

WORKPLACE SAFETY | INTEGRATIVE MEDICINE | NUTRITION GUIDELINES



AUGUST 2021
trends.aaha.org

Trends magazine

Sniffing Out Coronavirus

Working Dogs Detect Covid **24**



The Price of Construction
Materials Costs Hit Record Levels **32**

AmerisourceBergen

MWI Animal Health®

Rest easy, MWI is here for you.

Do you want your pet parents to be more compliant?

We have a set of offerings that include compelling and automated marketing communications and customized preventive care plans to drive appointment setting to help increase compliance, retain clients and grow revenue.

Connect with us today to learn more about our compliance solutions.

**Contact your MWI sales
representative or learn more
about our compliance solutions
at www.mwiah.com/compliance**





FOOD + ENVIRONMENTAL ALLERGIES



LET'S MAKE ITCHING ANCIENT HISTORY

Hill's Prescription Diet Derm Complete is our masterpiece. The only clinically tested nutrition for **both food and environmental allergies** (among leading brands in North America).

As part of a multimodal treatment, Derm Complete is shown in clinical studies to:

- 1 Manage itching in dogs with food and/or environmental allergies
- 2 Reduce licking, scratching, head shaking and skin redness in dogs with environmental allergies

Ask your Hill's rep about allergy care that's
A STEP AHEAD FOR THEIR BEST LIFE

©2021 Hill's Pet Nutrition, Inc.

Brief Summary: Before using NexGard® (afoxolaner) Chewables, please consult the product insert, a summary of which follows.

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Description: NexGard is a soft chewable for oral administration to dogs and puppies according to their weight. Each chewable is formulated to provide a minimum afoxolaner dosage of 1.14 mg/lb (2.5 mg/kg).

Indications: NexGard kills adult fleas and is indicated for the treatment and prevention of flea infestations (*Ctenocephalides felis*), and the treatment and control of *Ixodes scapularis*, *Dermacentor variabilis*, *Amblyomma americanum*, and *Rhipicephalus sanguineus* infestations in dogs and puppies 8 weeks of age and older, weighing 4 pounds of body weight or greater, for one month. NexGard is indicated for the prevention of *Borrelia burgdorferi* infections as a direct result of killing *Ixodes scapularis* vector ticks.

Dosage and Administration: NexGard is given orally once a month, at the minimum dosage of 1.14 mg/lb (2.5 mg/kg). See full product insert for dosing table and details.

Warnings: Not for use in humans. Keep this and all drugs out of the reach of children. In case of accidental ingestion, contact a physician immediately. Keep NexGard in a secure location out of reach of dogs, cats, and other animals to prevent accidental ingestion or overdose.

Precautions: Afoxolaner is a member of the isoxazoline class. This class has been associated with neurologic adverse reactions including tremors, ataxia, and seizures. Seizures have been reported in dogs receiving isoxazoline class drugs, even in dogs without a history of seizures. Use with caution in dogs with a history of seizures or neurologic disorders.

The safe use of NexGard in breeding, pregnant or lactating dogs has not been evaluated.

Adverse Reactions: In a well-controlled US field study, which included a total of 333 households and 615 treated dogs (415 administered afoxolaner, 200 administered active control), no serious adverse reactions were observed with NexGard.

Over the 90-day study period, all observations of potential adverse reactions were recorded. The most frequent reactions reported at an incidence of > 1% within any of the three months of observations are presented in the following table.

Table 1: Dogs with Adverse Reactions.

	Treatment Group			
	Afoxolaner		Oral active control	
	N ¹	% (n=415)	N ²	% (n=200)
Vomiting (with and without blood)	17	4.1	25	12.5
Dry/Flaky Skin	13	3.1	2	1.0
Diarrhea (with and without blood)	13	3.1	7	3.5
Lethargy	7	1.7	4	2.0
Anorexia	5	1.2	9	4.5

¹ Number of dogs in the afoxolaner treatment group with the identified abnormality.

² Number of dogs in the control group with the identified abnormality.

In the US field study, one dog with a history of seizures experienced a seizure on the same day after receiving the first dose and on the same day after receiving the second dose of NexGard. This dog experienced a third seizure one week after receiving the third dose. The dog remained enrolled and completed the study. Another dog with a history of seizures had a seizure 19 days after the third dose of NexGard. The dog remained enrolled and completed the study. A third dog with a history of seizures received NexGard and experienced no seizures throughout the study.

Post-Approval Experience (July 2018): The following adverse events are based on post-approval adverse drug experience reporting. Not all adverse events are reported to FDA/CVM. It is not always possible to reliably estimate the adverse event frequency or establish a causal relationship to product exposure using these data.

The following adverse events reported for dogs are listed in decreasing order of reporting frequency for NexGard: Vomiting, pruritus, lethargy, diarrhea (with and without blood), anorexia, seizure, hyperactivity/restlessness, panting, erythema, ataxia, dermatitis (including rash, papules), allergic reactions (including hives, swelling), and tremors.

Effectiveness: See full product insert for details regarding Effectiveness.

Animal Safety: In a margin of safety study, NexGard was administered orally to 8 to 9-week-old Beagle puppies at 1, 3, and 5 times the maximum exposure dose for a total of six treatments. There were no clinically-relevant effects related to treatment on physical examination, body weight, food consumption, clinical pathology (hematology, clinical chemistries, or coagulation tests), gross pathology, histopathology or organ weights. Vomiting occurred throughout the study, with a similar incidence in the treated and control groups, including one dog in the 5x group that vomited four hours after treatment.

In a well-controlled field study, no adverse reactions were observed from the concomitant use of NexGard with other medications.

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

The information provided here is not comprehensive. The full FDA-approved product insert is available at www.nexgardfordogs.com. Consult your veterinarian for further information.

Product approved by FDA under NADA # 141-406

Marketed by: Frontline Vet Labs™, a Division of Boehringer Ingelheim Animal Health USA Inc. Duluth, GA 30096

NexGard® is a registered trademark and FRONTLINE VET LABS™ is a trademark of the Boehringer Ingelheim Group.

©2020 Boehringer Ingelheim Animal Health USA Inc.

All rights reserved.

Reference package insert: 1050-4493-09 Rev. 11/2019

Brief summary preparation date: 08/2020

US-PET-0735-2020

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

Editorial

Editor Ben Williams

Managing Editor Karie Simpson

Senior Graphic Designer Robin Taylor

Graphic Designer Alison McKearn

Advertising

National Sales Manager Stephanie Pates

Advertising and Sales Manager Sean Thomas

Advertising Specialist Jennifer Beierle

Trends magazine, American Animal Hospital Association
12575 W. Bayaud Ave., Lakewood, CO 80228-2021
Phone: 800-883-6301 | Fax: 303-986-1700
Email: trends@aaaha.org

Journal Highlights Abstracts of the current issue of JAAHA, *Journal of the American Animal Hospital Association*, are reprinted with permission. For masthead information, editorial review board, authors' guidelines, and subscription information, see the online publication at aaaha.org or jaaha.org.

Subscriptions *Trends magazine* is provided to AAHA members as a member benefit (annual membership dues include \$60 for a subscription). Annual nonmember subscriptions: \$70. Single copies: \$20. To subscribe, call 800-883-6301.

Postmaster *Trends magazine*® (ISSN 1062-8266) is published 12 times per year (January, February, March, April, May, June, July, August, September, October, November, December) by the American Animal Hospital Association, at 12575 W. Bayaud Ave., Lakewood, CO 80228. Periodicals postage paid at Denver, Colorado, and at additional mailing offices. Canadian Post Agreement Number 40041253; send change-of-address information and blocks of undeliverable copies to P.O. Box 1051, Fort Erie, ON L2A 6C7. Printed in the USA. Postmaster: Send address changes to *Trends magazine*, 12575 W. Bayaud Ave., Lakewood, CO 80228-2021.

Publication in this magazine of any advertisement, article, product information, or other information or data does not necessarily imply that the American Animal Hospital Association endorses or approves the advertiser, the product, the service, or the authors' viewpoints. The information presented is intended to help you make good decisions, but it is not a replacement for appropriate financial, legal, or other advice. Neither this publication nor AAHA in any way endorses or guarantees the accuracy, reliability, or completeness of the facts, views, opinions, recommendations, information, or statements contained in this publication. In addition, nothing within these pages should be construed as an offer or solicitation to purchase or sell any investment items. Readers are urged to consult their attorneys, accountants, and other advisors on all practice-related decisions. No part of this issue may be reproduced in any form without written permission from the publisher. The sole exception is made for veterinary practices, which may make a limited number of copies for use within the practices. For all other uses, including all uses by commercial entities, please send your request to permissions@aaaha.org. AAHA shall not be held liable for adverse reactions to or damage resulting from the application of this information or any misstatement or error contained in this work. AAHA shall be held harmless from any and all claims that may arise as a result of any reliance on the information provided.

©2021 American Animal Hospital Association. All rights reserved.

Cover image: MirasWonderland/Stock via Getty Images Plus



In Clinic. At Home.

Thank you for trusting **NexGard®** (afoxolaner) over 270 million times.¹



- NexGard® (afoxolaner) is **the only chew FDA-approved to prevent Lyme infections** by killing black-legged ticks.
- It's **safe for puppies** as young as 8 weeks, weighing as little as 4 pounds.
- The savory, beef-flavored chew was **designed with compliance in mind**:
 - **NexGard is a leader in average number of months of flea and tick control** purchased per patient per year.*²
 - **More NexGard users purchased a full 12 months** of flea and tick protection than users of any other flea and tick chew.*²

NexGard®
(afoxolaner) Chewables

[Learn more at NexGardClinic.com](https://NexGardClinic.com)

IMPORTANT SAFETY INFORMATION: NexGard is for use in dogs only. The most frequently reported adverse reactions include vomiting, pruritus, lethargy, diarrhea and lack of appetite. The safe use of NexGard in pregnant, breeding, or lactating dogs has not been evaluated. Use with caution in dogs with a history of seizures or neurologic disorders. For more information, see the full prescribing information or visit NexGardClinic.com.

*Assessment was conducted by IDEXX® and leveraged veterinary clinic PIMS transaction level data for 2019. This analysis included data from approximately 7000 U.S. clinics that had consistent data from 2017 to 2019. To be included, patients needed to have at least one parasiticide transaction in the baseline year (2018). The analysis was limited to loyal patients, where loyalty was defined as having one flea/tick control brand during the full three-year period. The average number of months of NexGard purchased per year was 6.64, compared to 6.69 for BRAVECTO. This analysis overestimates the duration of efficacy for BRAVECTO. For comparison purposes, each BRAVECTO chew was assessed as providing three months of flea & tick protection versus the labeled 12-week coverage for fleas and three species of ticks, and 8-week coverage for Lone Star ticks.

1. Data on file at Boehringer Ingelheim. 2. Data on file at IDEXX Laboratories, Inc. Westbrook, Maine USA.

features



24

24 Sniffing Out Coronavirus

Working dogs can detect COVID-19

by Tony McReynolds

32 Sticker Shock

The cost of building during uncertain times

by Maureen Blaney Flietner



32

NEW

Vitamin D Test Kit PLUS+

FOR CANINE AND FELINE PATIENTS



**Vitamin D or B12 testing
included. Swap one for the
other at no additional cost**

**Pay only for optional
add-on tests**

**Now Available
With More Testing
Options For
Your Patients**

Create custom test
panels with a single kit.
Test combinations
can include:

- **Essential Vitamins Panel**
VitD, B12, Folate, Magnesium
- **Essential Wellness Panel**
VitD, B12, Magnesium,
Inflammation
- **Joint Health Panel**
VitD, Degenerative Joint Disease
- **Cancer Risk Panel**
VitD, Cancer Risk Assessment
- **Full Wellness Panel for Dogs**
VitD, B12, Magnesium,
Inflammation, Degenerative
Joint Disease, Cancer
Risk Assessment

Rx Vitamins
for PETS

To learn more about Rx Vitamins nutraceuticals, please call or email us at:

800-792-2222 or 914-592-2323

RxVitamins.com info@RxVitamins.com

PROFESSIONAL VETERINARY FORMULAS

departments



39 Special Section

2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats

Executive summary of the latest guidance from AAHA

45 Home Team

Don't Ignore the Other Things

Safety is more than just COVID prevention

51 Get Smart

Integrative Care

Essential care for hospice and palliative care patients

56 Pain Management Case Study

Pain Management Case #20

Rehabilitation of a golden retriever with a CCL tear

the usual

8 From the Editor's Desk

12 Inside AAHA

18 Notebook

60 AAHA Marketplace

62 Advertiser Index

64 Employee of the Month



All comfort
No compromise

0.5-mL NOBIVAC EDGE® VACCINES
Deliver the full protection you trust with a softer touch.

Now you can deliver all the protection of Nobivac® vaccines in half the volume—ensuring broad-spectrum, comfortable vaccinations for dogs of any size.

PUT COMFORT INTO PRACTICE WITH NOBIVAC EDGE® VACCINES.

To learn more, contact your Merck Animal Health sales representative or your distributor representative.

Customer Service: 1-800-521-5767
(Monday–Friday, 9:00AM–6:00PM EST)

Technical Services: 1-800-224-5318
(Monday–Friday, 9:00AM–7:00PM EST)



from the editor's desk

THE PANDEMIC MIGHT BE WINDING DOWN (or not), but some special dogs are still working their tails off in the fight against COVID-19. This month's feature looks at how international researchers are using dogs to detect the presence of COVID-19 in humans. How they do it is still somewhat of a mystery, but the dogs are far faster and more accurate than any human-made test.

Also in this issue, the rising costs of building materials. If you have planned any kind of construction or renovation project in the past year, you know that materials—lumber, concrete, metal, etc.—have all gone up in price. We'll take a look at the causes of the price hikes and some lessons learned from the field.

Also make sure to check out the executive summary of the new *2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats*. The full guidelines are on the aaha.org website, and also in your July issue of JAAHA. But the executive summary will give you the bullet points of this comprehensive guidelines update.

EMPLOYEE OF THE MONTH

Spots are filling up fast! Nominated a team member who deserves a shout-out in *Trends* for our new Employee of the Month column? Let us know! If we feature your Employee of the Month, you'll get \$100 to share with your superstar staffer. Email ben.williams@aaha.org for details.

BONUS CONTENT

Have you discovered the *Trends* online bonus content? Some articles in the magazine have a box that mentions online bonus content. To see it, log on to trends.aaha.org and find the article online, and then just click the link to get to the bonus content. It might be a handout, downloadable checklist, or video, so look for the box, log on, and click away!

COMING NEXT MONTH

In September we will take a closer look at pet insurance and review four recent cases. We will also feature articles on investing in disaster preparation, and telehealth.

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

—Ben Williams, Editor

Now approved
for cats and dogs*



THE PROVEN WAY TO TREAT CANINE DIABETES ONCE-A-DAY



The breakthrough you've been waiting for is here: now you can deliver glycemic control in most diabetic dogs WITH A SINGLE DAILY INJECTION.^{1,2} To learn more, contact your Boehringer Ingelheim Sales Representative or Professional Services Veterinarian.

ProZinc[®]
(protamine zinc recombinant
human insulin)

*PROZINC is approved for twice-daily use in cats.³

IMPORTANT SAFETY INFORMATION: PROZINC is for use in dogs and cats only. Keep out of the reach of children. Animals presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdose can result in profound hypoglycemia and death. The most common adverse reactions were lethargy, anorexia, hypoglycemia, vomiting, seizures, shaking (dogs only), diarrhea, and ataxia. Many of the adverse reactions, such as lethargy, seizures, shaking (dogs only), and ataxia, are associated with hypoglycemia. Glucocorticoid and progestogen use should be avoided. The safety and effectiveness of PROZINC in puppies, kittens, or breeding, pregnant, and lactating animals has not been evaluated. PROZINC is contraindicated during episodes of hypoglycemia and in animals sensitive to protamine zinc recombinant human insulin or any other ingredients in PROZINC. **For more information, please see full prescribing information.**

References:

¹ Data on file at Boehringer Ingelheim.

² ProZinc[®] (protamine zinc recombinant human insulin) [Freedom of Information Summary]. Duluth, GA: Boehringer Ingelheim Animal Health USA, Inc.; 2019.

³ ProZinc[®] (protamine zinc recombinant human insulin) [Freedom of Information Summary]. St. Joseph, MO: Boehringer Ingelheim Vetmedica, Inc.; 2009.

PROZINC[®] is a registered trademark of Boehringer Ingelheim Animal Health USA Inc. ©2020 Boehringer Ingelheim Animal Health USA Inc., Duluth, GA. All rights reserved. US-PET-0418-2020



Package Insert for Cats

ProZinc® (protamine zinc recombinant human insulin)

40 IU/mL

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

Description: PROZINC® is a sterile aqueous protamine zinc suspension of recombinant human insulin.

Each mL contains:

recombinant human insulin	40 International Units (IU)
protamine sulfate	0.466 mg
zinc oxide	0.088 mg
glycerin	16.00 mg
dibasic sodium phosphate, heptahydrate	3.78 mg
phenol (added as preservative)	2.50 mg
hydrochloric acid	1.63 mg
water for injection (maximum)	1005 mg
pH is adjusted with hydrochloric acid and/or sodium hydroxide.	

Indication: PROZINC (protamine zinc recombinant human insulin) is indicated for the reduction of hyperglycemia and hyperglycemia-associated clinical signs in cats with diabetes mellitus.

