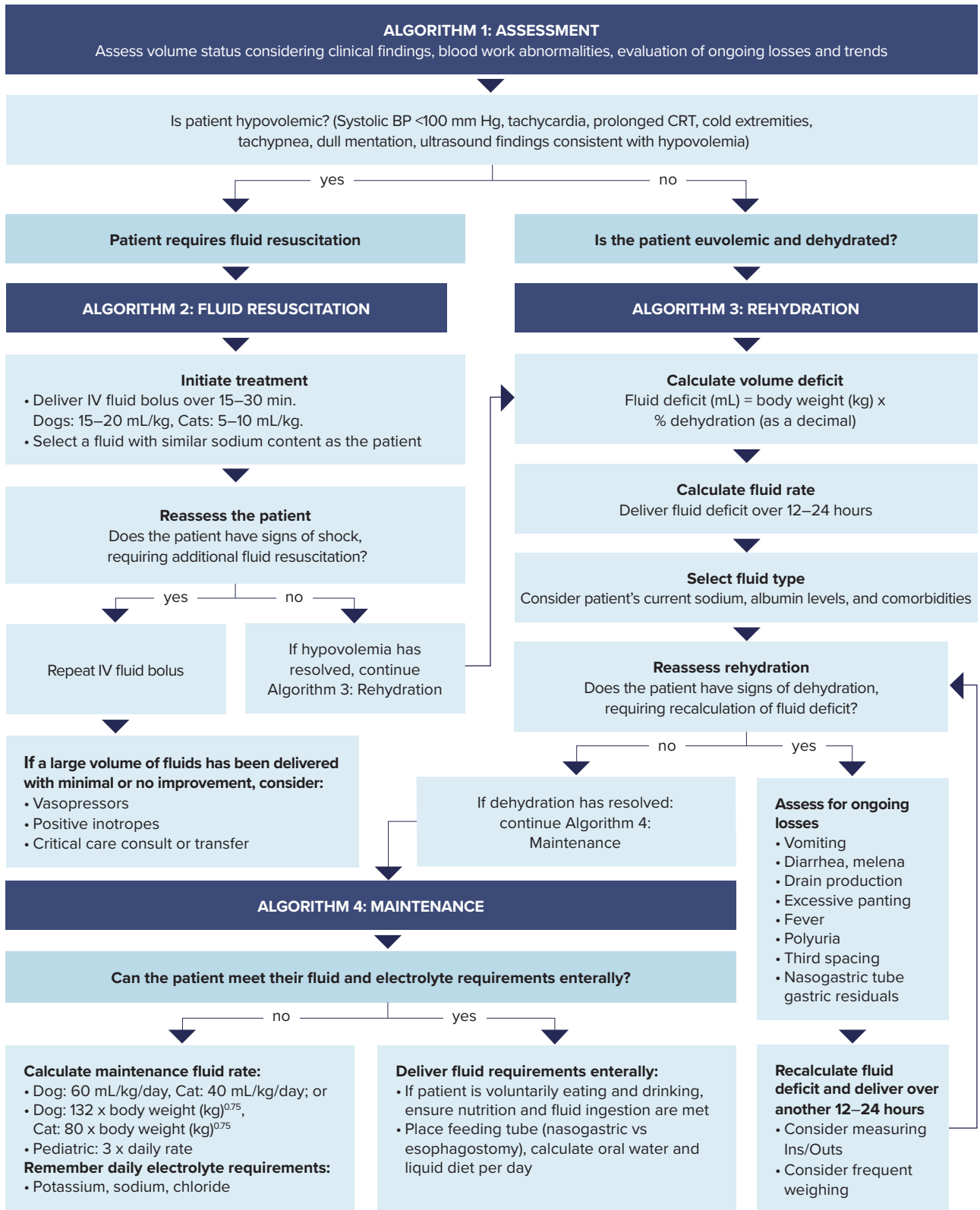
1 Thing to Never Forget



Fluids are drugs that are prescribed to patients, and like any medication, they must be used in a way that **achieves therapeutic goals** and **minimizes complications**.

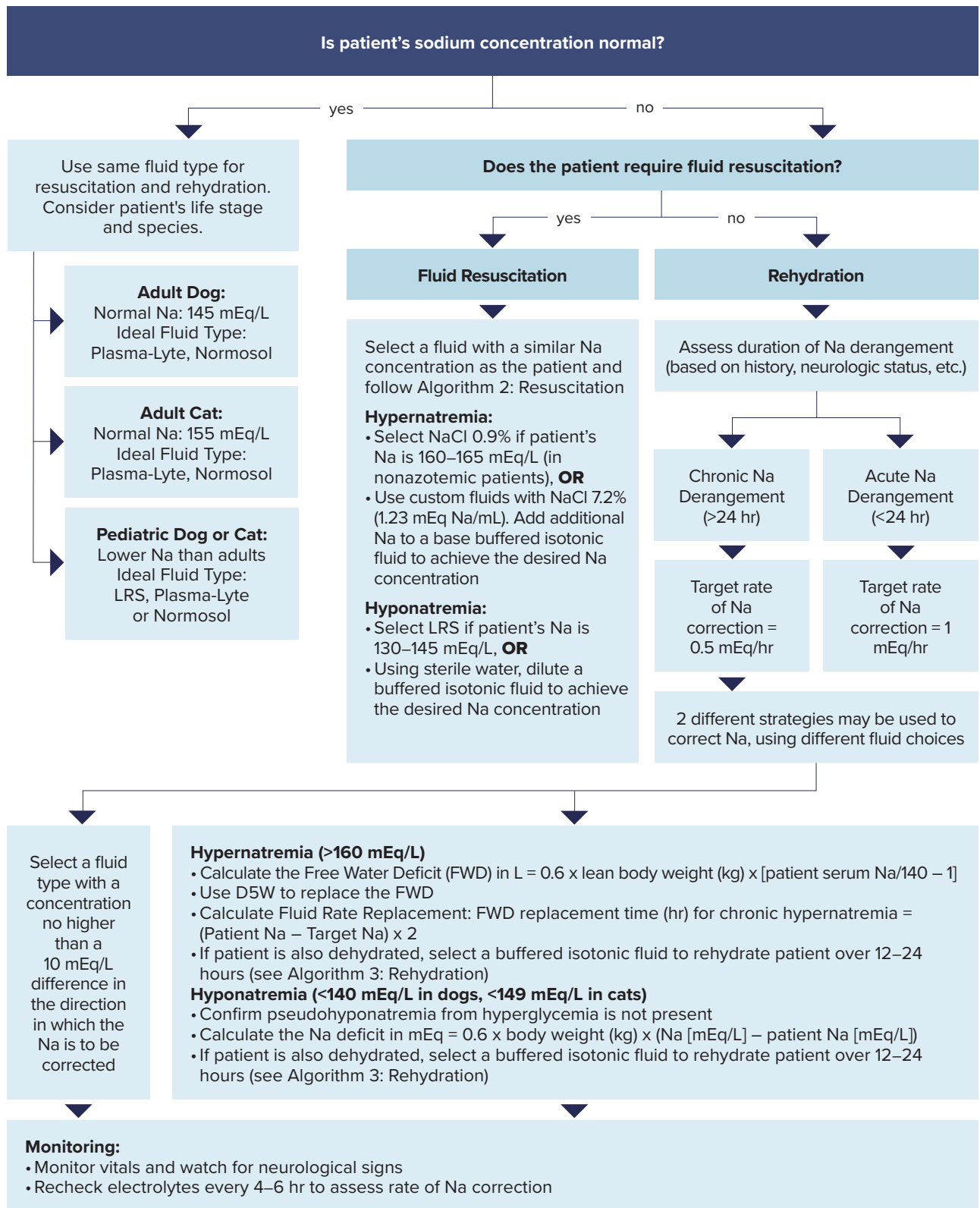
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Navigating Fluid Therapy in Dogs and Cats: A Step-by-Step Approach from the AAHA Fluid Therapy Guidelines