Dosage and Administration: USE OF A SYRINGE OTHER THAN A U-40 SYRINGE WILL RESULT IN INCORRECT DOSING.

FOR SUBCUTANEOUS INJECTION ONLY.

DO NOT SHAKE OR AGITATE THE VIAL.

PROZINC should be mixed by gently rolling the vial prior to withdrawing each dose from the vial. Once mixed, PROZINC suspension has a white, cloudy appearance. Clumps or visible white particles can form in insulin suspensions: do not use the product if clumps or visible white particles persist after gently rolling the vial.

Using a U-40 insulin syringe, the injection should be administered subcutaneously on the back of the neck or on the side of the cat.

Always provide the Client Information Sheet with each prescription.

The initial recommended PROZINC dose is 0.1 – 0.3 IU insulin/pound of body weight (0.2 – 0.7 IU/kg) every 12 hours. The dose should be given concurrently with or right after a meal. The veterinarian should re-evaluate the cat at appropriate intervals and adjust the dose based on both clinical signs and glucose nadirs until adequate glycemic control has been attained. In the effectiveness field study, glycemic control was considered adequate if the glucose nadir from a 9-hour blood glucose curve was between 80 and 150 mg/dL and clinical signs of hyperglycemia such as polyuria, polydipsia, and weight loss were improved.

Further adjustments in the dosage may be necessary with changes in the cat's diet, body weight, or concomitant medication, or if the cat develops concurrent infection, inflammation, neoplasia, or an additional endocrine or other medical disorder.

Contraindications: PROZINC is contraindicated in cats sensitive to protamine zinc recombinant human insulin or any other ingredients in PROZINC. PROZINC is contraindicated during episodes of hypoglycemia.

Warnings: User Safety: For use in cats and dogs only. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with running water for at least 15 minutes. Accidental injection may cause hypoglycemia. In case of accidental injection, seek medical attention immediately. Exposure to product may induce a local or systemic allergic reaction in sensitized individuals.

Animal Safety: Owners should be advised to observe for signs of hypoglycemia (see Client Information Sheet). Use of this product, even at established doses, has been associated with hypoglycemia. A cat with signs of hypoglycemia should be treated immediately. Glucose should be given orally or intravenously as dictated by clinical signs. Insulin should be temporarily withheld and, if indicated, the dosage adjusted.

Any change in insulin should be made cautiously and only under a veterinarian's supervision. Changes in insulin strength, manufacturer, type, species (human, animal) or method of manufacture (rDNA versus animal-source insulin) may result in the need for a change in dosage.

Appropriate diagnostic tests should be performed to rule out other endocrinopathies in diabetic cats that are difficult to regulate.

Precautions: Cats presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdose can result in profound hypoglycemia and death.

Glucocorticoids, progestogens, and certain endocrinopathies can have an antagonistic effect on insulin activity. Glucocorticoid and progestogen use should be avoided.

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

The safety and effectiveness of PROZINC in kittens has not been evaluated.

Adverse Reactions: Effectiveness Field Study

In a 45-day effectiveness field study, 176 cats received PROZINC. Hypoglycemia (defined as a blood glucose value of < 50 mg/dL) occurred in 71 of the cats at various times throughout the study. Clinical signs of hypoglycemia were generally mild in nature (described as lethargic, sluggish, weak, trembling, uncoordinated, groggy, glassy-eyed or dazed). In 17 cases, the veterinarian provided oral glucose supplementation or food as treatment. Most cases were not associated with clinical signs and received no treatment. One cat had a serious hypoglycemic event associated with stupor, lateral recumbency, hypothermia and seizures.

All cases of hypoglycemia resolved with appropriate therapy and if needed, a dose reduction.

Three cats had injection site reactions which were described as either small, punctate, red lesions; lesions on neck; or palpable subcutaneous thickening. All injection site reactions resolved without cessation of therapy.

Four cats developed diabetic neuropathy during the study as evidenced by plantigrade stance. Three cats entered the study with plantigrade stance, one of which resolved by Day 45. Four cats were diagnosed with diabetic ketoacidosis during the study. Two were euthanized due to poor response to treatment. Five other cats were euthanized during the study, one of which had hypoglycemia. Four cats had received PROZINC for less than a week and were euthanized due to worsening concurrent medical conditions.

The following additional clinical observations or diagnoses were reported in cats during the effectiveness field study: vomiting, lethargy, diarrhea, cystitis/hematuria, upper respiratory infection, dry coat, hair loss, ocular discharge, abnormal vocalization, black stool, and rapid breathing.

Extended Use Field Study

Cats that completed the effectiveness study were enrolled into an extended use field study. In this study, 145 cats received PROZINC for up to an additional 136 days. Adverse reactions were similar to those reported during the 45-day effectiveness study and are listed in order of decreasing frequency: vomiting, hypoglycemia, anorexia/poor appetite, diarrhea, lethargy, cystitis/hematuria, and weakness. Twenty cats had signs consistent with hypoglycemia described as: sluggish, lethargic, unsteady, wobbly, seizures, trembling, or dazed. Most of these were treated by the owner or veterinarian with oral glucose supplementation or food; others received intravenous glucose. One cat had a serious hypoglycemic event associated with seizures and blindness. The cat fully recovered after supportive therapy and finished the study. All cases of hypoglycemia resolved with appropriate therapy and if needed, a dose reduction.

Fourteen cats died or were euthanized during the extended use study. In two cases, continued use of insulin despite anorexia and signs of hypoglycemia contributed to the deaths. In one case, the owner decided not to continue therapy after a presumed episode of hypoglycemia. The rest were due to concurrent medical conditions or worsening of the diabetes mellitus.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim 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 <http://www.fda.gov/reportanimal>.

Information for Cat Owners: Please refer to the Client Information Sheet for Cats for more information about PROZINC. PROZINC, like other insulin products, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the associated clinical signs. Potential adverse reactions include: hypoglycemia, insulin antagonism/resistance, rapid insulin metabolism, insulin-induced hyperglycemia (Somogyi Effect), and local or systemic reactions. The most common adverse reaction observed is hypoglycemia. Signs may include: weakness, depression, behavioral changes, muscle twitching, and anxiety. In severe cases of hypoglycemia, seizures and coma can occur. Hypoglycemia can be fatal if an affected cat does not receive prompt treatment. Appropriate veterinary monitoring of blood glucose, adjustment of insulin dose and regimen as needed, and stabilization of diet and activity help minimize the risk of hypoglycemic episodes. The attending veterinarian should evaluate other adverse reactions on a case-by-case basis to determine if an adjustment in therapy is appropriate, or if alternative therapy should be considered.

Effectiveness: A total of 187 client-owned cats were enrolled in a 45-day field study, with 176 receiving PROZINC. One hundred and fifty-one cats were included in the effectiveness analysis. The patients included various purebred and mixed breed cats ranging in age from 3 to 19 years and in weight from 4.6 to 20.8 pounds. Of the cats included in the effectiveness analysis, 101 were castrated males, 49 were spayed females, and 1 was an intact female.

Cats were started on PROZINC at a dose of 0.1-0.3 IU/lb (0.2-0.7 IU/kg) twice daily. Cats were evaluated at 7, 14, 30, and 45 days after initiation of therapy and the dose was adjusted based on clinical signs and results of 9-hour blood glucose curves on Days 7, 14, and 30.

Effectiveness was based on successful control of diabetes which was defined as improvement in at least one blood glucose variable (glucose curve mean, nadir, or fructosamine) and at least one clinical sign (polyuria, polydipsia, or body weight). Based on this definition, 115 of 151 cases (76.2%) were considered successful. Blood glucose curve means decreased from 415.3 mg/dL on Day 0 to 203.2 mg/dL by Day 45 and the mean blood glucose nadir decreased from 407.9 mg/dL on Day 0 to 142.4 mg/dL on Day 45. Mean fructosamine values decreased from 505.9 µmol/L on Day 0 to 380.7 µmol/L on Day 45.

Cats that completed the effectiveness study were enrolled in an extended use field study. The mean fructosamine value was 342.0 µmol/L after a total of 181 days of PROZINC therapy.

How Supplied: PROZINC is supplied as a sterile injectable suspension in 10 mL and 20 mL multi-dose vials. Each mL of PROZINC contains 40 IU recombinant human insulin.

Storage Conditions: Store in an upright position under refrigeration at 36-46°F (2-8°C). Do not freeze. Protect from light. **Use the 10 mL vial within 60 days of first puncture. Use the 20 mL vial within 80 days of first puncture.**

Approved by FDA under NADA # 141-297

Marketed by:

Boehringer Ingelheim Animal Health USA Inc.
Duluth, GA 30096

PROZINC® is a registered trademark of Boehringer Ingelheim Animal Health USA Inc.
© 2019 Boehringer Ingelheim Animal Health USA Inc. All rights reserved.

Revised 08/2019

449986-01



Package Insert for Dogs

ProZinc® (protamine zinc recombinant human insulin)

40 IU/mL

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

Description: PROZINC® is a sterile aqueous protamine zinc suspension of recombinant human insulin.

Each mL contains:

recombinant human insulin	40 International Units (IU)
protamine sulfate	0.466 mg
zinc oxide	0.088 mg
glycerin	16.00 mg
dibasic sodium phosphate, heptahydrate	3.78 mg
phenol (added as preservative)	2.50 mg
hydrochloric acid	1.63 mg
water for injection (maximum)	1005 mg
pH is adjusted with hydrochloric acid and/or sodium hydroxide.	

Indication: PROZINC (protamine zinc recombinant human insulin) is indicated for the reduction of hyperglycemia and hyperglycemia-associated clinical signs in dogs with diabetes mellitus.

Dosage and Administration: USE OF A SYRINGE OTHER THAN A U-40 SYRINGE WILL RESULT IN INCORRECT DOSING.

FOR SUBCUTANEOUS INJECTION ONLY.

DO NOT SHAKE OR AGITATE THE VIAL.

PROZINC should be mixed by gently rolling the vial prior to withdrawing each dose from the vial. Once mixed, PROZINC suspension has a white, cloudy appearance. Clumps or visible white particles can form in insulin suspensions; do not use the product if clumps or visible white particles persist after gently rolling the vial.

Using a U-40 insulin syringe, the injection should be administered subcutaneously on the back of the neck or on the side of the dog.

Always provide the Client Information Sheet with each prescription.

Starting dose: The recommended starting dose for PROZINC is 0.2-0.5 IU insulin/pound of body weight (0.5-1.0 IU/kg) **once daily**. The recommended starting dose for naïve dogs is the lower end of the dose range. The recommended starting dose for dogs with poorly controlled diabetes mellitus and transitioning from another insulin product is the mid to higher end of the dose range based on the veterinarian's experience with the dog's medical history and previous insulin dose. When transitioning from another insulin, the dog's blood glucose and general condition should be closely monitored. **When transitioning from another insulin, PROZINC should be started once daily, regardless of the frequency of prior insulin use.**

The dose should be given concurrently with or right after a meal. The veterinarian should re-evaluate the dog at appropriate intervals and adjust the dose and frequency based on both clinical signs and laboratory test results (the blood glucose curve values and shape, nadir, and fructosamine) until adequate glycemic control has been attained. In the effectiveness field study, glycemic control was considered adequate if the glucose nadir from a 9-hour blood glucose curve was between 80 and 125 mg/dL, the maximum blood glucose was ≤ 300 mg/dL, and clinical signs of hyperglycemia such as polyuria, polydipsia, or weight loss were improved.

Changing to twice daily dosing: Twice daily dosing should be considered if the duration of insulin action is determined to be inadequate with once daily dosing. Use caution when adjusting from once daily to twice daily dosing because PROZINC may have prolonged duration of action in some dogs (see Clinical Pharmacology). The veterinarian should closely monitor the duration of action using blood glucose curves to avoid the increased risk of hypoglycemia. If twice daily dosing is initiated, the two doses should each be approximately 25% less than the once daily dose required to attain an acceptable glucose nadir. For example, if a dog receiving 10 units of PROZINC once daily has an acceptable nadir but inadequate duration of activity, the dose should be changed to 7 units twice daily (round down to the nearest whole unit).

Further adjustments in the dosage may be necessary with changes in the dog's diet, body weight, or concomitant medication, or if the dog develops concurrent infection, inflammation, neoplasia, or an additional endocrine or other medical disorder.

Contraindications: PROZINC is contraindicated in dogs sensitive to protamine zinc recombinant human insulin or any other ingredients in PROZINC. PROZINC is contraindicated during episodes of hypoglycemia.

Warnings:

User Safety: For use in dogs and cats. Keep out of the reach of children. Avoid contact with eyes. In case of contact, immediately flush eyes with running water for at least 15 minutes. Accidental injection may cause hypoglycemia. In case of accidental injection, seek medical attention immediately. Exposure to product may induce a local or systemic allergic reaction in sensitized individuals.

Animal Safety: Owners should be advised to observe for signs of hypoglycemia (see Client Information Sheet). Use of this product, even at established doses, has been associated with hypoglycemia. A dog with signs of hypoglycemia should be treated immediately. Glucose should be given orally or intravenously as dictated by clinical signs. Insulin should be temporarily withheld and, if indicated, the dosage adjusted.

Any change in insulin should be made cautiously and only under a veterinarian's supervision. Changes in insulin strength, manufacturer, type, species (human, animal) or method of manufacture (rDNA versus animal-source insulin) may result in the need for a change in dosage.

Appropriate diagnostic tests should be performed to rule out other endocrinopathies in diabetic dogs that are difficult to regulate.

Precautions: Dogs presenting with severe ketoacidosis, anorexia, lethargy, and/or vomiting should be stabilized with short-acting insulin and appropriate supportive therapy until their condition is stabilized. As with all insulin products, careful patient monitoring for hypoglycemia and hyperglycemia is essential to attain and maintain adequate glycemic control and to prevent associated complications. Overdose can result in profound hypoglycemia and death.

Glucocorticoids, progestogens, and certain endocrinopathies can have an antagonistic effect on insulin activity. Glucocorticoid and progestogen use should be avoided.

The safety and effectiveness of PROZINC in breeding, pregnant, and lactating dogs has not been evaluated.

The safety and effectiveness of PROZINC in puppies has not been evaluated.

Adverse Reactions: In a 182-day field study, 276 dogs received PROZINC. The most common adverse reactions were lethargy, anorexia, hypoglycemia, vomiting, seizures, shaking, diarrhea, and ataxia.

Table 1 summarizes the adverse reactions reported in the study. Clinical signs of hypoglycemia varied and included seizure, collapse, ataxia, staggering, trembling, twitching, shaking, disorientation, lethargy, weakness, and vocalization. In Table 1, the individual clinical signs that were observed during the episodes of hypoglycemia are captured as separate adverse reactions and a single dog may have experienced more than one clinical sign of hypoglycemia.

Table 1. Adverse reactions seen in the safety population (276 dogs)

Adverse Reaction	Number and Percentage
Lethargy (lethargy, depression, listless, and tiredness)	45 (16.3%)
Anorexia (anorexia, decreased appetite, inappetence, and not eating)	28 (10.1%)
Hypoglycemia with clinical signs	24 (8.9%)
Vomiting	21 (7.6%)
Seizures	16 (5.8%)
Shaking/trembling/twitching	13 (4.7%)
Ataxia (ataxia, balance problem, stumbling gait)	11 (4.0%)
Diarrhea (includes bloody diarrhea)	9 (3.3%)
Disorientation/confusion	9 (3.3%)
Weakness	8 (2.9%)
Restlessness/anxiety/agitation	6 (2.2%)
Cataract	6 (2.2%)
Panting (panting and tachypnea)	6 (2.2%)
Hematuria	4 (1.5%)

Clinical pathology: The only change seen in complete blood count, serum chemistry, and urinalysis results was an elevation in mean cholesterol at Day 182 (432.6 mg/dL, normal range 131-345 mg/dL) compared to Day -1 (333.7 mg/dL).

Injection site reactions: Seven dogs had injection site reactions, including observations of thickened skin, swelling, bumps at the injection site, and redness. All injection site reactions resolved without cessation of PROZINC therapy. Reaction to the injection, including vocalization, was observed in four dogs.

Hypoglycemia: There were 80 hypoglycemic episodes recorded during the study with some dogs experiencing more than one episode; 37 episodes were associated with clinical signs in 24 dogs, 40 episodes were without clinical signs in 27 dogs, and 3 were with unknown signs in 2 dogs. Clinical signs of hypoglycemia varied and included seizure, collapse, ataxia, staggering, trembling, twitching, shaking, disorientation, lethargy, weakness, and vocalization. Some dogs required hospitalization and intravenous dextrose while most recovered after receiving oral supplementation with a meal and/or oral glucose such as syrup. Two dogs were euthanized when the hypoglycemia did not resolve with supportive care. Hypoglycemia without clinical signs was defined as two consecutive blood glucose curve values < 60 mg/dL unaccompanied by clinical signs.

Diabetic ketoacidosis and pancreatitis: Eleven dogs were diagnosed with diabetic ketoacidosis. Four of these 11 dogs died or were euthanized, one after one dose of PROZINC. Twenty-one dogs were diagnosed with pancreatitis. Seven of these 21 dogs died or were euthanized due to complications of pancreatitis. Four dogs had concurrent diabetic ketoacidosis and pancreatitis, three of which died or were euthanized. Not all the deaths were considered related to PROZINC.

Deaths: Thirty-six (36) dogs died or were euthanized, six of which were possibly related to PROZINC. One dog died from recurrent episodes of pancreatitis, and one died after developing severe vomiting and diarrhea followed by a seizure. Four dogs were euthanized: one developed severe pancreatitis and azotemia, one had recurrent episodes of pancreatitis and diabetic ketoacidosis, and two for lack of effectiveness.

To report suspected adverse drug events, for technical assistance or to obtain a copy of the Safety Data Sheet (SDS), contact Boehringer Ingelheim 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 <http://www.fda.gov/reportanimal>.

Clinical Pharmacology: PROZINC was administered subcutaneously to 10 healthy Beagles using an incomplete crossover design at doses of 0.5 IU/kg (5 dogs), 0.8 IU/kg at a single site (10 dogs), or 0.8 IU/kg at three separate sites (6 dogs). Insulin and glucose concentrations were measured over 24 hours. The shapes of insulin and glucose curves were variable among dogs; and the relationship between insulin dose, concentration, and glucose-lowering effect was nonlinear (Table 2).

Table 2. Pharmacodynamics of three dosing groups

Dose group	Onset of Action	Time to nadir	Duration of
Action			
0.5 IU/kg at a single site	1 to 14 hours	6 to 16 hours	16 to >24 hours
0.8 IU/kg at a single site	0.5 to 10 hours	5 to >24 hours	16 to >24 hours
0.8 IU/kg divided at three sites	1 to 10 hours	8 to 20 hours	18 to >24 hours

Information for Dog Owners: Please refer to the Client Information Sheet for Dogs for more information about PROZINC. PROZINC, like other insulin products, is not free from adverse reactions. Owners should be advised of the potential for adverse reactions and be informed of the associated clinical signs. Potential adverse reactions include hypoglycemia, insulin antagonism/resistance, rapid insulin metabolism, insulin-induced hyperglycemia (Somogyi Effect), and local or systemic reactions. The most common adverse reaction observed is hypoglycemia. Signs may include weakness, depression, behavioral changes, muscle twitching, and anxiety. In severe cases of hypoglycemia, seizures and coma can occur. Hypoglycemia can be fatal if an affected dog does not receive prompt treatment. Appropriate veterinary monitoring of blood glucose, adjustment of insulin dose and regimen as needed, and stabilization of diet and activity help minimize the risk of hypoglycemic episodes. The attending veterinarian should evaluate other adverse reactions on a case-by-case basis to determine if an adjustment in therapy is appropriate, or if alternative therapy should be considered.

Effectiveness: A total of 276 client-owned dogs were enrolled in an 84-day field study followed by a 98-day extended-use phase with 276 dogs receiving PROZINC. The dogs included various purebred and mixed breed dogs ranging in age from 2 to 16 years and in weight from 3.3 to 123 pounds. There were 128 neutered males, 8 intact males, 134 spayed females and 6 intact females. Two hundred twenty-four dogs (224) were included in the effectiveness analysis. Dogs were started on PROZINC at a dose of 0.2-0.5 IU/lb (0.5-1.0 IU/kg) once daily. Dogs were evaluated at 7, 14, 21, 28, 42, 63 and 84 days after initiation of therapy. The dose was adjusted based on clinical signs and results of 9-hour blood glucose curves on Days 7, 14, 21, 28, 42, 63 and 84.

Effectiveness was based on successful control of diabetes which was defined as improvement in at least one laboratory variable (blood glucose curve mean, blood glucose curve nadir, or fructosamine) and at least one clinical sign (polyuria, polydipsia, or weight loss). Based on this definition, 162 of 224 cases (72%) were considered successful.

How Supplied: PROZINC is supplied as a sterile injectable suspension in 10 mL and 20 mL multi-dose vials. Each mL of PROZINC contains 40 IU recombinant human insulin.

Storage Conditions: Store in an upright position under refrigeration at 36-46°F (2-8°C). Do not freeze. Protect from light. Use the 10 mL vial within 60 days of first puncture. Use the 20 mL vial within 80 days of first puncture.

Approved by FDA under NADA # 141-297

Marketed by:

Boehringer Ingelheim Animal Health USA Inc. Duluth, GA 30096

PROZINC® is a registered trademark of Boehringer Ingelheim Animal Health USA Inc.

© 2019 Boehringer Ingelheim Animal Health USA Inc. All rights reserved.

Revised 08/2019

449986-01



View from the Board

The COVID-19 pandemic has forever changed our industry's perception and prioritization of safely operating a veterinary practice. Current AAHA standards outline the need for a natural disaster preparedness plan, but the gaps in planning were painfully revealed last year. Most disaster planning is for discrete events such as flooding or power outages that impact the facility. The past year revealed the need to prepare for events that affect the entire community, both clients and staff members, inside and outside the business.

No one anticipated how the COVID-19 pandemic would disrupt our understanding of safety and preparedness. The illness of just one employee reverberated through entire facilities and paralyzed operations with rolling quarantines and work stoppages. Safely conducting business became reliant on the physical and mental health and well-being of the teams, and for the first time, it became imperative for employees to adjust their behaviors outside of the workplace to protect their coworkers. Many staff members were compelled to consider whether continued employment was worth the possible consequences for at-risk family members at home.

Safety became about reacting and establishing protocols to create separate teams, monitor temperatures, and minimize possible exposures. Curbside protocols were implemented to protect staff and clients, requiring more communication utilizing technology, for better or worse. The positive was ensuring safety while our teams worked together to solve constantly changing operational challenges. Conversely, we are concerned about the possible erosion of relationships with clients because of the more impersonal service delivery.

I believe AAHA-accredited practices had an adaptation advantage as protocols and operational plans are all a part of adhering to the standards. In New York, our restrictive state requirements were not always easy to interpret and often seemed to supersede or conflict with US Centers for Disease Control and Prevention

guidance. Professional organizations, including AAHA, became integral partners in establishing industry-specific operational compliance.

The challenges continue as reopening progresses. As management teams of veterinary hospitals, how do we safely and comfortably allow clients to return to in-person appointments with staff again? How will we accommodate and protect those who choose not to be vaccinated? Can we or should we conduct on-site interviews for new employees, and what will high school career days look like? When will it be safe to welcome everyone into our doors and host open houses again?

Hopefully, coming out of the COVID-19 pandemic creates a situation where we consider safety not just as planning for an external force impacting the facility but with a holistic view of the staff, the physical practice, and our business model. Our industry needs to leverage our collective knowledge and experiences, evaluate the best practices that came out of the COVID-19 operational challenges, and enhance those ideas moving forward. We must proactively brainstorm how we could have been better prepared to protect the functional, physical, and psychological safety of our clients, staff, and practices.

Cheryl Smith, CVPM, is a director on the AAHA board, and is hospital administrator at Galway Veterinary Hospital, PLLC, in Galway, New York. Smith became a certified veterinary practice manager in 2009, and she graduated from the Veterinary Management Institute in 2011.





Let's Connect at Connexity

September 22–25, 2021 | aaha.org/connexity

We're getting so excited to see you next month at the **Fairmont Scottsdale Princess resort** in Scottsdale, Arizona, for the in-person Connexity conference.

- 30 hours of scientific CE
- Fresh takes on practice problems at the "Solutions Carnival"
- Sessions on AAHA's latest 2021 guidelines, including telehealth, nutrition, and feline life stage



AAHA is committed to strict COVID-19 safety measures and will have a certified **Pandemic Compliance Advisor** onsite to ensure proper protocols.

New ways to engage and learn together!

Team Anesthesia Simulation

Remember the thrill of playing the board game *Operation*? A limited number of Connexity guests will participate in an immersive anesthesia simulation where their team will test their anesthesia skills and problem-solving teamwork in a mock surgery scenario.

ER Escape Room

Use the clues and your veterinary practice knowledge to clear obstacles and solve problems to escape!

Meet the Keynotes



Bertice Berry, PhD, is a sociologist, author, and award-winning lecturer who has published 11 bestselling fiction and nonfiction books. She has had a nationally syndicated television show and has appeared

on *The Tonight Show*, *Oprah Winfrey*, Comedy Central, and CNN, among others. Berry has won numerous accolades for her writing and presentations, including Comedian of the Year and Lecturer of the Year.



Josh Packard, PhD, is a sociologist, professor, and researcher at the University of Northern Colorado, where he also serves as executive director of the Social Research Lab and host of "The Bias Disruption" podcast,

which applies social science to examine how blindspots, bias, and preconceived ideas impact organizations.



Sara Ross founded BrainAMPED to provide brain-based tools to decrease stress and exhaustion and increase Leadership Vitality by strengthening the skills of energy management, emotional intelligence, and


resilience. Her ideas and research are earning her a reputation as a fresh and thought-provoking voice in discussions focused on the future of work.


AAHA MEETINGS AND EVENTS

SEPTEMBER							OCTOBER							NOVEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
			1	2	3	4						1	2		1	2	3	4	5	6
5	6	7	8	21	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
26	27	28	29	30			24	25	26	27	28	29	30	28	29	30				
							31													


 AAHA at WVC Annual Conference Booth #1924

 Beyond Medicine Workshop

 Connexity (virtual)
Please visit aaha.org

 AAHA at IAAHPC Conference

 Beyond Medicine Workshop

 Connexity (in-person)
Scottsdale, Arizona

To register for a learning program and learn more about AAHA's upcoming events, visit aaha.org.

DEAR AAHA

Dear AAHA,

We've been struggling to find ways to keep our patients' temperatures within normal limits since we've been advised to no longer use electrical resistance warming (HotDog) blankets. Do you have any suggestions?

—Warming up in Maryland

Dear Warming,

It is great to hear that you understand the importance of keeping patients' temperatures within normal limits. Understanding how a patient is losing their heat is vital to preventing heat loss and hypothermia (for example, taking steps to keep the patient dry and warm when cold water is used during a dental procedure). Please keep in mind that temperatures should be checked periodically during the recovery period to ensure they are returning to or maintaining a normal temperature. We encourage you to explore the many methods out there while aligning with your hospital protocols, such as in-line fluid warmers, forced-air warmers, and pre-warming patients by starting IVC and fluids during pre-op.

—AAHA's Member Experience Team

Have a question you'd like AAHA to answer? Email us at dearaaha@aaha.org.





Escape the
ordinary.

Reignite your passion for the profession at Connexity

Ready to return to the fun of in-person learning? You go to conferences to escape the day to day chaos—why not do it in style? We've cleared the noise so you can focus on what matters—learning, connecting, and re-energizing. Whatever your reason for being here, we've got you covered.

Join us September 22-25, 2021 at the 5-star Fairmont Scottsdale Princess for the CE you need, the connection you crave, and the fun you deserve.

**Attendance is limited so grab your spot before they're gone!
Learn more and register at aaha.org/Connexity.**

Where passion meets purpose.



**Invite the entire team for
50 hours of medical and
nonmedical CE**



**Explore new ways of
thinking at the Solutions
Carnival**



**Get back to your fullest
self with a pampered
experience**



DEVTP

DISTANCE EDUCATION
VETERINARY TECHNOLOGY
PROGRAM



The veterinary technicians you're looking for are already in your practice.

Empower your veterinary assistants to become credentialed technicians in as little as five semesters through the AVMA-accredited Distance Education Veterinary Technology Program (DEVTP).

Registration for the fall semester is now open. Classes begin August 24.

aaha.org/devtp



Heartgard[®] Plus
(ivermectin/pyrantel)

CHEWABLES

CAUTION: Federal (U.S.A.) law restricts this drug to use by or on the order of a licensed veterinarian.

INDICATIONS: For use in dogs to prevent canine heartworm disease by eliminating the tissue stage of heartworm larvae (*Dirofilaria immitis*) for a month (30 days) after infection and for the treatment and control of ascarids (*Toxocara canis*, *Toxascaris leonina*) and hookworms (*Ancylostoma caninum*, *Uncinaria stenocephala*, *Ancylostoma braziliense*).

DOSAGE: HEARTGARD[®] Plus (ivermectin/pyrantel) should be administered orally at monthly intervals at the recommended minimum dose level of 6 mcg of ivermectin per kilogram (2.72 mcg/lb) and 5 mg of pyrantel (as pamoate salt) per kg (2.27 mg/lb) of body weight. The recommended dosing schedule for prevention of canine heartworm disease and for the treatment and control of ascarids and hookworms is as follows:

Dog Weight	Cheewables Per Month	Ivermectin Content	Pyrantel Content	Color Coding On Foil Backing and Carton
Up to 25 lb	1	68 mcg	57 mg	Blue
26 to 50 lb	1	136 mcg	114 mg	Green
51 to 100 lb	1	272 mcg	227 mg	Brown

HEARTGARD Plus is recommended for dogs 6 weeks of age and older. For dogs over 100 lb use the appropriate combination of these chewables.

ADMINISTRATION: Remove only one chewable at a time from the foil-backed blister card. Return the card with the remaining chewables to its box to protect the product from light. Because most dogs find HEARTGARD Plus palatable, the product can be offered to the dog by hand. Alternatively, it may be added intact to a small amount of dog food. The chewable should be administered in a manner that encourages the dog to chew, rather than to swallow without chewing. Chewables may be broken into pieces and fed to dogs that normally swallow treats whole.

Care should be taken that the dog consumes the complete dose, and treated animals should be observed for a few minutes after administration to ensure that part of the dose is not lost or rejected. If it is suspected that any of the dose has been lost, redosing is recommended.

HEARTGARD Plus should be given at monthly intervals during the period of the year when mosquitoes (vectors), potentially carrying infective heartworm larvae, are active. The initial dose must be given within a month (30 days) after the dog's first exposure to mosquitoes. The final dose must be given within a month (30 days) after the dog's last exposure to mosquitoes.

When replacing another heartworm preventive product in a heartworm disease preventive program, the first dose of HEARTGARD Plus must be given within a month (30 days) of the last dose of the former medication.

If the interval between doses exceeds a month (30 days), the efficacy of ivermectin can be reduced. Therefore, for optimal performance, the chewable must be given once a month on or about the same day of the month. If treatment is delayed, whether by a few days or many, immediate treatment with HEARTGARD Plus and resumption of the recommended dosing regimen will minimize the opportunity for the development of adult heartworms.

Monthly treatment with HEARTGARD Plus also provides effective treatment and control of ascarids (*T. canis*, *T. leonina*) and hookworms (*A. caninum*, *U. stenocephala*, *A. braziliense*). Clients should be advised of measures to be taken to prevent reinfection with intestinal parasites.

EFFICACY: HEARTGARD Plus Chewables, given orally using the recommended dose and regimen, are effective against the tissue larval stage of *D. immitis* for a month (30 days) after infection and, as a result, prevent the development of the adult stage. HEARTGARD Plus Chewables are also effective against canine ascarids (*T. canis*, *T. leonina*) and hookworms (*A. caninum*, *U. stenocephala*, *A. braziliense*).

ACCEPTABILITY: In acceptability and field trials, HEARTGARD Plus was shown to be an acceptable oral dosage form that was consumed at first offering by the majority of dogs.

PRECAUTIONS: All dogs should be tested for existing heartworm infection before starting treatment with HEARTGARD Plus which is not effective against adult *D. immitis*. Infected dogs must be treated to remove adult heartworms and microfilariae before initiating a program with HEARTGARD Plus.

While some microfilariae may be killed by the ivermectin in HEARTGARD Plus at the recommended dose level, HEARTGARD Plus is not effective for microfilariae clearance. A mild hypersensitivity-type reaction, presumably due to dead or dying microfilariae and particularly involving a transient diarrhea, has been observed in clinical trials with ivermectin alone after treatment of some dogs that have circulating microfilariae.

Keep this and all drugs out of the reach of children.

In case of ingestion by humans, clients should be advised to contact a physician immediately. Physicians may contact a Poison Control Center for advice concerning cases of ingestion by humans. Store between 68°F - 77°F (20°C - 25°C). Excursions between 59°F - 86°F (15°C - 30°C) are permitted. Protect product from light.

ADVERSE REACTIONS: In clinical field trials with HEARTGARD Plus, vomiting or diarrhea within 24 hours of dosing was rarely observed (1.1% of administered doses). The following adverse reactions have been reported following the use of HEARTGARD: Depression/lethargy, vomiting, anorexia, diarrhea, mydriasis, ataxia, staggering, convulsions and hypersalivation.

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 USA Inc. 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 <http://www.fda.gov/AnimalVeterinary/SafetyHealth>.

SAFETY: HEARTGARD Plus has been shown to be bioequivalent to HEARTGARD, with respect to the bioavailability of ivermectin. The dose regimens of HEARTGARD Plus and HEARTGARD are the same with regard to ivermectin (6 mcg/kg). Studies with ivermectin indicate that certain dogs of the Collie breed are more sensitive to the effects of ivermectin administered at elevated dose levels (more than 16 times the target use level) than dogs of other breeds. At elevated doses, sensitive dogs showed adverse reactions which included mydriasis, depression, ataxia, tremors, drooling, paresis, recumbency, excitability, stupor, coma and death. HEARTGARD demonstrated no signs of toxicity at 10 times the recommended dose (60 mcg/kg) in sensitive Collies. Results of these trials and bioequivalency studies, support the safety of HEARTGARD products in dogs, including Collies, when used as recommended.

HEARTGARD Plus has shown a wide margin of safety at the recommended dose level in dogs, including pregnant or breeding bitches, stud dogs and puppies aged 6 or more weeks. In clinical trials, many commonly used flea collars, dips, shampoos, anthelmintics, antibiotics, vaccines and steroid preparations have been administered with HEARTGARD Plus in a heartworm disease prevention program.