BP, blood pressure; CRT, capillary refill time

Adjusting IV Fluid Selection for Dogs and Cats Based on Sodium Concentration



D5W, dextrose 5% in water; FWD, Free Water Deficit; LRS, lactated Ringer's solution; Na, sodium; NaCl, sodium chloride

The Guidelines in Action

Case Study: Fluid Therapy for Gastrointestinal Disease

Adesola Odunayo, DVM, MS, DACVECC and Ewan Wolff, DVM, PhD, DACVIM (Small Animal Internal Medicine)

Sasha, a 5-month-old, mixed-breed dog weighing 10 kg was presented for evaluation of vomiting and diarrhea of three days duration.

Physical Examination Results:

- Abdominal pain
- Tachycardia, heart rate = 200 beats/minute
- Weak peripheral pulses
- CRT = 3 seconds (normal <2 seconds)
- Estimated 6% dehydration

Clinical Pathology Results (complete blood count and serum chemistry profile):

- Panleukopenia
- Hypoglycemia, blood glucose 60 mg/dL (normal = 68–104 mg/dL)
- ELISA test for parvovirus = positive
- Hypotension, systolic blood pressure = 70 mm Hg (normal = 90–140 mm Hg)
- Increased blood lactate = 4 mmol/L (normal <2.5 mmol/L)

What is Sasha's fluid therapy plan?

1. Treat hypovolemic shock

Sasha's clinical signs indicate shock or poor perfusion (tachycardia, weak peripheral pulses, prolonged CRT). Sasha's history of vomiting and diarrhea indicates a likely component of hypovolemia leading to shock, although vasodilatory shock may also be present. Shock is life-threatening, so address this first by rapidly expanding the intravascular space with fluids, also called fluid resuscitation.

Several options for fluid therapy are available, including isotonic crystalloids, hypertonic saline, natural or synthetic colloids,* or a combination of these. No conclusive evidence supports the superiority of one fluid type over another in the treatment of shock. In Sasha's case, isotonic crystalloids were chosen for her resuscitation.

The plan:

- 20 mL/kg bolus of Plasma-Lyte A administered IV over 15 minutes
- Abdominal pain treated with a pure mu opioid (methadone)

Reassessment:

- Heart rate = 170 beats/minute
- CRT = >2 seconds
- Systolic blood pressure = 85 mm Hg

Slight improvement noted but perfusion parameters have not normalized.

Repeat bolus:

- A second 20 mL/kg bolus of Plasma-Lyte A was administered over 15 minutes
- 0.5 mL/kg (5 mL) bolus of 50% dextrose, diluted 1:2 with 10 mL of saline administered intravenously through a peripheral catheter to address hypoglycemia

Reassessment:

- Heart rate = 110 beats/minute
- Femoral pulses = strong
- CRT = 2 seconds
- Systolic blood pressure = 110 mm Hg
- Blood lactate concentration = 2 mmol/L

Sasha's normalized perfusion parameters indicated improved oxygen delivery and resolution of shock. Sasha was monitored closely over the next 24 hours to ensure that her perfusion and volume status remained within normal ranges.

If Sasha had not responded to fluid therapy, vasopressors would have been indicated.

2. Correct dehydration

Once Sasha has been fluid resuscitated, a fluid therapy plan for rehydration (interstitial space deficit) was initiated. Administering arbitrary volumes (1.5 \times , 2 \times , 3 \times the maintenance rate) may result in ineffective therapy or overhydration, so the rehydration plan was based on the estimated percent dehydration identified by physical examination.

Calculate the fluid deficit:

Fluid deficit (L) = % dehydration \times weight in kg

Fluid deficit (L) = 0.06 \times 10 kg

Fluid deficit (L) = 0.6 L or 600 mL

Because Sasha had no contraindications for rapid treatment of dehydration (e.g., heart disease, low protein concentration, kidney disease), her fluid deficit was replaced over 12 hours, or 50 mL/hr IV for the next 12 hours with Plasma-Lyte A.

3. Provide maintenance water requirements

Sasha's daily maintenance water requirement was estimated to be about 100 mL/kg/day (or 42 mL/hr) and was met with isotonic crystalloids until Sasha started eating and drinking on her own. As a growing puppy, Sasha had a slightly higher maintenance water requirement.

Sasha's maintenance water requirement was added to the fluid deficit rate for a final rate of 92 mL/hr for the first 12 hr using Plasma-Lyte A. After 12 hr, the fluid rate may be reduced to 42 mL/hr or 100 mL/kg/day, if Sasha has no significant ongoing losses. Sasha's hydration status was assessed multiple times during hospitalization and her fluid rate was adjusted as needed.

Because large fluid volumes were needed to treat dehydration and provide maintenance, dextrose was supplemented in the Plasma-Lyte A as a 1.25% solution. Sasha's serum glucose concentration was closely monitored during hospitalization and the dextrose concentration adjusted based on response to therapy.

While Sasha's potassium was normal (3.9 mEq/L) on presentation, it was expected to decrease because of ongoing anorexia and the use of large volumes of potassium-poor fluids. KCl was supplemented at 0.05 mEq/kg/hr (0.5 mEq/hr). Based on a fluid rate of 92 mL/hr, this amounts to about 5.5 mEq/L of KCl added to the Plasma-Lyte A bag. The amount of KCl added to the fluids may be adjusted depending on changes in Sasha's serum potassium concentration, which was checked every 24–48 hr.

Fluids supplemented with KCl should never be administered as a bolus, so if Sasha requires a fluid bolus during hospitalization, the fluids must not contain a KCl supplement.

4. Treat ongoing losses

During Sasha's hospitalization, it was important to consider the possibility of substantial and continuous volume losses, such as from gastric residual volumes, diarrhea, or vomiting. The ongoing losses are either measured (gastric residual volumes) or estimated (vomiting, diarrhea) and then replaced using isotonic crystalloids.

Sasha had about 100 mL of fluid loss from vomiting. The Plasma-Lyte A administration rate was increased by 25 mL/hr for the next 4 hr. After 4 hr, Sasha was re-evaluated for additional ongoing losses, and the fluid rate adjusted as indicated.

Another consideration for Sasha is the potential need for colloid therapy (e.g., plasma, canine albumin, etc.) related to hypoalbuminemia. While this is not frequently needed in dogs with parvovirus, it should be considered when albumin concentration is below 2 g/dL, and the patient is not making significant clinical improvement. Additionally, colloid therapy should be considered in patients with signs of peripheral edema or hypotension in the presence of hypoalbuminemia.

5. Offer nutritional support

Nutrition is an important part of managing canine parvovirus. Place a nasogastric or nasoesophageal tube as early as possible during hospitalization and initialize nutrition therapy after serum electrolyte abnormalities and poor perfusion are treated. Liquid diets are largely composed of water, so the volume of diet provided through the tube should be considered as part of the patient's total fluid requirement.

6. Consider other treatment options as needed

Sasha may have been treated as an outpatient if she had no signs of shock. In that case, subcutaneous fluids (approximately 20 mL/kg) may have been administered, as well as other supportive therapy for canine parvovirus. The client may also be taught how to administer subcutaneous fluids at home or instructed regarding oral rehydration protocol for parvovirus.

** For a discussion of the risks associated with synthetic colloids, see the AAHA Fluid Therapy Guidelines for Dogs and Cats at aaha.org/fluid-therapy.*

Additional Reading

Mylonakis ME, Kalli I, Rallis TS. Canine parvoviral enteritis: an update on the clinical diagnosis, treatment, and prevention. *Vet Med (Auckl)*. 2016;7:91-100. Published 2016 Jul 11. doi:10.2147/VMRR.S80971

Pardo M, Spencer E, Odunayo A, et al. AAHA Fluid Therapy Guidelines for Dogs and Cats. *J Am Anim Hosp Assoc*. 2024;60():60:131-163. doi: 10.5326/JAAHA-MS-7444.



6 Tips for Cats

from the AAHA Fluid Therapy Guidelines

We all know that cats are not small dogs, and that holds true for fluid therapy as well. Here are some fluid therapy tips tailored for our feline companions from the *2024 AAHA Fluid Therapy Guidelines for Dogs and Cats*.



Fluid resuscitation rates in cats differ from dogs, and cats can be more vulnerable to fluid overload from resuscitation. Correct

hypovolemia in cats by administering a buffered isotonic fluid bolus of 5–10 mL/kg over 15–30 minutes and repeat if hemodynamic and perfusion parameters have not normalized.



Hypothermia is commonly seen in cats with shock and aggressive, high rates of fluid resuscitation in hypotensive, hypothermic cats can

lead to fluid overload. Administering 5 mL/kg IV fluid boluses along with active rewarming and rigorous reassessment is an essential part of fluid resuscitation in cats.



Always consider a patient's sodium concentration when administering fluid therapy and select fluids based on the patient's needs. Cats,

on average, have a higher blood sodium concentration (~155 mEq/L) than dogs (~145 mEq/L).



For a cat with normal renal and cardiac function, initiate fluids under anesthesia at a rate of 3–5 mL/kg/hr. Offer

food and water as soon as possible postanesthesia and watch for a rapid return to eating and drinking. For most patients, withholding water prior to anesthesia is not necessary.



Monitor cats closely for fluid overload when under anesthesia. Cats in particular may develop a gallop sound or new murmur

in addition to other signs: edematous tissues, chemosis, clear nasal discharge, pulmonary crackles, low oxygen saturation, pleural effusion, and ascites.



Balanced isotonic electrolyte solutions for resuscitation contain only a small amount of potassium (4–5 mEq/L). Several studies have concluded that

potassium-containing isotonic fluids are not detrimental for fluid resuscitation and rehydration in hyperkalemic cats with urethral obstruction. ■



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GET SMART / CAT TREES

Toward a Better Cat Tree

Considerations for the Eco-Conscious Cat Lover

BY CARA HOPKINS

One of the things you don't realize as a first-time cat owner is just how much your interior decorating is about to change.

Where once stood chairs and seating options for humans, now there is a cat cave, two cat trees, and three carpet-covered scratching posts in various states of destruction, looking like battered soldiers spitting up synthetic fibers alongside the crescent moons of shed claw sheaths.

I didn't give much thought to the product lifecycle when I bought

these things—I just knew my cats needed something to scratch and climb on. I found a very reasonably priced cat tree made of particle board covered in white carpeting, with rope of indeterminate origins on the posts.

Cut to a few years later, and that first cat tree has been relegated to the far corner, where it leans shakily to one side, developing bald spots where the graying carpet is wearing thin. I would love to get rid of it, but there's only one problem: I don't have the slightest clue how.

Can You Recycle a Cat Tree?

If future generations want to learn more about us, they need look no further than our trash.

Before the 1960s, much of our waste was incinerated or simply left out in the open. But the landfill system changed all that. Unlike the rotting days of yore, when biodegradable materials would break down through exposure to organisms in the air and soil, today's trash in the landfill is sucked dry of as much air and moisture as possible; then it's placed between heavy-duty

liners that attempt to block any leaching into the groundwater. Like vacuum-sealed time capsules, trash in today's landfills will likely not break down for hundreds, even thousands of years.

And if future generations ever do dig them up, they'll find a lot of carpet.

Every year in the US, we send about 4 billion pounds of carpet to the landfill, which makes up 1% by weight and 2% by volume of all our trash. While it can be recycled in some places, more than 70% of the 3.4 million tons of new carpet produced each year ends up at the dump, according to the EPA.

So, can you recycle carpet-covered cat furniture? Not bloody likely. And it turns out, breaking down the components of the carpeting,

adhesives, and backing might not be so healthy either, as it can release the potentially harmful stuff underneath.

Toxicity and Health Effects

"The biggest challenge that I have seen to creating nontoxic spaces for not just cats, but animals in general, including humans, is that the chemicals and materials that are in the products we bring into our homes or hospitals are largely unknown to people outside of the fields of material or building science," says Ryan

Wakat, Associate AIA, a designer at Animal Arts Design Studios in Boulder, Colorado.