In one trial, where some pups had parvovirus, there was a marginal reduction in efficacy against intestinal nematodes, possibly due to a change in intestinal transit time.

HOW SUPPLIED: HEARTGARD Plus is available in three dosage strengths (see DOSAGE section) for dogs of different weights. Each strength comes in convenient cartons of 6 and 12 chewables.

Marketed by
Boehringer Ingelheim Animal Health USA Inc.
Duluth, GA 30096

Made in U.S.A.

©HEARTGARD and the Dog & Hand Logo are registered trademarks of Boehringer Ingelheim Animal Health USA Inc.

©2019 Boehringer Ingelheim Animal Health USA Inc.

All Rights Reserved.

Rev. 08-2018

1050-1999-04.

US-PET-0199-2020.



YOU SEE THIS INVISIBLE THREAT. YOUR CLIENTS DON'T.

HEARTGARD® Plus (ivermectin/pyrantel) has tools available to help you educate your clients about the real risks of heartworm disease. With HEARTGARD Plus, you're recommending:

- ✓ Safe and trusted heartworm disease prevention that's still #1 after 33 years¹
- ✓ The #1 dog-preferred, real-beef chew that makes compliance enjoyable for pets and pet owners²
- ✓ Highly effective control of five species of common intestinal parasites^{3,4}
- ✓ Prevention backed by the HEARTGARD Plus Satisfaction Guarantee



Get clinic support at **HEARTGARDClinic.com**

IMPORTANT SAFETY INFORMATION: HEARTGARD® Plus (ivermectin/pyrantel) is well tolerated. All dogs should be tested for heartworm infection before starting a preventive program. Following the use of HEARTGARD Plus, digestive and neurological side effects have rarely been reported. For more information, please see full prescribing information or visit www.HEARTGARDClinic.com.

¹ Data on file at Boehringer Ingelheim. ² Data on file at Boehringer Ingelheim. ³ Ascarid for Dog. Companion Animal Parasite Council. <https://capcvet.org/guidelines/ascarid/>. Accessed December 2, 2020. ⁴ Hookworms for Dog. Companion Animal Parasite Council. <https://capcvet.org/guidelines/hookworms/>. Accessed December 2, 2020.

HEARTGARD® and the Dog & Hand logo® are registered trademarks of Boehringer Ingelheim Animal Health USA Inc.
©2021 Boehringer Ingelheim Animal Health USA Inc., Duluth, GA. All rights reserved. US-PET-0808-2020-A



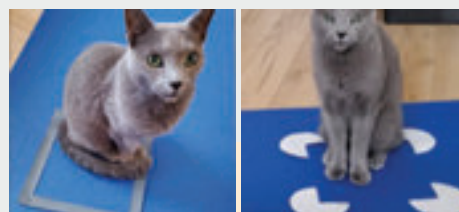
notebook

Canine Stress Linked to Owner-Pet Relationship

In a study published in *Scientific Reports*, researchers from Sweden's Linköping University found that a dog's relationship with its owner can impact its long-term stress level. Researchers measured levels of cortisol in the hair of a sample group of 18 hunting breeds along with their owners. A second group included 24 dogs from ancient breeds that are genetically more closely related to the wolf than other breeds. Owners were surveyed about their relationship with their pet, including their interactions and emotional attachment to the animal as well as the extent to which owning a dog gave rise to problems. Researchers related that the findings suggest a correlation between a relationship a dog has with its owner and the animal's stress level, and that this correlation differs between breeds.

"The results showed the owner's personality affected the stress level in hunting dogs, but, interestingly enough, not in the ancient dogs," says Lina Roth, PhD, senior lecturer in Linköping University's Department of Physics, Chemistry, and Biology. "In addition, the relationship between the dog and the owner affected the stress level of the dogs. This was the case for both types, but the result was less marked for the ancient dogs."

These new findings build on a study previously completed by the same research team that determined dogs in herding groups experienced long-term stress levels mirroring those of their owners.



Cats choose to sit in two-dimensional squares as part of a recent study, "If I Fits I Sits."

"If I Fits I Sits"

Gabriella Smith, a recent master's graduate from New York's Hunter College and animal cognition researcher, recently conducted a study that tested her hypothesis about cats and squares. She conducted experiments with pet owners at home and found that cats tend to sit inside two-dimensional shapes that only look like squares about as often as they'll sit inside a real square. Smith and her colleagues published their findings in *Applied Animal Behavior Science* in a study titled "If I Fits I Sits: A Citizen Science Investigation into Illusory Contour Susceptibility in Domestic Cats."

Ultimately, 30 owners completed the experiment in full, which involved six days of trials. Of these, nine cats were cooperative, meaning that they actually made a choice at least once during the trials. And out of the 16 times a choice was made, cats sat on the square eight times, the square-like illusion seven times, and the control illusion once. Smith reported that, given the drawbacks of citizen science projects such as participant attrition, future research would benefit from replicating this study in controlled settings.

She noted that "the major takeaways are that cats are susceptible to the Kanizsa illusion in a human-like way and are most likely attracted to 2D shapes for their contours (sides), rather than solely novelty on the floor."

QUOTE OF THE MONTH

“If people like you, they’ll listen to you, but if they trust you, they’ll do business with you.”

—Zig Ziglar, author, salesman, and motivational speaker

Biden Encourages Businesses to Take Advantage of the Employee Retention Credit

The Biden administration is encouraging businesses impacted by the coronavirus pandemic to take advantage of a potentially large tax break, the employee retention credit. The White House reports that more than 30,000 small businesses have claimed more than \$1 billion via the credit in 2021, and that the administration wants to further increase awareness of the program with guidance forthcoming from the Treasury Department.

The 2020 employee retention credit gives eligible businesses a refundable tax credit of 50% of up to \$10,000 in qualified wages paid per employee in 2020. That means eligible businesses can receive a credit of up to \$5,000 per employee for last year. In 2021, eligible businesses can deduct up to 70% of up to \$10,000 in qualified wages paid per employee per quarter, bringing the total annual amount of potential credit to \$28,000 per employee this year.

There are strict eligibility rules for which businesses can claim the credit, which is designed to focus on those hit hardest by the pandemic. The Treasury Department provides some guidelines in a recent publication, available at home.treasury.gov/system/files/136/ERC-COVID-Snapshot-5.7.21_full-text.pdf. Because of the complexity of the program and the rules that changed between 2020 and 2021, the Treasury Department advises that business owners consult with their tax advisors for specifics.

AVMA Names New Editor-In-Chief

The American Veterinary Medical Association (AVMA) announced that Lisa A. Fortier, DVM, PhD, a leading veterinary surgeon, researcher, and editor, will become the new editor-in-chief of the *Journal of the American Veterinary Medical Association* (JAVMA) and the *American Journal of Veterinary Research* (AJVR) effective June 28.

Fortier is currently the James Law professor of surgery, director of equine programs, and associate chair for research and graduate education at Cornell University and serves as editor-in-chief of *The Journal of Cartilage and Joint Preservation*, the official open-access journal of the International Cartilage Regeneration and Joint Preservation Society (ICRS). She previously served as president of the ICRS, where she also launched the society’s first journal, *Cartilage*.

She earned a PhD in veterinary medicine from Cornell in 1998 and her DVM from Colorado State University in 1991 and is a career-long member of the AVMA. Fortier’s research has received over \$20 million in funding from the National Institutes of Health, foundations, and other sources.

Fortier will succeed Kurt Matushek, DVM, MS, DACVS, who has served as editor-in-chief of JAVMA since 2009 and as associate editor since 1997. Matushek is transitioning into a new role, focusing on enhancing AVMA’s digital delivery of scientific news to the profession.



Lisa Fortier, DVM, PhD

AVMA Awards Veterinarians

The American Veterinary Medical Association recently presented awards to three veterinarians. The AVMA named Ontario Veterinary College professor Jason Coe, DVM, PhD, the 2021 Bustad Companion Animal Veterinarian of the Year. Jeff Boehm, DVM, DACAW, CEO of The Marine Mammal Center, received the AVMA Animal Welfare Award, and Valerie Fenstermaker, former executive director of the California Veterinary Medical Association, was presented with the AVMA Humane Award.



Jason Coe, DVM, PhD



Jeff Boehm, DVM, DACAW



Valerie Fenstermaker



Heartworm Above Average This Year

Heartworm occurrence is expected to be higher than average this year, the Companion Animal Parasite Council (CAPC) reports.

The group's 2021 Parasite Forecast and 30 Day Pet Parasite Forecast maps predict that instances of heartworm will be higher than average throughout 2021, especially along the Atlantic coast and Mississippi River, with increased risk in parts of California, Idaho, and Montana. Additionally, the risk for Lyme disease, transmitted by ticks, continues to expand southward and westward with "hot spots" expected in portions of Michigan and Ohio, heightened risk persisting in the Northeast, and movement into the southern states, including the Carolinas and Tennessee, CAPC reports.

"Because of the dynamic and ever-changing nature of parasites, we started providing our annual forecasts more than nine years ago," says the group's CEO, Christopher Carpenter, DVM. "Over the years, we've seen the risk for parasitic diseases continue to increase and expand into areas that have had historically lower prevalence. CAPC's 2021 Parasite Forecast is critical to alerting pet owners to the risks this year and reinforcing CAPC's recommendation that all pets need to be annually tested and protected year-round."

For more information, visit petdiseasealerts.org.

Online Tool Ranks Zoonotic Threat Potential

SpillOver, a new web application developed by scientists at the University of California, Davis, and contributed to by experts from all over the world, ranks the risk of wildlife-to-human spillover for newly discovered viruses. The university reports that SpillOver is the first open-source risk assessment tool that evaluates wildlife viruses to estimate their zoonotic spillover and pandemic potential. SpillOver was inspired by risk assessments used by banks and insurance companies. It creates a “credit-like” score for viruses by looking at key risk factors and using them to prioritize those viruses posing the greatest potential threats to human health for a watchlist. Users can customize the watchlist to their own circumstances, such as country of interest.

The tool is linked to a study published in the journal *PNAS*, in which the authors identified the most relevant viral, host, and environmental risk factors for virus spillover. Then the team ranked the risk from 887 wildlife viruses using data collected from a variety of sources, including viruses detected by the United States Agency for International Development Emerging Pandemic Threats PREDICT project, which UC Davis’ One Health Institute led from 2009 to 2020. The study’s coauthors include hundreds of individuals who supported the PREDICT Project in their countries and home institutions, as well as the Wildlife Conservation Society, EcoHealth Alliance, Metabiota, Smithsonian Conservation Biology Institute, and Columbia University’s Center for Infection and Immunity.



The risk of a zoonotic outbreak is high when wildlife, livestock, and humans are in contact, as seen here with primates and cattle exploring the grounds outside a residence in Ghana. A new online tool, SpillOver, aims to identify where such an event is most likely to occur.



A screen shot of the SpillOver web tool shows rankings for newly discovered viruses at most risk of spilling over from animals to humans.

FDA Helps Improve Availability of Vetmedin in the US

In response to a shortage of Vetmedin (*pimobendan*), the US Food and Drug Administration (FDA) reports that it does not intend to object to the temporary importation of Vetmedin capsules and Vetmedin chews from Canada, the United Kingdom, and Ireland to immediately increase the availability of Vetmedin in the United States. The FDA states that Vetmedin is a critical medication used to treat dogs with congestive heart failure due to valvular insufficiency or dilated cardiomyopathy, there is no FDA-approved alternative to Vetmedin, and this measure should help fill recent gaps in the supply of Vetmedin in the US.

Vetmedin capsules, chews, and chewable tablets all contain the same active ingredient, *pimobendan*. However, there are differences in the way these products are labeled. When imported Vetmedin is distributed in the US, it will be accompanied by a client information sheet for pet owners with detailed information explaining the key differences in labeling between the US-approved and imported products, including the differences in dosage forms, dose, and indications.

The FDA states that although the imported Vetmedin products have not been evaluated or approved by the FDA, they are approved in their countries of origin and subject to those countries’ regulatory standards, including adherence to good manufacturing practices. Compounded formulations of *pimobendan* have not been reviewed by the FDA for safety or effectiveness and may vary in quality and potency.



Studies Supporting Canine Cancer Prevention, Treatment Get Funding

The American Kennel Club Canine Health Foundation (CHF) has awarded more than \$850,000 in grants to 11 projects, each with a focus on canine oncology. The newly funded studies include:

“Use of CRISPR-based Genome-wide Approach for Identification of Vulnerabilities in Canine Oral Melanoma” (principal investigator: Maciej Parys, DVM, PhD; R(D)SVS and Roslin Institute, University of Edinburgh), which seeks to identify the genes specific for melanoma development and evaluate drugs targeting them; “Open-Label, Phase-2 Clinical Trial of Chlorambucil and Toleranib for Canine Mast Cell Tumors” (principal investigator: Kristen Weishaar, DVM, MS; Colorado State University), a clinical trial of combination chemotherapy for mast cell tumors; and “Continued Investigation into Tumor-permissive Collagen Signatures in Canine Mammary Gland Tumors: Development of Prognostic Markers and Targeted Therapies for Improved Outcomes” (principal investigator: Susan W. Volk, VMD, PhD; University of Pennsylvania), a continuation study on cancer-associated collagen networks and how they can be used to predict clinical outcomes, prevent cancer development, and inhibit residual tumor growth and metastasis following surgery.

“CHF’s recently awarded oncology grants utilize the latest technologies and knowledge of cancer biology to identify new and more effective ways to diagnose, prevent, and treat canine cancer,” says the foundation’s scientific review committee chair, Stephanie Montgomery, DVM, PhD, DACVP. “We are excited for the outcomes of this research, which will advance our understanding of cancer formation and improve cancer therapies for all dogs.”

New WSAVA Committee to Offer Veterinary Oncology a Global Boost

The World Small Animal Veterinary Association (WSAVA) reports that almost 50% of dogs over 10 years of age will develop cancer. Now, the WSAVA reports that, to raise awareness of the latest thinking in cancer therapy and promote best practice globally, it has created the WSAVA Oncology Working Group, with a team of expert members developing a set of easy-to-use, accessible global guidelines for veterinary oncology practice.

Members of the Oncology Working Group include specialists from around the world, including WSAVA past president Jolle Kirpensteijn, DVM, PhD, past president of the Veterinary Society of Surgical Oncology. The group is chaired by Argentinian veterinarian and oncology specialist Martin Soberano, DVM, who is based in Mexico City.

Soberano pioneered veterinary oncology in Latin America and is the founder and president of the Latin American Veterinary Oncology Society. Other members of the group include oncology specialists from the UK, Spain, Hong Kong, and Germany. The US member is Ann Hohenhaus, DVM, ACVIM, an oncology staff doctor at the Animal Medical Center in New York City.

Soberano said, “The WSAVA Oncology Working Group aims to overcome global variations in oncology treatment and raise awareness of the different types of tumors affecting companion animals. Many cancers in these animals also occur in humans, so we see an opportunity to improve the lives of both animal and human patients by raising standards of treatment for veterinary oncology patients.”

For more information, visit wsava.org.

A close-up, low-angle shot of a dog's face, looking upwards with its mouth open and tongue hanging out. The dog has light-colored fur with darker patches. The entire image is overlaid with a semi-transparent red filter.

AAHA CARES

We care about the veterinary profession, about excellent medicine, and about you. We care about high standards of care and service, constant growth and improvement, and veterinary professional wellbeing. We care about attracting the best and brightest into the profession, providing the resources you and your team need, and nurturing the unique community you have created for one another.

We care, and we know you care too. That's why AAHA is at the heart of better care for pets and their people.

**Start your
accreditation journey
at aaha.org/joinnow**

A close-up, macro photograph of a dog's nose and surrounding fur. The fur is a mix of light brown and tan, with some darker brown hairs. The nose is dark, almost black, and has a textured, bumpy appearance. The lighting is warm and soft, creating a sense of intimacy and focus on the animal's features.

Sniffing Out Coronavirus



Working Dogs Can Detect COVID-19

by Tony McReynolds

WHEN IT COMES TO DOGS, THE NOSE KNOWS. That's why, early on in the pandemic when COVID-19 tests were scarce and the United States' Centers for Disease Control and Prevention (CDC) was still tinkering with mask guidance amid a critical shortage of personal protective equipment, small groups of researchers around the world started searching for canine alternatives to traditional COVID-19 screening.

Using dogs to sniff out disease isn't a new idea. One study in 2004 found that dogs could identify patients with bladder cancer based on the smell of their urine. In a 2006 study, dogs were able to detect lung cancer by smelling patients' breath. And sniffer dogs have long been used at airports, sporting events, and border crossings to screen people for explosives and illegal drugs.

Would it be possible to train those same dogs to detect COVID-19? Researchers in the United States, Great Britain, France, and Finland, among other countries, thought the answer might be yes. They set out to develop a fast-casual version of a COVID-19 test using dogs to do the testing.

In Finland, Kössi, a Spanish Galgo, and Lucky, a golden retriever, were old hands (or noses) at sniffing out sickness. They'd previously been trained to detect breast cancer and prostate cancer based on scent profiles. Last spring, they were given a new challenge by researchers at the University of Helsinki (UH): sniffing out SARS-CoV-2, the virus that causes COVID-19.

After collecting urine specimens from family members of Finnish patients who had tested positive for COVID-19, lead researcher Anna Hielm-Björkman, PhD, associate professor of animal clinical research at UH, and her team trained the dogs to differentiate between positive and negative SARS-CoV-2 samples.

In an unexpected development, the dogs were able to detect the presence of SARS-CoV-2 even before patients

displayed any signs of illness; in this case, family members who gave urine specimens that either hadn't been tested or had previously tested negative. When the dogs picked up on the presence of the virus in those samples, the researchers asked the donors to test again using the standard methods.

In every case, the donors retested positive. But how far in advance of the retesting did the dogs know?

"We found that the dogs could see that a person was getting sick about four to five days before they got the disease," Hielm-Björkman said. "That was really encouraging because it means that the sensitivity of the dogs is better than the tests."

At the time, the COVID-19 tests typically returned results in two to three days, she added. The dogs, however, provided instant results.

In France, researchers were coming up with similar results to those of the Finnish team but chose to focus on a different bodily fluid. The French researchers trained dogs to scent SARS-CoV-2 in human sweat—specifically, armpit sweat.

Lead researcher Dominique Grandjean, DVM, PhD, HDR, head of the equine and carnivores clinical sciences department at the National Veterinary School of Alfort, said his team opted for the armpit samples because human sweat contains a strong chemical signal indicating a possible pathogen in the body, and it's easy to collect. It has the added advantage of ensuring that the dogs wouldn't be exposed to the actual virus, which, as far as scientists know, can't be transmitted through perspiration.

The team trained 18 experienced detection dogs, including 8 Belgian Malinois shepherds who'd previously been trained to successfully nose out explosives and colon cancer. The dogs were trained to sniff sweat samples taken from the armpits of 360 infected and uninfected participants.

For the training, jars containing samples of perspiration were placed in a line, and then funnels were inserted into the jars to allow the dogs to put their noses close to the sample. During the trials, each dog identified between 15

and 68 samples. Four of the dogs achieved a perfect score of 100%, while the rest had an accuracy rate between 83% and 94%.

As in Finland, the French dogs were able to indicate a positive result for two samples that supposedly came from people who were not infected by COVID-19. Those people were immediately retested by traditional laboratory methods, and both results came back positive. In both cases, the dogs were able to detect the virus a week before the people showed positive in the lab test.

The French study found that "COVID-19-positive people produce [underarm] sweat that has a different odor for the detection dog than COVID-19-negative people."

Overall, the dogs averaged a 96% accuracy rate. So how does that compare to standard tests?

According to Grandjean, "The accuracy of lab tests depends on the type of [test] and the quality of the sample." In their study, accuracy ranged from 70% to 95% for positive results and from 35% to 70% for negative results. "So it seems dogs are more accurate [than traditional lab tests] in our trial."

Meanwhile, scientists at the University of Pennsylvania's School of Veterinary Medicine were training dogs to detect COVID-19-positive saliva, urine, and sweat in a pilot training program launched in late April of 2020.

Like their European counterparts, the Penn researchers reasoned that it might be possible that dogs (in this case, golden retrievers) could provide a noninvasive, four-legged method to screen people in airports, businesses, or hospitals—places where testing poses particular challenges—without depleting limited human testing resources.

Ensuring the safety of the dogs in all three studies was a primary concern. At the time, it was unclear if or how easily dogs could become infected with SARS-CoV-2. There had been several reports of pets—including several dogs—testing positive for the novel coronavirus, although such reports were rare and remain so.

Cynthia Otto, DVM, PhD, DACVECC, director of the Working Dog Center at Penn Vet, led the study. She said

“We found that the dogs could see that a person was getting sick about four to five days before they got the disease.”

ANNA HIELM-BJÖRKMAN, PHD

keeping the dogs (and handlers) safe from infection was top of mind, and the team based their safety protocols on the latest science-based guidance from the American Veterinary Medical Association and the CDC. According to the guidance at the time, Otto said, there was “no evidence that animals play a significant role in spreading the virus that causes COVID-19. That said, we’re taking all precautions to minimize risk and monitor for exposure.”

The most important precaution taken was that the virus used in the Penn trial was inactive, and the samples were kept in devices that prevented access, so there was no chance that dogs or humans would be exposed.

In Finland, Hielm-Björkman said protecting the dogs’ health was one of the main reasons they used urine samples. “We’ve done enough research to say that dogs can’t get [COVID-19] and their handlers can’t get [COVID-19] from exposure to urine.”

So what’s next for COVID-19-sniffing dogs?

Grandjean said that, following the successful results of their most recent trials with patients at the Greater Paris University Hospitals, “the French Ministry of Health wants to deploy dogs throughout the country.” Grandjean’s team is currently setting up several field tests at airports, shipping ports, and public events to figure out how that’s going to work logistically.

Speed is going to be an important factor, Grandjean added. “We are also working . . . on a way to train the dogs faster.” Currently, training an experienced sniffer dog to detect COVID-19 takes six weeks.

Although results for most of the studies aren’t in—Grandjean’s team has three papers in review and hopes to publish soon—sniffer dogs trained by his team have been deployed to detect COVID-19 in a number of countries,





There's still a lot of work to be done before we can reliably count on dogs to screen live humans for COVID-19.

including Lebanon and the United Arab Emirates. In Florida, sniffer dogs are screening fans coming to Miami Heat basketball games.

Are we jumping the gun? Maybe.

Otto said that based on her team's preliminary findings—their proof-of-concept study was published last April in the journal PLOS ONE—it's uncertain how long it will be before dogs can reliably be counted on to accurately screen people for COVID-19. "It depends on the strategy for how people are screened. They may be able to reliably screen samples from people if they're trained on sufficient numbers of both positive and negative samples and tested in a double-blind fashion on novel samples at regular intervals."

There's still a lot of work to be done before we can reliably count on dogs to screen live humans for COVID-19, Otto said. "We know there's a learning curve for dogs to transition from [COVID-19] samples to screening humans. The next biggest challenge will be the availability of dogs and handlers to do the screening."

As for deploying Penn's COVID-19-detection dogs before all the facts are in, Otto had reservations. "We would not feel comfortable deploying dogs from our program without clear documentation of their sensitivity and specificity in double-blind testing with novel samples in the operational setting." She said she'd also like to see plans for regular, ongoing training sessions for both dogs and their handlers, "just like is done with bomb and drug dogs."

Which begs the question: How do the dogs do it?

Hielm-Björkman freely admitted she has no idea. "We're really not sure what they're detecting at this point," she said. Possibly they're scenting something people with the virus are metabolizing in their urine, but that's speculation. All she knows for sure is that it seems to be working so far—and better than any machine. "They're not even comparable," she said. "There's no machine on Earth that can even come close."

Hielm-Björkman also noted that additional research is needed to confirm whether the dogs are specifically detecting the presence of SARS-CoV-2 instead of another virus, but she said the preliminary results were very promising—so promising that the Finnish government deployed COVID-19-sniffing dogs at the Helsinki airport last September.

In addition to helping with the fight against COVID-19, Hielm-Björkman sees amazing potential for employing sniffer dogs during future pandemics to detect coronavirus at border crossings and in concentrated living facilities like nursing homes.

Grandjean has no problem deploying dogs trained by his team to act as prescreeners, with people who "smelled" positive undergoing traditional lab testing afterward. "The dog is reliable day after day, people can be sniffed without any intrusion, [and] it does not cost anything [besides] the dogs' training and kibble." Moreover, he said, dogs are ideal for smaller communities and countries that can't afford mass testing.

And despite a lack of peer-reviewed research with definitive results, Grandjean remains committed to the idea of COVID-19 screening via sniffer dogs.

His reasoning is simple: "It works." ✖



Tony McReynolds is AAHA's *NEWstat* editor.



— THE HEART OF —
better care
FOR PETS
AND THEIR PEOPLE

AAHA accreditation provides veterinary practices with unique resources and a supportive community while driving excellent medicine, thriving teams, and successful practices.

Drop by **WVC booth #1924** to learn more.

aaha.org



Keep
your clients
coming back,
for life

IDEXX Preventive Care

Everything you need to implement diagnostics,
for a lifetime of healthy relationships

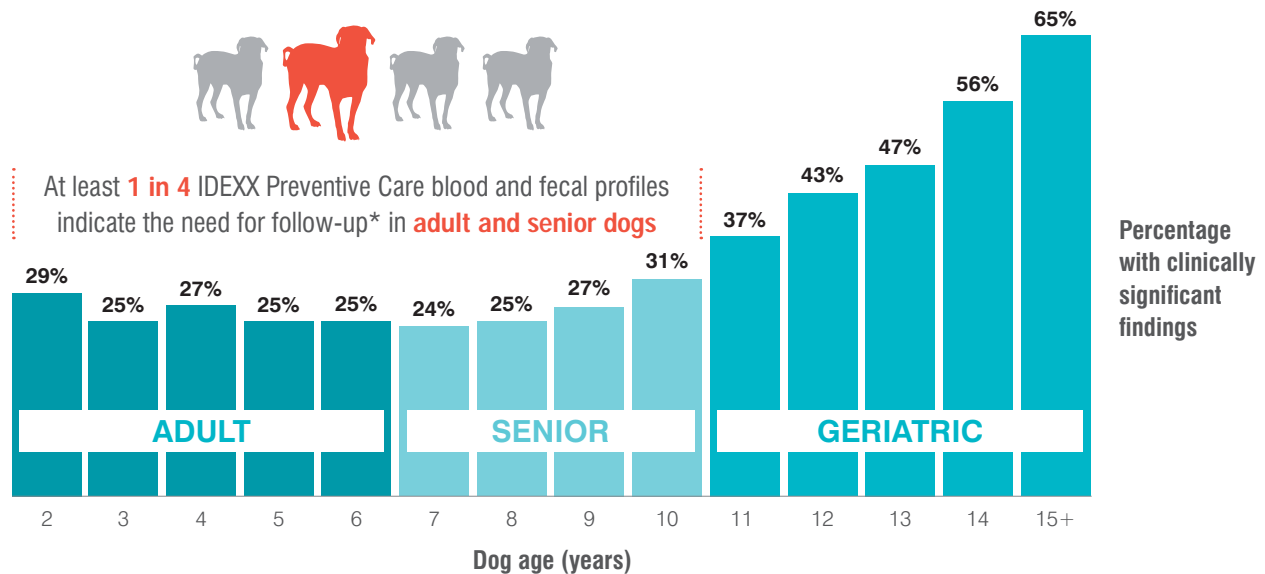
- ✓ IDEXX Preventive Care profiles
- ✓ Tools to get clients to yes
- ✓ Dedicated IDEXX team for implementation

Discover more at
idexx.com/PreventiveCare



New evidence supports the value of preventive care profiles on all adult dogs

Preventive care profiles aren't just for senior and geriatric patients



Dogs as young as 2 years of age had clinically significant findings based on results of preventive care bloodwork and fecal testing¹

Of the nearly 30,000 canine profiles included in this analysis, there was little variation in the rate of clinically significant findings between adult dogs and senior dogs.

The study was based on an analysis of IDEXX Preventive Care profiles (including the following categories: Chem 22 including the IDEXX SDMA® Test, IDEXX CBC testing with reticulocyte parameters, the Lab 4Dx® Plus Test, and Fecal Dx® antigen testing) run as part of wellness visits. While the number of clinically significant findings for each of these testing categories varied by age, all categories were important for adult, senior, and geriatric dogs.

These results are similar to a previous analysis that included cats as young as 2 years²

The previous analysis from more than a quarter of a million wellness visits that included a chemistry profile with an IDEXX SDMA® Test and a CBC, revealed significant findings required follow-up in:

- 1 in 7** adults (cats aged 2–8 years; dogs aged 3–6 years)
- 1 in 5** seniors (cats aged 9–13 years; dogs aged 7–10 years)
- 2 in 5** geriatrics (cats aged 14+ years; dogs aged 11+ years)

Routine preventive care testing has distinct medical benefits

There is ample evidence to support routine preventive care visits that include diagnostic testing. Results of routine bloodwork and fecal testing help veterinarians detect diseases and conditions, leading to earlier interventions that help patients of all ages live healthy lives for as long as possible. Once a veterinarian has baseline values, she/he can monitor trends and, if necessary, create individualized treatment plans. If no abnormality is detected, veterinarians and staff can—and should—celebrate the good news with clients. By communicating the value of every test result, practices reinforce the importance of routine wellness checks and the central role that clients play in the health of their pet. It's a win-win!

Review preventive care data and case studies at idexx.com/1in4

*Due to "clinically significant findings," which would indicate the need for follow-up, further consideration, or a change in action by the clinician. Clinical significance based on rules determined by an IDEXX veterinarian panel.

References

1. Data based on analyses of **29,795** canine wellness profiles (Chem 22 including IDEXX SDMA® Test, IDEXX CBC testing with reticulocyte parameters, the Lab 4Dx® Plus Test, and Fecal Dx® antigen testing) associated with wellness visits; testing performed at IDEXX Reference Laboratories on July 13, 2016–February 28, 2019. Represented U.S. regions by proportion of included profiles: Northeast (32.0%), South (41.3%), Midwest (17.4%), West (7.6%), and region not reported (1.7%).

2. Data on file at IDEXX Laboratories, Inc. Westbrook, Maine USA.

© 2019 IDEXX Laboratories, Inc. All rights reserved. • 2233450-00 • All ®/TM marks are owned by IDEXX Laboratories, Inc. or its affiliates in the United States and/or other countries. The IDEXX Privacy Policy is available at idexx.com.





Sticker Shock

The Cost of Building During Uncertain Times

by Maureen Blaney Flietner

RISING PRICES, PRODUCT UNAVAILABILITY, DELIVERY DELAYS—it's been a wildly uncertain time for veterinary practices in the midst of new hospital projects or major remodels.

During this fluid situation, architects and contractors offered their perspectives while practices shared their experiences and advice.

Cost Increases Hit the Fan

"By May 2021, we are really seeing cost increases hitting the fan, and they're pretty extreme," said Heather Lewis, AIA, NCARB, partner at Animal Arts, Boulder, Colorado.

"Most people know that wood prices are way up. The

problem is that while the US is ready to go, some of the world is not. Good old supply chain issues, labor for mills, and, frankly, part of it is drought and fires as well. A triumvirate—global climate change, global pandemic, and labor shortages—all came together on wood."

Steel also has been affected, she said, with not only costs up significantly, but unacceptable wait times for such products as open web steel joists often used to build roof and floor systems.

"We have a veterinary project right now (start of May) with the permit in hand ready to start construction, but the steel joists won't arrive on site in any timely fashion," she said. "A choice was to change from joists to

wide flange steel beams. That is going to increase costs by a significant amount but still cost less than a delay in construction.”

Another issue, although she expects it to be short-term, is plastics. Last winter’s massive freeze in Texas damaged petrochemical manufacturers, affecting production of plastic—and subsequently paints—among other products.

Sean Campbell, president of CMP Inc., in-house construction division of BDA Architects, Albuquerque, New Mexico, also has seen delays in receiving products and cost increases in lumber, electric wiring, and steel.

“Commercial-grade wood doors that typically had lead times of 8 weeks now are at 16 to 17 weeks. It’s the same thing with windows and mechanical units. I think everyone in construction is bracing for additional costs,” said Campbell, adding that, as gas and diesel prices rise, he expects other costs will also increase. “Labor, too, has been an issue, especially at the lower pay scale.”

So far, CMP Inc. has not had to get change orders because of rising costs. However, “just to be on the safe side” for the rest of 2021 and for 2022, the company will increase costs minimally but again allocate a separate contingency for rising costs of material and labor.



Dale Diener,
Apex Design Build

Dale Diener, Director of Pre-Construction for Apex Design Build, Rosemont, Illinois, noted the problems of supply chain disruptions and uncertainty around logistics because of the pandemic.

Many countries ceased production of essentials

at differing points throughout 2020. Distribution encountered challenges, explained Diener. Lumber prices slumped, then plummeted through mid-June 2020, and then have risen and continue to rise because of new housing construction, more DIY projects during lockdown, and US restaurants building outdoor dining accommodations. In addition, Canada exports less lumber to the US since the US raised import duties on Canadian lumber a few years back, he explained.

Supply and demand have driven up US steel price increases, he said, as building and infrastructure construction, the automotive industry, and the appliance category flourish.

Because of COVID-19 transmission concerns, building operators and companies have had to reduce the number of people within a space. That has led to late shipments with extended lead times seeing historic highs, he said.

For Apex, all of this has meant securing materials earlier in the design phase, searching farther abroad to states that may not have experienced as significant of supply shortages, and bulk buying, explained Diener. This insulates clients from cost increases they would experience in a more traditional bid-build approach.



“The best lesson I have learned is to continue to keep the bigger picture in mind and to be flexible.”

AMANDA GIGLER, DVM, ANKENY ANIMAL AND AVIAN CLINIC

Apex, he said, has been able to stick to the numbers it provides clients early on by keeping in close communication with its network of suppliers and vendors to ensure it receives accurate up-to-date pricing.

Practices Show Their Flexibility

How has all of this instability affected veterinary practices?



Neal NeSmith, CCIM,
Southern Veterinary Partners

Neal NeSmith, CCIM, Real Estate Development Lead for Southern Veterinary Partners in Birmingham, Alabama, said that at the start of the pandemic, their projects under construction continued. However, projects still in design were paused while COVID-19's impact was assessed. By the end of

June 2020, the group saw that demand for veterinary services continued strong, and they moved forward.