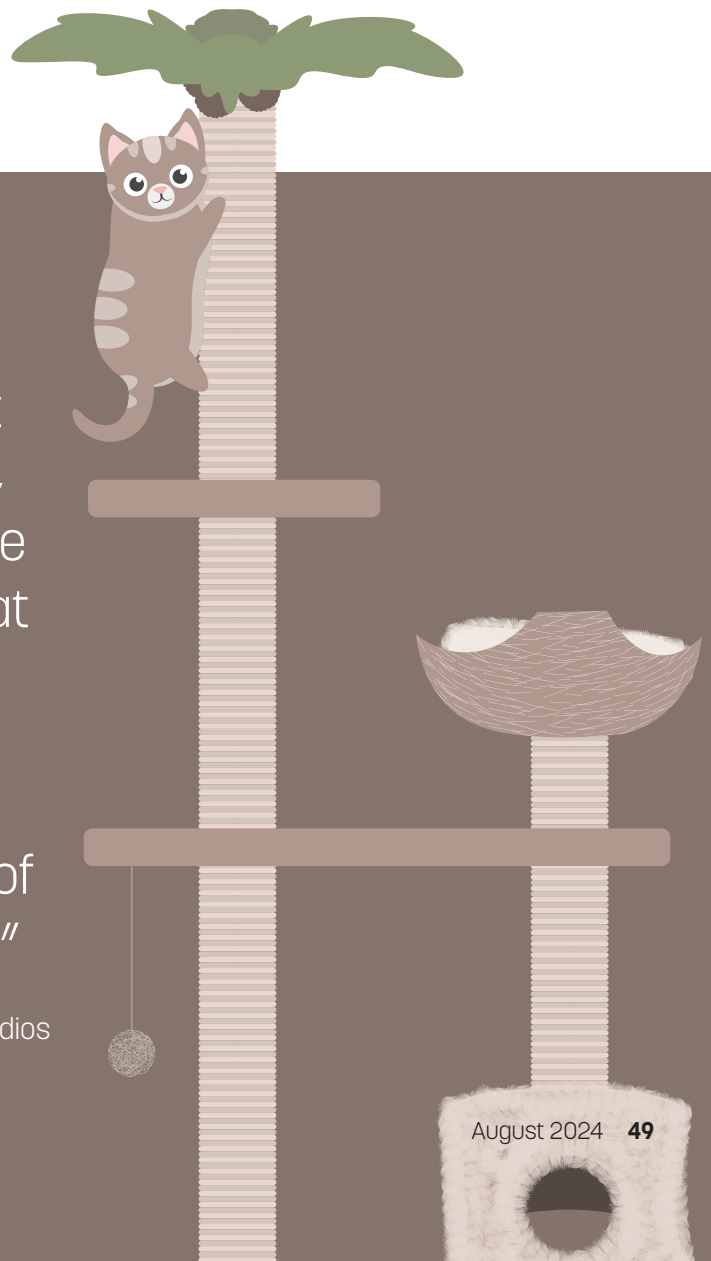
Animal Arts specializes in designing animal-friendly environments for veterinary clinics, daycare and boarding facilities, animal shelters, and assistance dog campuses.

He adds that, "consumers don't know where to look for the 'nutritional facts' of the products we put into buildings."

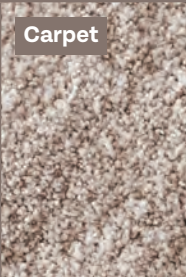


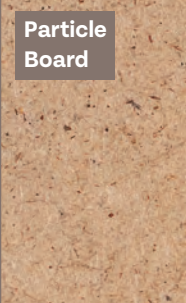


Much of what we know about the long-term health effects of indoor pollution comes from research into human health.

"The biggest challenge that I have seen to creating nontoxic spaces for not just cats, but animals in general, including humans, is that the chemicals and materials that are in the products we bring into our homes or hospitals are largely unknown to people outside of the fields of material or building science."

Ryan Wakat, Associate AIA, Animal Arts Design Studios



Elements of a Cat Tree

Material	Where It Comes From	Potential Toxicities	Recycling/Reuse
 <p>Carpet</p>	<p>Most carpet is made from synthetic fibers like nylon and polypropylene. Carpet backing is commonly made with a synthetic rubber derived from styrene and butadiene or polyvinyl chloride (PVC).</p>	<p>Synthetic carpet may contain toxic petroleum-based solvents and emit VOCs. Carpets are often treated with stain-resistant, antimicrobial, or moth-proofing chemicals, which can be harmful when inhaled or ingested.</p>	<p>Some communities offer carpet recycling. The Carpet America Recovery Effort has a locator at carpetrecovery.org.</p>
 <p>Nylon Rope</p>	<p>Synthetic rope is made from similar materials to nylon carpeting and carries the same risks.</p>	<p>Dyes, chemical treatments</p>	<p>Not recyclable.</p>
 <p>Wood</p>	<p>Various (Plywood, cedar, pine, bamboo)</p>	<p>VOCs from stains, adhesives, dyes, paint, chemical treatments</p>	<p>Untreated solid wood is reusable in many ways and can sometimes be recycled. Painted or stained wood is not recyclable.</p>
 <p>Particle Board</p>	<p>Particle board, fiberboard, and oxychloride are artificial wood made by damaging, dipping, and grinding wood shavings, wood wool, and timbering residue into wood pulp, mixing the pulp with glue, and then heat-pressing and drying the pulp.</p>	<p>VOCs from adhesives, dyes, paint, chemical treatments</p>	<p>Particle board is not recyclable and is harder than wood to reuse. Cutting or disturbing the material may also release toxins.</p>
 <p>Plastic</p>	<p>Plastics are produced from natural gas processing and crude oil refining. There are thousands of patented plastics such as polystyrene (PS), polyethylene (PE), polyethylene terephthalate (PET), polypropylene (PP), and polyvinyl chloride (PVC).</p>	<p>There are three ways plastics pose health risks:(1) Pollutants can attach to plastics and remain for a very long time; (2) chemicals added to plastics can leak out; and (3) plastic can carry and spread pathogens in the environment.</p>	<p>Plastic can be a good choice for long-term durability and sanitation. Recycled plastic products are better than new in terms of sustainability, but the process of recycling itself uses energy and has an environmental impact.</p>
 <p>Sisal Rope</p>	<p>Sisal fibers come from the Agave sisalana plant, which is native to Mexico.</p>	<p>“Sisal is a renewable resource par excellence and can form part of the overall solution to climate change,” according to the United Nations. “Measured over its life-cycle, sisal absorbs more carbon dioxide than it produces.”</p>	<p>At the end of its life cycle, sisal is 100% biodegradable.</p>

pattonmania, MDV Edwards, Lalu HidayatUjannatha, jessicahyde, Liudmila Chermetska, szakalkus/Stock via Getty Images Plus

For example, it is known that plywood, particle board, carpets and carpet pads, paints, finishes, and adhesives are among the household components (also present in many cat trees) that emit chemical volatile organic compounds (VOCs).

Human health effects from VOCs can include rashes,

headaches, eye irritation, chronic cough and sinus infections, joint and muscle pain, memory loss, irritability, fatigue, anxiety, depression, and allergies.

(It should be noted that natural materials like untreated wood emit VOCs too—so it’s not a matter of avoiding them altogether, but considering their source.)

And since my kitties aren’t only walking on the carpet, but clawing into the innards of the scratching post’s very soul to reveal the fibers, adhesives, and core elements underneath, isn’t it logical to assume that the outgassing of VOCs pose health risks for them too?

As with many products, consumers need to ask the right questions.

“A good rule of thumb is, if the material in question is safe for humans, it is likely safe for our furry friends,” Wakat says. “The biggest thing we can do, as consumers, is to demand transparency from product manufacturers with respect to the materials used in the products we buy.”

Designing Cat Furniture that Lasts

In 2005, Grant Smith was living in Atlanta and reflecting on the joy he’d experienced over 18 years with his two rescue cats, Crystal and Josephine, when he was inspired to launch CRIJO Pet Products (Cri for Crystal, Jo for Josephine).

Following the advice of his veterinarian, Smith began designing wood and sisal cat furniture. He became interested in the specific needs of animal

“The biggest thing we can do, as consumers, is to demand transparency from product manufacturers with respect to the materials used in the products we buy.”

Ryan Wakat, Associate AIA, Animal Arts Design Studios



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shelters. After listening to a talk on shelter medicine at a conference, Smith determined that two of the biggest needs were cat structures that were deconstructable (able to be disassembled, rearranged, and upgraded with new parts), and that were easily disinfected.

For the shelter products, he settled on high-density polyethylene because it's composed of 80% or more recycled material—and most importantly, it's easy to clean and sanitize.

"Many of the materials used in traditional cat products, such as dyes, synthetic materials, and even cardboard, can be unhealthy when ingested," Smith says. "Some products don't accomplish the intended purpose—meaning they're ineffective at shedding claw sheaths—and they could be harboring bacteria that is permanently attached to the product itself."

The risk of infection is also a concern in veterinary practices.

"When a veterinary hospital has a patient who is sick, an assessment needs to be done to determine whether the animal is infectious. If so, the hospital should discard any porous or absorptive materials, like carpeting or sisal on cat trees that the cat came into contact with, because the virus or infection could be living in the material," Wakat says.

And if the practice's cat furniture isn't easily cleaned or subbed-out with new components, it's likely "the entire cat tree will be put into the dumpster to avoid infecting other animals," he adds. "However, when we have cat spaces made with metal or other nonporous cat furnishings, they can simply be cleaned and disinfected."

When it comes to maintenance and upkeep at home, he says, don't be afraid to DIY.

"See if you can remove and replace worn-out parts, like the sisal, yourself. Try using mechanical fasteners like staples instead of glues to hold down the material."

Although, as someone who has built cat structures for two decades, Smith warns that if you do use staples, they need to be "unexposed" due to the potential damage and harm they can do to a cat's claws—and that safely covering the staples can be tricky.

Whether you attempt to DIY or not, Wakat encourages cat owners to look for manufacturers who sell replacement parts.

"The key here is to remember that recycling is the last step, with reduce and reuse being the first two, respectively," he says.

He suggests consumers ask: "Does it need to be thrown away? Does the manufacturer make replacement parts? Can it be disassembled and sorted into the sum of its parts so that it can be reused or recycled in some way? What about simply removing and replacing the porous materials so that the whole structure doesn't need to go to the landfill entirely?"

CRIJO, for example, pioneered the use of detachable sisal pads on its cat furniture to make spot-cleaning and replacement easier. Smith calls this a "difference-maker" in the industry.

What Do Cats Want?

Of course, the point of all these scratchers and towers is to keep cats happy and healthy—and to mimic the outdoors in a way that satisfies their instinctual urges and biological needs.

The American Association of Feline Practitioners (AAFP) says the ideal scratching surface "may be as individual as the cat" and recommends that clients "provide multiple options ... including sisal rope, natural bark or wood, corrugated cardboard and carpet/rough fabric."

While a recent study found that kittens and cats up to nine years old prefer sisal for scratching, older cats are more preferential to carpet. However, "use of scratching posts and sisal rope as the preferred substrate increased with a higher number of posts within the home."

So, even if my cats have a hankering for carpet later in life, the presence of enough sisal scratching surfaces in a variety of orientations and arrangements may help them adjust to a more sustainable choice.

Sustainable Cat Furniture of the Future

Many sustainability efforts at local and state levels are based on the idea of a "circular economy" which means that products are designed with the end in mind—whether that end is decomposition or reuse/repurposing.

A lot of the stuff that goes into typical cat trees is notoriously difficult to source and/or dispose of sustainably—but there are companies who are trying.

Mau Pets uses natural branches sourced only from trees no longer bearing fruit and they've committed to a goal of attaining 100% sustainable packaging for all their products by the end of 2025. The company also plants a tree for every purchase; they donate 5% of all proceeds to animal welfare and environmental conservation; and they cover 50% of the cost for products donated to animal shelters.

For furniture in general, Wakat recommends looking for the Declare Label, which is put out by the International Living Future Institute—although he cautions it may be hard to find.

On the other end of the product lifecycle, efforts are being made to increase the reusability of hard-to-recycle materials like carpet. Legislation in California has led to the country's largest carpet diversion program to date, with more than 100 carpet collection sites that have been set up by The Carpet America Recovery Effort (CARE).

"Many of the materials used in traditional cat products, such as dyes, synthetic materials, and even cardboard, can be unhealthy when ingested."

Grant Smith, CRIJO Pet Products

Interestingly, that carpet we're throwing away might still have some usefulness. Research suggests it holds potential in its raw materials that might be resurrected and redirected toward new supply chains. (So future generations may be digging up those landfills sooner than we think).

In the meantime, buying recycled rather than new helps. A recent study in the *Journal of Cleaner Production* found that “replacing virgin materials with recycled carpet products could offset up to 7.5 Mt of greenhouse gas emissions, 2 kt of particulate matter (under 2.5 μm) equivalent in respiratory effects, and 15 TJ of fossil fuel depletion from virgin material production.”

But even if I know that my cat tree's manufacturer is using recycled carpet, or that I could potentially recycle it later (if I move to California), I'd rather spend a little time, and yeah, maybe a little more money, next time.

The End of a Cat Tree's Life

In the end, I looked up several shelters and the Humane Society, but I couldn't find anyone who'd take my old cat tree.

So I am left with two options. One, I can break it down for the parts and try to upcycle and/or donate the materials. Or, I can attempt another tried-and-true reuse approach: Put it out on the curb with a sign that says FREE and hope someone takes it away.