“Plan review, permitting, and inspections at the beginning of the pandemic were the most significant delays we experienced. I believe it was a challenge for municipalities to figure out how to keep projects moving forward while ensuring the safety of employees. For most municipalities, plan submittal and review became an

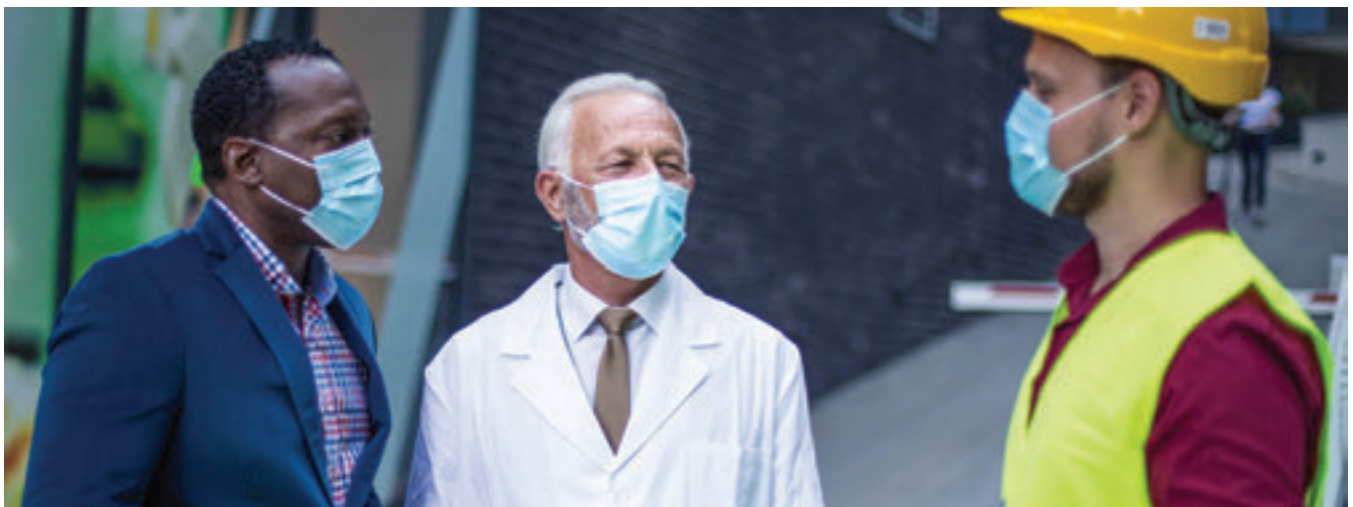
entirely digital process. As the pandemic progressed, we began experiencing significant lead times in building materials, specifically, stainless steel. Lead times for cages, wet tables, etc., began to be 8 to 10 weeks instead of the usual 2 to 3 weeks,” said NeSmith.

“If the pandemic has taught us anything, it is flexibility. Processes for design, permitting, and construction were turned on their heads for a period of time. People are resilient, and everyone came together to make it work during such an unusual period,” he said.

In addition, NeSmith noted that “many hospitals are weighing the costs and timing of starting projects now due to rising material and labor costs. We are so committed to better hospitals for our teams and serving our growing patient base—we do not have time to wait and see. If you are waiting to start a project, be prepared to wait. In my opinion, higher material and labor costs are here to stay for the foreseeable future.”

In Ankeny, Iowa, Ankeny Animal and Avian Clinic completed one addition last fall, is renovating existing space, and began its second addition in June, according to Amanda Gigler, DVM, co-owner and medical director.

“Our clinic has grown from 18 to 34 employees within the past few years, so we are creating more exam rooms,



“If the pandemic has taught us anything, it is flexibility.”

NEAL NESMITH, CCIM, SOUTHERN VETERINARY PARTNERS

more office space, and larger treatment and surgical spaces, as well as a dedicated dental alcove. The first addition added exam rooms. The second addition will contain a new surgical space, more kennels/runs, a new grooming space, office spaces, a cat room, and an ultrasound room.”

Originally planned for groundbreaking in April 2020, the project was delayed to assess the COVID-19 situation. But it became clear by the start of April that the practice—with six exam rooms—was running out of space, especially with the surge of appointments.

“We ended up hiring six people within four weeks, which only caused more crowding. So with the need for more exam rooms as well as more space to provide work stations and just more room in general, we decided we needed to forge ahead with the expansion ASAP. As we became busier than ever, we decided this was doable,” said Gigler.

There were other surprises as well: a delay in receiving furniture for the break room, a delay in the availability of material to replace the roof membrane on the entire existing roof, and a 35% to 40% increase in the expected budget.

“The best lessons I have learned are to continue to keep the bigger picture in mind and to be flexible. The delay in planning has caused some major anxiety as we are pressed for space, but the added time has also allowed for us to recheck our plans and to explore options we may not otherwise have explored,” she said. “Our furniture being delayed for more than eight months ultimately encouraged me to consider other options and look at other sources for furniture. I ended up finding sofas that I not only liked better than the original ones, but that also ended up being a better and more versatile fit for the space.”

Gigler also noted that “as delays and other difficulties have surfaced and as costs have increased, it has been tempting to revisit our original plan and want to downsize the expansion. However, only five years ago, we had undergone an addition we kept on a conservative scale but have already outgrown. Keeping our larger vision in mind for a calm, modern, roomy clinic that will accommodate future growth has been key, and so far, we have not been disappointed. Our first addition is looking great and has become a space our staff is proud of. We



Tips from the Professionals

Design and building professionals offered these tips for those thinking about building or remodeling.

Sean Campbell:

“The driving force is the interest rates, so even if materials costs are going up 20%, 30%, 40% over the life of a loan, it’s going to offset that.”

“Depending on when construction will start on a project, consider adding 5% to 10% for materials and labor costs to the typical 10% contingency fund.”

Dale Diener:

“Good design decisions made early can create efficiencies in the long run, often in the form of cost savings. Consider material substitution, which can prevent cost overruns and blown schedules.”

“If planning for a project post-pandemic, consider altering the flow of the hospital, starting with a more effective curbside patient pickup/drop-off. Look at strategic positioning and design of trash cans, wipes, and hand sanitizer throughout the practice. For the new norm, rethink corridor widths, temporary barriers, placement and size of workstations, telemedicine areas, storage for PPE, and staff changing/locker rooms.”

Heather Lewis:

“Don’t put off a project even though there is this ridiculousness. It will not get better for a while. You need your building to make money in your career. You may have to change size or design. Jump in with the best people, someone who can tell you what is going on, and get a good contractor on board during the design phase.”

“With the crazy supply chain issues, focus on products that don’t have to be shipped from overseas.”

“Realize things happen. As my son’s teacher has repeated for the past year: ‘calm and flexible.’ There are ways to get things done, just maybe not the way you thought.”

can't wait for the entire clinic to embody our vision."

Stafford Veterinary Center in Stafford Springs, Connecticut, is completing a major remodeling project in August to create its new home.

According to Judith Mordasky, owner and hospital administrator, the practice will move to an iconic 200-year-old Victorian house, addition, and separate building totaling 23,000 square feet that had been known locally as Bakers Furniture Store.

The facade has been kept but the inside has been remodeled to feature five exam rooms, treatment room, comfort room, radiology, three surgical suites, ICU, isolation, dental suite, retail, kennels, grooming area, meeting areas, and offices.

On the Rise

Gordian, which provides up-to-date construction estimating costs through its RSMeans data, provided these snapshots of price increases:

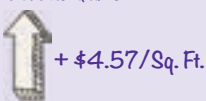


Retail lumber of all sizes saw price increases of 55% to 65% between January 1 and May 6, 2021.



As of May 25, 2021, the price of structural steel had risen 91% since the fourth quarter of 2020. Forty-five percent of that increase was in the first quarter of 2021.

\$172.38/Sq. Ft.
2022: 1st Quarter



\$167.81/Sq. Ft.
2021: 3rd Quarter

For the national average per square foot cost for a veterinary hospital, RSMeans Data Online's square foot estimator forecasts a change from \$167.81 for the third quarter of 2021 to \$172.38 in the first quarter of 2022.

Project surprises included a structural problem that needed to be remedied; quotes 26% to 30% higher than at the start because of cost increases in supplies, especially wood, wiring, and metal; longer wait times; and limited availability of some products such as insulation.

"Our decision to build started way before the pandemic; however, the pandemic brought about many changes in the daily workload of each doctor," said Mordasky. "Initially we decided to build to make room for the second generation and the increased client base. Now it is imperative we have more space as we see many other practices' patients because they are unable to get in with their regular veterinarian."

"Being business owners, entrepreneurs, and parents for the last 40 years, we have learned quite a bit. The one thing that never changes as a business owner is the unknown—it is always around the corner. We always take risks. We always must be prepared to change with the times. The advice we would give to other owners thinking about expanding during uncertain times is this: Always move forward. Reach for it! Our pets will always be there, and they will always be an important part of our families. Do your due diligence, know your market and client base, and do not be afraid to take a risk," Mordasky noted.

Fox Run Veterinary Hospital in Colorado Springs, Colorado, expects to move its hospital into its new location on October 23 after a particularly eventful process.



Jessa Kocher, DVM

Jessa Kocher, DVM, co-owner, had worked at a private practice for several years but left when it sold to corporate interests. She decided to partner with a friend, a luxury homes real estate agent, to create their own hospital. They designed it, found land, got preapproved

for a loan, and worked with an architect. Then in February 2020, COVID-19 hit and everything closed down.

Fortunately, Kocher had built up a good reputation among clients. They followed her when she began her own practice in space leased from an emergency



“Why wait? Do it! Today’s veterinary market is moving fast.”

HAL BOND, CEO, AAHA-ACCREDITED METROPOLITAN VETERINARY HOSPITAL

hospital. Eight months after opening, she was able to hire an additional full-time doctor.

Checking back with their bank to move on the building project, Kocher found that the rules were now stricter. An appraisal had come in low because there were no comparables of hospitals that had sold in the previous few years.

“After working with us for two years and right before we were to break ground in November 2020, the bank dropped us,” said Kocher. Fortunately, she said, they checked with Live Oak Bank of Wilmington, North Carolina, a lender specializing in financing veterinary practices.

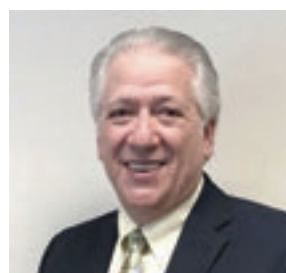
“They got us to closing and scheduled our groundbreaking for March 2021. In addition, as we have been faced with increasing costs for materials, the bank has rearranged the loan frequently to make it work. Each week, prices have been changing a bit. However, the biggest jump was pre- to post-COVID: \$2.6 million to \$3.2 million.”

Now she witnesses daily progress on the 5,000-square-foot hospital and is already planning a phase two of 2,600 square feet. The hospital will offer a full-service surgery suite, dentistry, exam rooms, comfort room, conference room, self-wash dog station, and luxury cat boarding.

“This year, life has required a lot of pivoting,” she said. “I don’t want to stress about my job. If you have stress, you’re doing something wrong.”

AAHA-accredited emergency and specialty care

Metropolitan Veterinary Hospital in Copley, Ohio, planned to open its second location this summer.



Hal Bond, Metropolitan Veterinary Hospital CEO

According to Hal Bond, CEO, the practice began planning for the new hospital in 2019. Metropolitan purchased a 40,000-square-foot building on 5 acres in Cleveland in 2020 and has begun construction to turn 32,000 square feet of the space into an emergency and specialty veterinary hospital.

The project experienced rising construction costs, said Bond, but he noted that “all bids are locked in for pricing with some exceptions due to COVID-driven price increases and shortages. Whenever you build, you always add some extra for cost overruns and problems. If your budget cannot handle a 15% to 20% increase for things that pop up, wait until you have the money before beginning.”

For those considering a project, Bond advised that they “grow or be left behind. Why wait? Do it! Today’s veterinary market is moving fast. In order to make more money later, you must grow in your market now. If others are and you don’t, then you will lose new client opportunity.” ✱



Maureen Blaney Flietner is an award-winning freelance writer and illustrator living in Wisconsin.

Not sure

WHICH

vendors

to use?



Explore

AAHA's Savings Programs!

You'll find big-name companies you buy from already offering discounts, preferred pricing, and special deals just for AAHA members.

Learn more at
aaha.org/savings.



2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats

Executive Summary

Note: This Executive Summary provides selected highlights of the guidelines. It is not a replacement for reading the guidelines in their entirety.

by Constance Hardesty, MSc

The *2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats* discuss the components of a systematic approach to nutritional management of dogs and cats. These guidelines update and complement previously published but still relevant nutrition-related guidelines produced by the American Animal Hospital Association, the *2010 AAHA Nutritional Assessment Guidelines for Dogs and Cats*, and the *2014 AAHA Weight Management Guidelines for Dogs and Cats*.

For tables, figures, and the box mentioned in this executive summary, see the *2021 AAHA Nutrition and Weight Management Guidelines*.

Overview

The World Small Animal Veterinary Association (WSAVA) recommends nutrition as the fifth vital assessment to optimize the health and well-being of pets. The AAHA Advisory Panel endorses this recommendation.

Nutritional management is a central component of a complete healthcare plan for canine and feline patients and is integral to a pet's longevity and quality of life. The positive impact of proper nutrition on health and morbidities such as chronic kidney disease (CKD), diabetes mellitus, and osteoarthritis is well accepted.

To help practices implement a comprehensive and systematic nutritional program, these guidelines address recommendations and implementation in three broad areas: nutritional assessment and recommendations, client communication, and teamwork.

Read the Full Guidelines

Read the full text of the *2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats* online at aaha.org/guidelines.

A nutritional assessment including body condition score (BCS) and muscle condition score (MCS) of canine and feline patients is the initial step. The assessment should be performed on a regular basis throughout all pet life stages, ideally at each exam visit. Based on the assessment, patient-specific nutrition recommendations can be made. These recommendations often have specific therapeutic goals, such as weight loss or dietary support of chronic or acute disease conditions.

Client attitudes toward pet nutrition are often based on individual biases and strongly held beliefs. For this reason, effective client communication is important in achieving adherence with dietary recommendations. To ensure that the client has a positive perception of nutritional recommendations, nutrition conversations should focus on both the message and the communication process, taking into consideration the client's views on topics such as pet food choice, dietary rewards, and weight control.

Integrating nutritional management as a vital part of the practice's culture requires the expertise and commitment of the entire veterinary team.

How to Perform a Complete Nutritional Assessment

The nutritional assessment is an iterative process that requires repeated assessment over the animal's lifetime. The assessment should evaluate factors in three broad categories: animal-specific, diet-specific, and feeding management (Figure 1). Several factors in these categories (e.g., adverse food reactions, nutrient imbalance, competitive eating) are listed in the guidelines' Table 1.

A nutritional assessment comprises two parts: a screening evaluation for all pets and an extended evaluation as needed.

Screening evaluation

A screening evaluation should be performed on every pet at every visit. The screening (see Figure 2) should evaluate the pet's nutritional history, environment, activity level, body weight (BW), BCS, and MCS, followed by a complete physical exam.

To improve accuracy, pet owners can complete the diet history at home, and it can be checked by practice team members.

If nutritional risk factors are identified, an extended evaluation is recommended.

The guidelines offer helpful information and pointers to online tools, including components of a comprehensive nutrition history such as main meal, table food, supplements, and so on (Figure 5); links to diet history forms (Table 7); the 9-point WSAVA BCS chart (Figure 3); and the WSAVA MCS chart for dogs (Figure 4). Links to canine and feline BCS and MCS tools appear in footnotes 7, 8, 12, and 13. Table 2 correlates BCS scores to body fat and body weight. And clinically relevant nutrition terms are defined in Table 3.

Body fat index, girth assessment, and fecal scoring also may be useful. Limb girth, an emerging assessment, may prove valuable.

For hospitalized patients, a nutritional assessment should be performed on admission and at least daily, and feeding orders should be written and assessed daily. BW needs to be checked at least daily to assess hydration status. The guidelines discuss what information to gather about hospitalized patients and what topics to cover in their feeding orders.

Disclaimer

These guidelines were prepared by a Task Force of experts convened by AAHA and subjected to peer review. The guidelines are not an AAHA standard of care nor do they dictate an exclusive protocol, course of treatment, or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to each practice. Veterinarians must base their decisions on the best available scientific evidence in conjunction with their own knowledge and experience. These guidelines support the veterinary medical profession's bioethical obligation to its patients and their owners by giving clinicians the practical means to advocate for pets who cannot represent themselves. The full guidelines were published in the *Journal of the American Animal Hospital Association* in July 2021.



A successful nutritional program relies on assessment, recommendations, communication, and teamwork.

Nutritional risk factors

The initial screening evaluation may reveal risk factors that require an extended evaluation. The guidelines and Table 4 refer to several risk factors related to life stage, medical/dietary history, and physical examination, such as lactation, inadequate housing, or unexplained weight change, respectively.

Extended evaluation

The extended nutritional assessment is an opportunity to gather a more comprehensive nutritional history and pursue clinical diagnostics as indicated by abnormal physical exam findings, areas of concern in the nutritional history, and nutritional risk factors. Table 5 lists some diagnostic tests suitable for an extended nutritional assessment. Medical conditions or diseases may benefit from nutritional interventions (see Table 8).