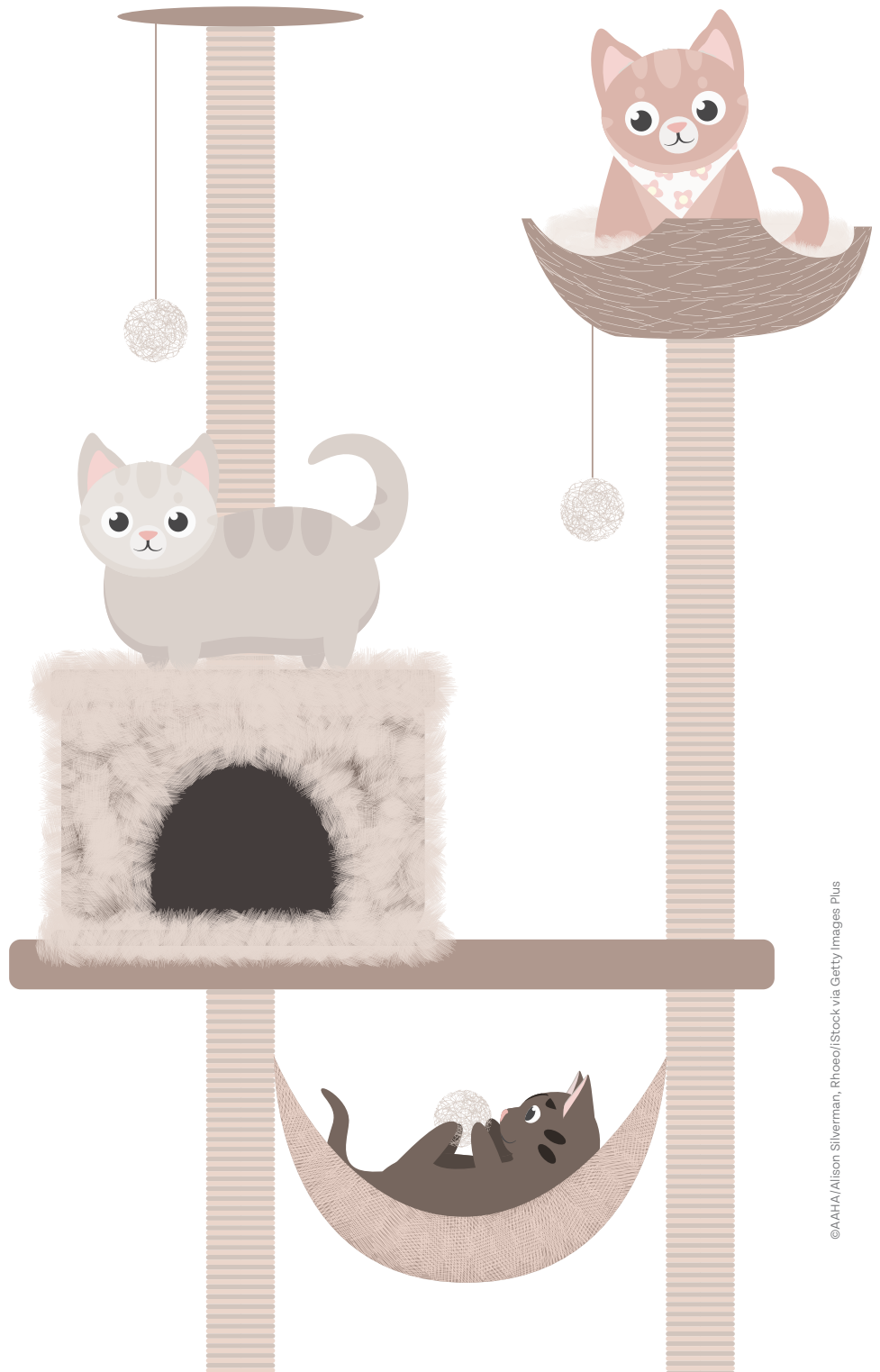
One thing's for sure: I'll never buy another carpet-covered anything.

I've learned in these past few years that there is no “cat furniture” and “human furniture.” There is only our furniture in our shared space. Moving forward, I will try to envision the end of a

cat tree or scratcher's life before bringing it home.

And I hope that when those future generations are sifting through the ruins of our times, they will find sturdy, beautifully made things that show we loved our cats well.

Or, even better, if we make advances in the way we design, source, and consider the circular economy of cat trees and scratchers, maybe future generations won't find anything at all—no footprints, or paw prints, when we go. ■



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PODCAST / **PETER WEINSTEIN**

Crafting Delightful Experiences in Veterinary Medicine

A Conversation with Peter Weinstein, DVM, MBA

INTERVIEW BY KATIE BERLIN, DVM

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Driven by his extensive experience within the business of veterinary medicine and his commitment to bringing positive change to the profession, Peter Weinstein, DVM, MBA, shares insights into the importance of personalized experiences in veterinary practice.

From customized education to creating delightful moments for clients, the conversation delves into the changing landscape of our profession. Discover how the veterinary profession can learn from hospitality principles and navigate the changing dynamics of client expectations. Weinstein—owner of PAW Consulting, an author, and a podcaster—also reflects on his journey, from building and selling his own practice to teaching the next generation of veterinarians.

Katie Berlin: Peter, would you mind just giving everyone a little bit of bio on yourself, who you are, and what it is you're really excited about right now?

Peter Weinstein: I started my own hospital three years out of school, but realized how little I knew about running a business. I went back to school at night while running my practice to get a business degree, which was extremely eye-opening. It gave me new ideas on how to run my business so we were able to build it, expand it, move it, expand it, and ultimately I sold it to a consolidator so I could do other things within the profession and be a greater influencer from that standpoint.

I've had a passion for organized veterinary medicine. I was the executive director for the Southern California VMA for 14 years. I've been very involved with setting the tone, setting the leadership,

“Your local, state, and national associations have a very important role in helping you, as a veterinarian, direct your future from a public relations standpoint and from an advocacy standpoint. They're really there to be your cheerleader.”

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and being an advocate for the veterinary profession. I left organized veterinary medicine to see to what I wanted to do for the last third of my professional life. And I focused on education and teaching.

One of the things I do now is teach veterinary students at Western University College of Veterinary Medicine in Pomona third-year business and finance. I come to conferences like AAHA Con with no business to promote except the business of veterinary medicine and a mantra that says we need to bring fun back into the veterinary profession. I do a lot of this because I have two children, both are millennials. One is doing marvelously in Austin, Texas, selling software. The other is a June 2023 graduate from Oregon State University (go Beavers) and is a doctor of veterinary medicine practicing in her first job in Cairns, Australia.

KB: There's a lot there. You just won an award, too, didn't you, from the SCVMA?

PW: I won the State Award for Lifetime Achievement from the California VMA, which to me was a real honor, and it probably reflects the fact that I'm old.