How to Create Individualized Nutritional Recommendations

Apparently healthy patients maintaining ideal weight may not require major diet adjustments unless a nutritional risk factor is identified.

When making new feeding recommendations, consider the feeding plan, gradual adjustments to the pet's diet, and feeding management and environmental factors such as food-dispensing toys.

The guidelines devote special attention to areas of interest such as whether a diet is complete and balanced, the overall quality of a commercial diet and its feeding instructions, and a calculation to determine suitable caloric intake (see Box 1).

Recommendations for hospitalized patients address caloric intake, support for anorexic or hyporexic patients, medication support, and protocols that promote enteral nutrition over parenteral nutrition. Because of the risk of food aversion and aspiration, oral syringe feeding is no longer recommended.

Obesity prevention and weight reduction

The guidelines devote significant attention to obesity prevention, weight reduction, and therapeutic diets to promote weight loss. Proper weight management will support the patient's overall quality of life, may extend lifespan, and can help to prevent or mitigate comorbidities.

Potential risk factors for obesity range from breed predisposition, age-related metabolic changes (for example, lower energy requirements in dogs and reduced digestibility in cats), and health conditions (spay, neuter, hypothyroidism), to feeding and exercise patterns (including clients' underestimating pets' caloric intake and overestimating their exercise). A lengthy list of risk factors appears in Table 6.

To prevent obesity, compare reported intake against calculated requirements based on ideal BW and make downward recommendations. Reassess and adjust as needed at subsequent visits.

Once an animal has gained excess weight, appropriately inform the owner, gauge their willingness to institute a weight loss program, and offer guidance and support for the duration of the program. The process is presented in full in the *2014 Weight Management Guidelines*, which readers are encouraged to consult for more complete information.

Recent data suggest mean caloric intake for weight loss over a 12-week period is 63 ± 10.2 kcal/kg^{0.75} in dogs and

52 ± 4.9 kcal/kg^{0.711} in cats. The same principles regarding feeding plans for healthy, appropriate-weight cats and dogs apply for weight-loss plans. The major difference is adjusting MER calculations for reduced calorie intake; a calculation is given in Box 1.

The guidelines recommend therapeutic weight loss diets fortified with nutrients for patients undergoing significant calorie restriction for weight loss. High-protein diets can spare lean mass with calorie restriction. Protein and added fiber can promote satiety, while added fiber will also reduce caloric density. High-moisture diets for cats may increase satiety.

Feeding management and activity plans are essential parts of a weight-loss effort. Activity plans are discussed in the *2014 Weight Management Guidelines*. A veterinary rehabilitation practitioner can help to design an exercise plan (see Table 7).

The *2014 Weight Management Guidelines* provide options for long-term monitoring and maintenance, which are often the most difficult aspects of a weight loss program. In addition, the 2021 guidelines offer some tips for helping clients commit to feeding restrictions.

Therapeutic diets not related to weight loss

When the nutritional assessment indicates a patient may benefit from a purpose-formulated therapeutic diet, the clinician needs to focus on specific nutrients of concern. The guidelines outline an approach for this, and nutrients of concern for selected diseases and conditions appear in the lengthy Table 8.

For diseases in which diagnostics and staging affect nutrients of concern (e.g., CKD) or when patients have multiple disease conditions and/or additional feeding or diet requirements, consider all nutrients of concern before selecting a diet.

Communicating with clients

Communicating about nutrition may require difficult and complex conversations. Success involves managing the message, the communication process, and issues related to perception; seeing past your personal biases to acknowledge (while not accepting) the client's perspective; and enlisting every member of the practice team to reinforce core messages.

The guidelines offer insights and advice about key milestones in the communications process, including:

- Gathering a comprehensive nutrition history
- Communicating a nutrition recommendation in six steps
- Managing challenging nutrition conversations
- Navigating the emotional connections
- Inrateam communication

An effective, comprehensive nutritional history begins with open-ended questions, moves on to more focused questions, and ends with close-ended questions (see Table 9). A good open-ended question is, "Tell me your thoughts on his/her current diet."

A common obstacle to successful nutrition recommendations is that the recommendation does not align with the client's own goals or beliefs. Developing a nutrition recommendation is an iterative process in which it may be necessary to return to the nutrition history to gather additional information to better align a recommendation with the client's goals and beliefs (see Figure 6).

Communicating a nutrition recommendation involves initiating the recommendation, exploring all options with the pet owner, educating them about each option, making a clear recommendation, soliciting feedback to modify the recommendation, and planning follow-up actions.

The guidelines even suggest words to use or avoid in communicating with clients; for example, avoiding the word "treat" and questions beginning with the word "what."

Clients may suspect the veterinarian has a financial motive in recommending a commercial pet food. To allay their suspicions, divide the recommendation into two parts. First, recommend a nutrition change as a preventative or to address a health concern. Second, if required, recommend a product-specific commercial diet to support the healthcare decision. Separating these recommendations teases apart the question of motivation (business versus healthcare) behind an overall nutrition recommendation.

Pet feeding is an emotional topic that requires careful navigation. The guidelines discuss clients' emotional

connection to feeding choices and explain how the veterinary team can work with clients to understand and accept nutrition recommendations.

Weight is not the only sensitive topic that comes up in conversations about pet nutrition. Other challenging topics include wet versus dry food, unconventional food choices, and use of nutraceuticals.

Other Timely Topics of Interest

Timely topics that are briefly discussed include diet-associated dilated cardiomyopathy; home-prepared diets; raw protein diets; age-specific and breed-specific diets; and microbiome, prebiotics, and postbiotics.

The Advisory Panel has provided current information on nutritional topics of interest. However, as dietary information is an evolving science, practitioners should make note of new developments that postdate the guidelines.

A Team Approach

Integrating nutritional assessments requires a committed and engaged team. Veterinary technicians are poised to lead the initiative, and group effort increases efficiency by distributing workload and delivering an integrated, cohesive message.

The effort begins with obtaining the diet history before the appointment, proceeds through assessment and recommendation, and continues with follow-up and accountability. The guidelines lay out step-by-step suggestions for involving the client service team, veterinarian, and veterinary technician.

Some ways to fine-tune an accountability program include pairing each patient with a specific team member, setting rules for the assessment and accountability program (e.g., assessment appointments should be scheduled separately from wellness or preventive care appointments), offering a small gift to recognize the client's investment in supporting their pet's optimum health, and recognizing that clients involved in a pet weight-loss program enter the practice more frequently, providing multiple opportunities to address other medical issues.

Conclusion

A unified approach to implementing an effective nutrition program will promote optimal pet health, therapeutic success, a strong veterinarian-client-patient relationship, and a long-term client association with the practice. ❀



Constance Hardesty, MSc, is a writer and freelancer living in Colorado. She is a former editor-in-chief at AAHA.

At a Glance

The 2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats provide step-by-step methods for performing a complete nutritional assessment and preparing an individualized nutritional plan as well as communication tips that promote optimal adherence to the dietary recommendations and resources for harnessing the expertise and commitment of the entire practice team. Specifically, the guidelines:

- Describe how to perform an individual, breed-specific, evidence-guided nutritional assessment for canine and feline patients
- Provide recommendations for diagnosis, treatment, and management of under- or overweight pets
- Provide a comprehensive list of nutrients of concern for specific health conditions
- Offer suggestions on how to effectively communicate and educate owners about nutritional recommendations, including for weight control
- Provide strategies to increase adherence to pet nutrition recommendations
- Address several nutrition-related topics of current interest, including raw and home-prepared diets, breed-specific nutrition, and diet-associated dilated cardiomyopathy in dogs



Elevate End-of-Life Care

New End-of-Life Care accreditation model from AAHA



40% of pet owners wouldn't return to a veterinary hospital where they had an unsatisfactory pet euthanasia experience.

AAHA's new **End-of-Life Care accreditation** model is designed to help you elevate these services, so patients and clients receive appropriate supportive and emotional care at the end of life.

Learn more and apply: aaha.org/eolc
Questions? Email eolcaccreditation@aaha.org

PROVEN PROTECTION FOR YOUR PATIENTS



Keep your shelves stocked with triple-action **FRONTLINE® Gold** brand products, and our newest product, **FRONTLINE® Shield for Dogs** with FRONTLINE's fastest speed of kill and added repellency.

FRONTLINE®
GOLD BRAND PRODUCTS

- ✓ **Breaks the flea life cycle** by killing the next generation of flea eggs and larvae
- ✓ **Kills ticks** including those that may transmit Lyme disease
- ✓ Works for a **full month**

FRONTLINE®
SHIELD FOR DOGS

- ✓ **Fastest** FRONTLINE product, starts killing fleas in just 5 minutes*
- ✓ **Repels** mosquitoes that may transmit heartworm disease and ticks that may transmit Lyme disease
- ✓ **Kills** fleas and ticks for a full month

Contact your Boehringer Ingelheim Sales Representative for more information about the **#1 name in flea and tick protection.†**

*Beginning 2 days after treatment

†FRONTLINE brand products. Data on file at Boehringer Ingelheim.

FRONTLINE® is a registered trademark of the Boehringer Ingelheim Group. ©2021 Boehringer Ingelheim Animal Health USA Inc., Duluth, GA. All rights reserved. US-PET-0900-2020

 **Boehringer
Ingelheim**

Don't Ignore the Other Things



One thing is for sure, the work didn't stop during the pandemic, and the risks associated with the medical procedures didn't go away either.

Safety Is More than Just COVID Prevention

Philip J. Seibert, Jr. CVT

The effects of COVID-19 have changed our lives and the way we work. Aside from the medical implications, the pandemic has drastically changed our personal and work habits. Some of those changes have been good, but some of them have resulted in unintended consequences. At work, the biggest change is in the way we interact with our clients and patients. Curbside service and limited contact have changed our focus and placed stresses on the team and the facility that we never anticipated.

As we look back at how we overcame some of those challenges—focusing on masks and social distancing and enhanced wiping of counters and doorknobs—it is easy to forget about all the other things that could hurt us on the job. So, as we make yet more adjustments to operations with a reopening plan, we should resurrect the behaviors and activities that are necessary to keep us safe from all the other hazards we face in our duties.

Animal Handling

Some animals behave better when the owner isn't in the exam room. But when the client is not present, some staff members may let their guard down a little and perhaps be less attentive during restraint, which can become problematic.

In 2020, when most practices went to curbside service only, the profession

experienced an increase in animal bites while attempting to get patients out of vehicles with minimal owner contact. It's usually better to let the client get the animal out of the vehicle to avoid potential problems with territorial behaviors.

Another effect of curbside service was the increased time and labor it takes to accomplish even simple tasks. Extremely busy staff members often take shortcuts that lead to injuries such as back strains. Back injuries can happen quickly but are easily

preventable. Everyone is different and there are no specific "safe" lifting limits that fit every situation. The best prevention is to use the correct posture when lifting anything, including patients (See sidebar "Lift with Your Legs").

AAHA's Workplace Safety Standards

AAHA has many standards related to workplace safety. Here are just a few of the dozens of safety-related standards.

- Practice team members should be educated on regulations and the critical nature of controlled substances. This training must be performed upon hire and annually thereafter.
- The practice should utilize centrally monitored fire detection devices (offsite monitored smoke detectors, heat detectors, or sprinkler systems)
- Practices need to provide documented radiographic safety training to practice team members involved in radiology procedures which must be completed upon hire and annually thereafter.

For more information log on to your accreditation evaluation tool at eval.aaaha.org



Lift with Your Legs

Lifting posture is the most important aspect of preventing back injuries. When lifting anything, including patients:

- Bend at the knees (not your waist) and keep your back straight
- Hold the "load" close to your body
- Lift with your legs
- Avoid rotating or walking with heavy loads when possible



Handwashing 101

There are five times when a thorough handwashing is necessary for veterinary staff:

1. After examining or treating patients or cleaning cages
2. After handling any chemicals, medications, or lab samples
3. Before any snack or meal
4. Before as well as after using the restroom
5. At the end of your shift before leaving the facility

A good handwashing includes:

- Water: Wet your hands with warm running water.
- Soap: A detergent soap is usually sufficient for everyday use. Antibacterial soaps should be used after medical procedures or contact with potentially infectious animals.
- Motion: Scrub your hands together, and don't forget to scrub the tops of your hands and in between your fingers.
- Time: Scrubbing should last at least 20 seconds.
- Drying: A clean, dry towel should be used to remove excess water. A disposable paper towel is best. Avoid sharing cloth towels.



Exposure to Chemicals and Drugs, Especially from Ingestion of Food or Beverages

We all know that chemicals and pharmaceuticals cause changes in our bodies, and we wouldn't intentionally ingest those things unless it were medically necessary. But one of the behaviors we've seen in the socially distanced workplace is folks taking meals or snack breaks in "their area" instead of a communal break room or cafeteria. While such behavior may be good to prevent the spread of a virus, the staff member may then be at more risk of ingesting contaminants such as drugs or medicines.

Treatment rooms, exam rooms, labs, and animal housing areas are inappropriate places for lunch breaks because of the presence of harmful biological and chemical contaminants. It's extremely difficult and generally impractical to remove all those hazards just to have a snack or drink. Meals, snacks, or beverages must be stored, prepared, and consumed in a sanitary location, even during a pandemic.

Security and Violence Prevention

It's easy to think that one is safe if the front door is locked. And in the last year, our front doors have been locked a lot! But the reality is that workplace violence is an ever-present problem. Of course, we are all familiar with the well-publicized episodes of workplace violence where a disgruntled former employee returns to the business seeking revenge or retribution, but for

the veterinary practice there are three more likely sources: random robberies, personal relationships gone bad, and disgruntled clients.

People who commit robbery will usually try to be stealthy about it. They try to gain the element of surprise by waiting until there are few people in the business. Folks with relationship problems likewise usually seek to catch their ex-partner alone to limit witnesses to the event. Both of those folks rarely just walk in the front door—unlocked or not. They tend to use the staff entrance or an unlocked back door to gain entry undetected because they know that most places are not as diligent about security in those areas as they are at the customer entry.

Until recently, violence against veterinary workers by customers was a pretty rare event, but in recent years that trend has been changing. We're starting to see an increase in episodes where a customer who feels they have been cheated or disrespected are taking physical actions. In a recent event, a distraught client used physical intimidation to make a veterinarian and technician examine and treat his cat. The client called the clinic with an "urgent" need for his cat to be examined but was told there were no appointments available for the next two days. After the phone call, the client came to the clinic, gained entry via the side entrance door, and forced the veterinarian and a technician to examine and treat his cat immediately. The client was later arrested for the equivalent of false imprisonment. Although the staff was not physically injured, the situation could have gotten much worse.

All exterior doors to the facility should be locked at all times unless they are monitored (such as a client entrance) or in immediate use.

To balance the need for practical access with the need for security, a keyless, push-button, or finger pad lock is the best answer for non-client entry doors.

Fire Prevention: Clutter and Electrical Gizmos

It's a fact of life that when folks are busy, general cleanliness and organization tend to take a back seat to the task at hand. That tendency is sometimes exaggerated when the disorganization happens in a place where the general public can't see it. In reality, "I'll put it away later" hardly ever works out. With the increased workload and curbside service trend of the last year, a lot of practices are suffering from a "clutter" problem.

Clutter can be a problem because:

- Improper storage increases the likelihood of articles falling from stacks or piles
- Material stacked in a hallway or walkway or on stairs is likely to trip a person
- Work becomes more difficult if materials are not in their normal place, and the clutter "grows" as one searches for things
- Housekeeping and sanitation are more difficult when things are in the way
- Clutter has a way of spreading to the point where it may become a fire hazard or block emergency exits

Remember this phrase: "Don't put it down, put it away." It is important to store supplies promptly and put items away after use. And make sure those

emergency exits are free and clear in case you need them.

Technology is revolutionizing medicine in a lot of ways, but it has a price. From a physical safety perspective, the cost of that revolution is access to power—specifically having enough outlets to plug in all the stuff we use.

As more and more things require electricity, buildings designed just a few years ago are already suffering from a lack of available outlets. So sometimes the answer is to use a power strip. Although using a surge protector for sensitive electronic devices is smart, using a power strip just to gain more outlet space is a terrible idea. It's so easy to overload those devices that the National Fire Prevention Association has released numerous safety bulletins warning of the serious fire danger from surge and power strips when they overheat. Except for sensitive electronic devices, appliances, tools, equipment, and personal convenience devices (space heaters, aromatherapy devices, etc.) should always be plugged directly into a wall outlet and never into outlet-multiplying devices.

Medical Procedure Issues: WAGs, Radiation, Zoonotic Diseases

One thing is for sure, the work didn't stop during the pandemic, and the risks associated with the medical procedures didn't go away either.

Waste anesthetic gas (WAG) exposure can be a significant health problem for veterinary staff members. Fortunately, preventing that exposure is relatively easy:

- Fill the vaporizer in a well-ventilated area and maintain

the anesthetic machine according to the manufacturer's directions

- Always use the scavenging device for all gas anesthesia procedures
- Check the anesthetic circuit for leaks for each and every patient
- Maintain the scavenger properly and change adsorption scavengers before they become saturated
- Avoid tank or mask gas induction procedures
- Maintain good general ventilation in the patient area to prevent the accumulation of gas from recovering patients

Although it's virtually impossible to avoid all exposures to radiation, it is easy to keep exposure safely below the permissible limits. The ALARA principle—As Low As Reasonably Achievable—is the doctrine that is endorsed by most veterinary and medical safety organizations. Some of the principles of ALARA are:

- Share radiographic duties among staff members to avoid one person receiving excess exposure. Every staff member must have and use a personal dosimetry badge to track their exposure.
- Everyone should leave the room during exposure when possible. Staff who remain in the room must wear a protective apron during the exposure, even for dental radiograph procedures.
- Staff members who manually restrain a patient during an exposure must wear protective gloves. Placing the gloves over the top of the hand and single-sided hand shields are not acceptable substitutes.
- Strive to position the patient properly to reduce retakes.