KB: Old is relative. But not everyone, as they get more experienced, wins a Lifetime Achievement Award.

PW: I appreciate it. And I appreciate the honor from CVMA for the commitment and the time that I've given to organize veterinary medicine. And for anybody who's listening to this that has not gotten involved, your local, state, and national associations have a very important role in helping you, as a veterinarian, direct your future from a public relations standpoint and from an advocacy standpoint. They're really there to be your cheerleader. Think about organized veterinary medicine and how you can get involved to help set the tone and the direction for the veterinary profession going forward. That was a paid political announcement.



KB: Actually, it's one that's echoed by a lot of guests on this podcast, who are from a pretty diverse body of professionals. Yet many of them have that same refrain, which is: get involved, find out ways that you can get involved, and contribute a voice that isn't being heard. I think that's a really good message. You also have a podcast, Peter and Phil's Courageous Conversations, and you've been doing that for a couple of years now?

PW: We've been recording for over three years, and we've got about just over two years' worth of content that's online. You can find it at Spotify, Apple, or any place that you listen to your podcast. Or you can go to our website at www.peterandphil.com. Dr. Philip Nelson and I talk about social issues. We talk about the veterinary profession. We talk about sports. We talk about music. We get on

every couple of weeks or weekly for three hours and just sit there and shoot the stuff.

KB: I really like that you bring both veterinary medicine and real life into it. You can bring all the things that matter to you outside of vet med into your career in veterinary medicine. It's okay to be a person outside of the clinic and to want to know about stuff that isn't vet med.

PW: We started the podcast with no intentions of anything more than just having conversations. We envisioned the conversation two neighbors would have over a hedgerow or sitting on the front porch in a rocking chair, just talking about the issues that were there. With maybe some different thoughts and opinions, but the willingness to speak with one another and respect the different perspectives that people have.

KB: Hard agree. We're hearing other perspectives and responding calmly to those perspectives and being able to agree to disagree and see things from different angles; but where's the line between that and "I want to burn this down because I don't believe in anything it stands for?"

PW: That's the tough thing. In practice we deal with that with social media posts, with Yelp reviews and everything else. And sometimes we don't understand the perspective of the other person who's presenting, and we don't necessarily agree with the perspective that's being presented. But I think if that person is listening to our perspective as well, maybe we come a little bit closer, because I really do think that this chasm between people has gotten Grand Canyon-esque. I really would like it to get back to the size of a crack between two pieces of cement.

Change starts at the grassroots level. It starts with one person, having a message. And then finding a second person, and four people. And it's much easier sometimes because of social media, because of how connected we are, although we're currently connected and also disconnected, interestingly enough.

KB: I love what you said about being connected and disconnected and how now it's so much easier to find other people who can believe what you believe and want to support the cause you're championing. I also hear people say that in-person conferences are changing, that sponsors are finding that their return on investment isn't as good when they go to conferences, especially if it's not

one of the big ones.

At the same time, the people that show up to in-person conferences are engaged and are looking for that real-life connection. You can make virtual connections all day long, but there's nothing like being in the same room with people and feeling that energy altogether.

PW: I would agree with you that there are people who felt that they were in solitary confinement during the pandemic. And now, the energy, the enthusiasm of those people who are coming to conferences plus the attendance numbers reflect a group of individuals who are really looking to re-engage.

KB: Debbie Boone wrote a book called *Hospitality in Healthcare*, and she talks a lot about meeting people where they are and not viewing hospitality as one-size-fits-all. She talks about what you can do to make a person's day a little better, because if they're not treating you great, it's probably not personal.

I'm thinking about what you're saying now. Who needs to be in that group and feel that engagement and feel supported by a community? And who would rather sit at home and get their CE with their kids playing in the same room? We all need different things to feel fulfilled and happy in this career. That ultimately has to be the key to retaining people, keeping them in the field and making them feel supported. Do you agree?

PW: Veterinary medicine is not a health care profession. We are a service industry that provides health care. And as a service

industry, it means our clients are looking for an experience. And they're looking for a customized experience. They're looking for an experience that is built around them and their pets. And that means we can no longer be transactional. We have to be relational. We have to relate to people. We have to relate to their pets. We have to know their name. We have to know their pet's names. We've got to freaking know their pet's gender because there's nothing worse than getting sex wrong.

Let's say you're a client in a veterinary hospital and you come in and you're the only one in the lobby except the receptionist, the greeter. And they say we'll be with you in a few minutes. And a few minutes becomes 10 and 15 and 20.

KB: You're sitting in a waiting room.

PW: You're sitting in a waiting room, which is such a bad term. Why do we call it a waiting room?

Because we define it as the fact that you're going to have to sit on your butt and wait.

KB: Right. Or you're in your car, which is also not fun.

PW: No, no. I think more Tesla chargers were installed in veterinary practice during COVID because of that four-to-eight hour wait. Well, there is no reason that a client service person in a veterinary hospital can't turn and say, Hey Katie, Dr. Weinstein's dealing with an emergency. We know you've been here for 15 minutes. Here are your choices to make it more convenient. You can drop off Bluto and we'll take care of things and you can pick them up a little bit later. You can reschedule and come back at another time, and we will give you a 50% discount on your next visit.

What we're trying to do for you is make your experience go from negative, to, "Oh, that's so sweet of you. Why don't I just drop off Bluto? I've got to go do some shopping." We too often create more problems

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by being afraid to go tell Katie why they're waiting. And all Katie does is start to get daggerized.

KB: That's a great point. You say you should take yourself off the floor sometimes, watch the processes in your practice, and take some time away from being a doctor or manager and actually just sit down and think about, what do we need to make better? How can we do that?

PW: As a business owner and actually as a manager, when you are so deeply embedded in the day-to-day operations of your practice, you rarely know what it looks like in your waiting rooms or reception area. You come in the back door, you go out the back door. You avoid the front because you don't want to get hogtied by a client who wants to say, "Hey doc, how you doing?"

Working on your business means stopping the technical work that we do every day in our businesses and thinking about how close our business is to the dream that we had when we opened it. That also assumes that you actually had a vision or a dream and you didn't just open a business to make hamburgers and you're making hamburgers, but you have no clue what the hamburgers taste like.

KB: I sometimes think about that when it comes to culture, just any place that I work, because it is so easy to get caught up in the little stuff every day and not think about that. These are really good messages.

What does "leveling up" look to Peter Weinstein?



PW: Leveling up to me is like being in an elevator and you go from floor to floor to floor, ultimately reaching the top level. Each person as an individual should be looking to grow 1% per day, just a little bit, just a small growth in some fashion. The difference between water at 211 degrees and water at 212 degrees, is the difference between water and steam.

All I'm suggesting, to level up individually or in a business or in a career, is to look to make constant improvement every day, to aspire to a new level every day. So whether it is that 16-year-old who wants to be a veterinarian, or the associate who decides they want to become an owner, or the customer service person who goes back and gets some courses in business and wants to become a practice manager or a CVPM, I think it's the role, the responsibility of every business owner to help their team level up each day, every day, all the time.

Otherwise, you are providing people with a job and not a career, and I think that's one of the biggest problems we have in this profession. It's not that we need more people. We need to do a better job of keeping the people

that we have by giving them opportunities to grow, contribute, get better, give them the respect that they deserve, give them more responsibility, and give them recognition for all of the things that they have done to make your business successful.

Because ladies and gentlemen, we don't do it by ourselves. This is a team. It's the only way we can do veterinary medicine.

KB: That's a mic drop right there. That's true no matter what that role is. If a kennel assistant wants to stay a kennel assistant, there's nothing wrong with that. It doesn't mean they can't grow within that job and assume more responsibility and learn more skills.

Okay. Last question, do you have a team or individual credentialed technicians that you'd like to shout out while we're here?

PW: I'd like to shout out to every credentialed technician. Veterinary medicine is a team sport. We are like the rowboat with eight people in it. One's the doctor or the manager at the front, who's the coxswain that says stroke, but in between are a whole bunch of team people. One or more

“Veterinary medicine is a team sport. We are like the rowboat with eight people in it. One’s the doctor or the manager at the front, who’s the coxswain that says stroke, but in between are a whole bunch of team people. One or more is a credentialed technician.”

Peter Weinstein, DVM, MBA

is a credentialed technician. If we truly want to move this profession forward, it can’t be via a doctor-centric business model. It needs to be a team-based business model whereby we utilize our credential techs to the top of their job descriptions, whatever it is in your state.

We respect them for the fact that they have become credentialed; we don’t give noncredentialed people the same responsibilities. I would suggest you give them the same respect because they have tremendous amount of skills from that standpoint, but we have to start giving our credentialed technicians the opportunity to grow and contribute and generate income.

We don’t even track how much income our credential technicians are generating for us. If you go to the dentist, there’s a line item for the hygienist and the work that they do. So honestly, we need to start to give greater respect to our credentialed technicians by letting them do what they can do. You need to make sure that you have identified their skill sets and that you trust them to perform up to the level that they have been trained.

Then recognize them through line items, through identifying them to your clients by saying, “hey, this is Patty. She’s my credentialed technician. She’s my right-hand person. She’ll be your point person going forward.”

If we could use our credentialed technicians or assistants, depending upon the skill sets and the state boards and what they can or cannot do, to do the work, our doctors can have more time to do the three things or four things depending on your state, that they must do by law. Diagnose, prescribe, and do surgery. Everything beyond that can be done by a credentialed tech.

Bottom line, we need to have a greater understanding of how to integrate our credentialed technicians into the client experience. Then clients can trust everybody on the team, and that it is not all based upon the doctor, but it’s based upon everybody on that boat all rowing together with the common goal of providing a world-class individualized client experience and patient experience.

KB: You just keep dropping the mic, so I think I’m just going to

leave it there. That was exactly, exactly what I was hoping you’d say, because I think there are a lot of people that still need to hear it. We hear it a lot, and we need to hear it from all corners. And I really appreciate that you’re a champion for that team-based approach, because I tell you what, once you work with credential techs who know their job, are allowed to do their job—they run that clinic like a ship, then you can’t go back, and you realize there’s no reason to ever, ever, ever go back.

PW: Absolutely. Big high five on that. ■

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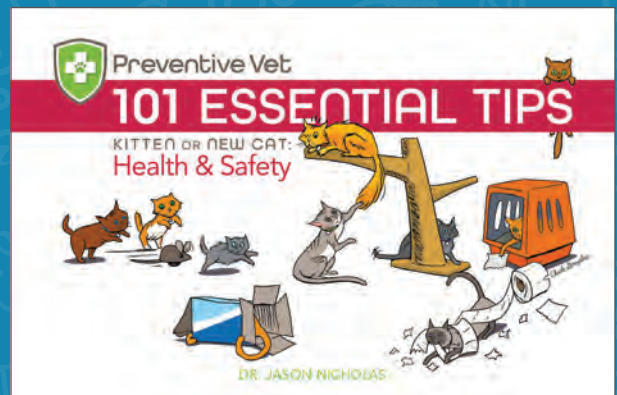
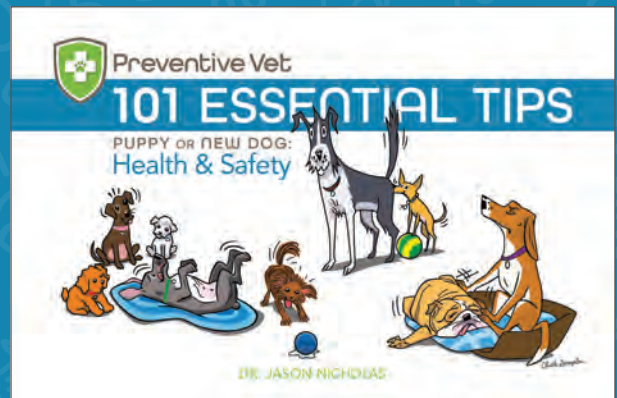
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Making a Difference in a Patient's Comfort

Keeping cats (and all pets) pain-free is a team effort. This page from the 2022 AAHA Pain Management Guidelines for Dogs and Cats toolkit shows ways to identify pain, and a sample workflow for getting pain management resources to a senior cat. Learn more at aaha.org/resources/2022-aaha-pain-management-guidelines-for-dogs-and-cats.



5 Scenarios Where You Can Make a Difference

- 1 When the pet owner mentions concerns about specific behaviors, but doesn't recognize their possible correlation to pain.
- 2 When you notice a hospitalized or boarded patient displaying signs or symptoms of pain.
- 3 Following up with a patient who starts a pain treatment plan at home.
- 4 Ensuring educational resources are available in the hospital for both clients and staff.
- 5 Working to help ALL team members to:
 - recognize the signs of pain.
 - know how and what info to convey to the owner.
 - make sure pain concerns are included in the patient's record for veterinarians to address.

Workflow Idea

CASE EXAMPLE
Chronic Pain in a Senior Cat
It takes a village to keep pets pain-free

Pet owner calls and reports older cat has not been using the litterbox appropriately.

Client care representative recommends owner take a video of the cat getting in and out of the litterbox if possible (or walking, jumping, etc. at home), schedules an appointment, and makes note of conversation in medical record.

Technician takes a detailed history from the owner during visit, watches the cat explore the exam room, and takes note of any observations made.

Veterinarian completes initial physical exam, diagnostics, and institutes treatment plan.

Technician follows up with owner.

This reference page is part of the AAHA Pain Management Guidelines Toolkit, which was made possible with support from Zoetis.

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