Although it's widely accepted that our animal patients can't transmit COVID-19 to us, there are many zoonotic diseases that we can get from contact with animals. Simple bacterial or fungal infections are rarely deadly but do cause discomfort and sometimes exacerbate other medical conditions.

Since we can't avoid contact with sick animals, we must protect ourselves. Barrier protection such as disposable exam gloves and gowns go a long way, but proper personal hygiene is the best defense. Regular handwashing and safe eating and drinking practices (only in sanitary environments) are the most important personal hygiene actions one can perform (See sidebar "Handwashing 101").

We certainly should never forget that the overriding purpose of a veterinary practice is the care and treatment of patients, but that doesn't mean we have to endure injury to accomplish the mission. It's certainly wise to heed the dangers of the moment, but it's foolish to ignore all the other risks to focus solely on one issue. ✖



Philip J. Seibert Jr., CVT, is owner of SafetyVet in Calhoun, Tennessee.

Is your team missing the 5th assessment?

5 vital physical assessments in every physical exam:

1. Temperature

2. Pulse

3. Respiration

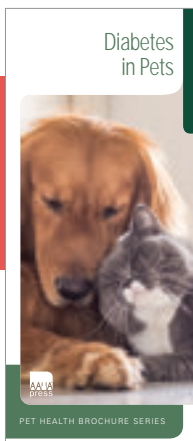
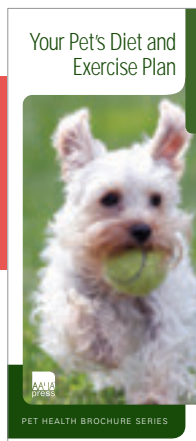
4. Pain

5. _____?

Get tools and resources for your team to confidently perform nutritional assessments in the **2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats!**

aaha.org/nutrition

The 2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats are supported by generous educational grants from Hill's Pet Nutrition, Inc., Purina® Pro Plan® Veterinary Diets, and Royal Canin®.



Ensure your clients understand the importance of nutrition with pet health brochures from AAHA. Order copies of *Your Pet's Diet and Exercise Plan* and *Diabetes in Pets* at press.aaha.org.



Traditional Chinese Veterinary Medicine and Integrative Care

Essential for Hospice and Palliative Care Patients

by Tamara Shearer MS, DVM, CCRP, CVPP, CVA, CHPV, CTPEP

By utilizing integrative care methods, the veterinarian's ability to relieve suffering and improve quality of life for hospice and palliative care patients has never been more powerful. Integrative care is not only paramount for patients that have complicated conditions with multiple comorbidities, but it also helps to support the caregivers during this important time in their lives. Even though integrative care plays an especially important role in hospice and palliative care, it should be considered for all patients.

According to the Academic Consortium for Integrative Medicine: "Integrative medicine and health reaffirms the importance of the relationship between the practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic and lifestyle approaches, healthcare, and disciplines to achieve optimal health and healing." This comprehensive definition also applies to veterinary medicine patients and caregivers.

As prominent human hospitals like Johns Hopkins, the Mayo Clinic, the Cleveland Clinic, and the MD Anderson Center promote the use of integrative care, more pet owners are seeking integrative care for their pets because of good experiences that they have had for themselves or their human family members. In the past 10 years, more veterinarians are also utilizing the formal concept of integrative



Tamara Shearer, MS, DVM, CCRP, CVPP, CVA, CHPV, CTPEP, (left) and her assistant perform acupuncture on a dog as the owner (right) looks on.

Even though integrative care plays an especially important role in hospice and palliative care, it should be considered for all patients.

care in their practices even though some veterinarians and cultures have been applying the principles of these disciplines for decades. If we look closely, we can find this evidence documented in vintage photographs and in the ancient practice of Traditional Chinese Veterinary Medicine (TCVM).



Example of early veterinary integrative care; "Jigg's" November 20, 1923.

Role in Hospice and Palliative Care

Integrative care plays a more important role for hospice and palliative care cases because these patients are often fragile and the human-animal bond is being challenged. Patients are often placed in a hospice or palliative care program because of a serious condition, a poor prognosis, or the side effects of the therapy outweighing the benefits.

Pet owners are desperate to seek help when curative treatment has failed, when symptoms of a chronic illness interfere with the routine of the pet, or when progressive illnesses have health complications associated with them. Often, disease processes interfere with relationships, resulting in decreased social interactions and diminished physical activities. This is a time where caring for the human-animal bond is essential.

Integrative care provides multiple benefits, especially for these patients (see sidebar). It allows for alternative choices for patients that cannot tolerate conventional care. It may decrease the amount and frequency or even eliminate the need of prescribed medications that have unwanted side effects. In many cases, it manages or decreases pain and slows the progression of disease processes. Integrative care may also provide a faster and better recovery from surgeries or traumas and allow the patient to reclaim the activities of daily living. Ultimately, most integrative choices have a low risk of side effects when provided properly, and many options allow the pet owner to participate in the care of their pet. Lastly, it benefits the veterinarian by giving them peace of mind in knowing that they are doing everything possible to support their patient.

Examples of integrative care modalities include manual therapies like massage, chiropractic care, joint mobilization, and therapeutic exercise. Therapeutic modalities include the use of thermal mediums, laser therapy, therapeutic ultrasound, transcutaneous electrostimulation, extracorporeal shockwave therapy, pulsed electromagnetic therapy, and hydrotherapy. Food therapy, nutraceuticals, regenerative stem cell therapy, and platelet-rich plasma therapy are also considered part of integrative care.

Traditional Chinese Veterinary Medicine

One of the most misunderstood, overlooked, and underutilized of the therapies is TCVM. TCVM is an extension of Traditional Chinese Medicine (TCM), which is used to

treat humans. What makes TCVM unique is that it has been integrative for more than 2,000 years, meeting the comprehensive needs of not only the individual patient but also the caregiver. This philosophy of care plays an especially important role when caring for hospice and palliative care patients. While some find the TCVM approach to problem-solving unconventional, it is often helpful in providing care for hospice and palliative care patients because it offers a creative and new perspective on evaluating and caring for the individual, not just the disease process.



Benefits of Integrative Care for Hospice and Palliative Patients

- Allows alternatives for patients that do not tolerate conventional therapies
- Allows caregiver to participate in the pet's therapy
- Manages or decreases pain
- Improves or slows progression of disease processes
- Decreases the amount of medication prescribed
- Facilitates faster and better recoveries from surgeries or traumas
- May help reclaim activities of daily living
- Offers low risk of side effects



Belle receiving electroacupuncture therapy.

There are four branches of TCVM that make it integrative in its own right. The four branches are acupuncture, herbal medicine, *Tui-na* (a form of therapeutic massage), and food therapy. A fifth branch in human TCM includes *Qigong*, a form of self-care involving movement and breathing techniques. The two most popular branches of TCVM are acupuncture and herbal therapy.

Based on clinical trials, the World Health Organization has approved the use of acupuncture for more than 40 conditions in humans. Those conditions include, but are not limited to, relief from various forms of pain, nausea, vomiting, hypertension, stroke, leukopenia, and gastritis. A few examples of evidence-based veterinary research include the following clinical studies.

Turner-Knarr (2018) demonstrated how stimulation of acupoint Liver-3 lowers the anesthetic requirement for dogs undergoing orchiectomies. Personally, I have used that technique to lower the anesthetic requirements for pets undergoing surgery, which is especially beneficial for high-risk patients.

Studies document the importance of integrating acupuncture into a palliative treatment protocol for

patients with intervertebral disk disease (IVDD). When treating IVDD, electroacupuncture combined with standard Western medical treatment was effective and resulted in a shorter time to recover ambulation and deep pain perception than did treatment without electroacupuncture. In 2010, Joaquim's study on longstanding, severe neurological deficits associated with thoracolumbar IVDD documented that electroacupuncture was more effective than decompressive surgery for recovery of ambulation and improvement of neurologic deficits.

Belle, a 13-year-old dachshund with acute-onset IVDD with rear limb paralysis and no deep pain perception, presented to Smoky Mountain Integrative Veterinary Clinic for palliative care after a surgical option was discouraged by a neurologist and surgeon because of a grim prognosis. She was managed medically with conventional medications and received acupuncture, herbal formulas, and pulsed electromagnetic therapy (Assisi LOOP). Belle regained the ability to ambulate unassisted with minimal ataxia in five weeks.

The second most popular TCVM branch, herbal therapy, has a long history of being practiced in China for both humans and animals. During that time, many herbal formulas have been widely studied, with documentation of the pharmaceutical benefits, indications, and contraindications. For example, when searching PubMed for the keyword "astragalus" (a common Chinese herb), there are more than 10,000 references describing its uses, which range from anti-inflammatory

to immunostimulatory. One example of a veterinary research study was conducted in 2016 by Jiu Wen, DVM, et al., where 181 dogs with complete cranial cruciate ligament rupture received a Chinese herbal formula. The study demonstrated that this formula helped to resolve pain and lameness and was a safe and effective alternative for individuals that could not have surgery for various reasons.

The other branches of TCVM also play an important role in supporting end-of-life and palliative care patients.

Chinese food therapy addresses the nutritional needs of an individual animal based on their specific disease pattern and uses food as a therapy to treat disease. It is especially useful for patients that are difficult to medicate but still maintain an appetite.

Tui-na is a form of manual therapy and massage guided by TCVM theory to treat and prevent various disease processes. Utilizing its gentle techniques, it is ideal for geriatric patients to treat various clinical signs like weakness, stiffness, sleep disorders, and neurodegenerative disorders. *Tui-na* techniques can also be taught to pet owners to help care for their pets at home.

Qigong is a form of self-care that is practiced by humans for relaxation, exercise, self-healing, and training for the martial arts. When providing hospice and palliative care, it is imperative for the practitioner to take good care of their mental and physical health so they can provide good care to their patients. *Qigong* can be an excellent practice for caregivers to consider as a self-care measure.



Palliative care patient, Leroy, an eight-year-old English hound with polyradiculoneuritis receiving integrative care (assisted standing and hydrotherapy) to support his recovery.

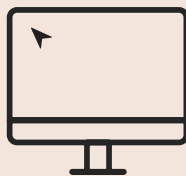
Other Modalities

Besides TCVM, other simple techniques can be utilized for profound results. Consider these five straightforward tools:

- Cold therapy can be used as a local analgesic for acute inflammation
- Warm moist heat can improve circulation and relax muscles
- Passive range of motion for debilitated patients can prevent muscle contractures and improve circulation
- Assisted standing can prevent the side effects of disuse like decubital ulcers for debilitated patients
- Modifying feeding practices and the use of nutraceuticals should not be overlooked as a patient's health changes

Introducing any type of evidence-based integrative care into an existing practice can be accomplished by exploring continuing education in specific areas of interest. It is recommended by this author to add a new integrative skill set to an existing practice every two years. Ultimately, the latest information on integrative trends will not only improve the caliber of medicine practiced but also boost confidence and support job satisfaction.

Integrative care not only elevates the degree of care for patients but also supports the relationship between the practitioner and pet owner. Combining modern medical advancements with integrative care gives veterinarians more options to treat the clinical signs of disease, which allows the profession to preserve a longer quality of life in pets struggling with aging and chronic and life-limiting illnesses. It is important to explore all potential therapies to ensure that the pet is comfortable up until the time that the pet dies naturally, there is a hospice-assisted death, or the need for euthanasia is determined with the help of the professional support team and family. ✖



Online bonus content

Read this article online to access online bonus content, at trends.aaha.org

References

- Academic Consortium for Integrative Medicine and Health. "Mission and Vision." Accessed May 7, 2021. <https://imconsortium.org/about/introduction/>.
- Akashi, Azaria. 2011. "10 tips for vets dealing with terminally ill patients." *Veterinary Clinics of North America: Small Animal Practice* 41(3): 647–49.
- Hayashi, Anye Murata; Matera, Julia Maria; and Ana Carolina Brandão de Campos Fonseca Pinto. 2007. "Evaluation of electroacupuncture treatment for thoracolumbar intervertebral disk disease in dogs." *Journal of the American Veterinary Medical Association* 15;231(6): 913–18.
- Joaquim, Jean G F; Luna, Stelio P L; Brondani, Juliana T; Torelli, Sandra R; Rahal, Sheila C; and Fernando de Paula Freitas. 2010. "Comparison of decompressive surgery, electroacupuncture, and decompressive surgery followed by electroacupuncture for the treatment of dogs with intervertebral disk disease with long-standing severe neurologic deficits." *Journal of the American Veterinary Medical Association* 1;236(11):1225–29.
- Qi, Yan; Gao, Fen; Hou, Lifei; and Chunping Wan. 2017. "Anti-inflammatory and Immunostimulatory Activities of Astragalosides." *The American Journal of Chinese Medicine* 45(6): 1157–67.
- Turner-Knarr, Karen. 2018. "Liver-3 Acupoint Effect on Isoflurane Anesthesia Usage During Canine Orchiectomy: A Controlled, Randomized and Blinded Clinical Study." *American Journal of Traditional Chinese Veterinary Medicine* 13(1): 15–24.
- Wen, Jiu J; Johnston, Karen; and Dominic Gucciardo. 2016. "Chinese Herbal Medicine for Dogs with Complete Cranial Cruciate Ligament Rupture: 181 Cases." *American Journal of Traditional Chinese Veterinary Medicine* 11(1): 41–48.
- World Health Organization. "Acupuncture: Review and Analysis of Reports on Controlled Clinical Trials." Accessed May 21, 2021. <https://www.acupuncture.org.uk/public-content/public-traditional-acupuncture/4026-who-list-of-conditions.html>.
- Xie Huisheng, Chinese Veterinary Herbal Handbook, 3rd Ed. Jing Tang Publishing; 2012. p. 366.
- Tamara Shearer MS, DVM, CCRP, CVPP, CVA, CHPV, CTPEP, is owner of Smoky Mountain Integrative Veterinary Clinic in Sylva, North Carolina. Shearer is internationally renowned for her work in animal hospice and palliative care and is one of the leading veterinarians in the world in the fields of hospice, palliative care, and pain management.



Show off your **AAHA PRIDE**

AAHA accredited merchandise helps you demonstrate your AAHA pride while educating your clients on the value of AAHA accreditation. It's great for open houses, community events, and more!



Popular items include:

We Are Accredited Brochures

These **FREE** client brochures explain what AAHA accreditation means for your practice, clients, and pets.

Exam Table Mats

With an antimicrobial, nonskid padded bottom, these mats are easy to clean.

\$35 each

Pet Food Lids

These three-step lids are sure to fit any size can.

\$1 each

Bandanas

A cute giveaway for your next open house!

\$5 each

Collapsible Bowls

A great gift for clients, and it travels well.

\$5 each

Find these items and more at aaha.org/store; sort by “Accredited Members.”

Pain Management Case of the Month: Josie

Golden Retriever with a CCL Tear

by Paul Brumett, DVM, CCRP, cAVCA, HTAP

Signalment and History

Josie is an 11-year-old spayed female golden retriever who enjoyed an active lifestyle and routinely walked 5 to 6 miles a day with her owners. In mid-January 2020, the owners heard Josie yelp on a walk and noted she was carrying her left rear leg. She was subsequently diagnosed with a left cranial cruciate ligament (CCL) tear by her regular veterinarian, who discussed surgical correction as well as conservative care with them. Josie was placed on 100 mg of carprofen once daily for pain and a joint health supplement by label. After a brief phone visit with the owner, Josie presented to my clinic at the end of February 2020 for consultation on stifle bracing and rehabilitation therapy.

Physical Examination and Diagnostics

On physical exam, Josie had a grade 2/5 limp on her left rear leg with decreased muscle mass. She externally rotated the left rear leg and had mild to moderate weight bearing in standing. At times she would toe touch with her left rear leg. Thigh girth in standing at the groin was 34 centimeters on the left and 39 centimeters on the right. The left iliopsoas was tender on palpation and the left stifle painful on extension with positive drawer and moderate effusion. Neurological exam was normal. Radiographs taken at initial diagnosis by the referring veterinarian showed effusion in both stifle joints, with the left being worse than the



right. The owners were educated on the possibility of the right stifle having a CCL rupture in the future, which did happen about five months later. The rest of the exam was within normal limits.

Treatment and Outcome

A discussion on surgical correction of CCL tears as the current standard of care in veterinary medicine, the use of custom stifle orthotics/braces (knee braces), conservative care, and possible outcomes/expectations was undertaken with Josie's owners. They decided to move forward with a custom stifle orthotic (brace) for the left stifle and rehabilitation therapy. Josie received veterinary chiropractic, laser therapy (Class 3b) of her stifles and lower back, targeted pulsed electromagnetic field therapy for her stifles and lower back, and targeted exercises at each therapy session.

The custom stifle orthotic was cast per manufacturer instructions as follows:

Josie was placed in right lateral recumbency without sedation. A veterinary nurse and the owner assisted in restraint. Stockinette was placed over the limb extending from the groin to the foot. A cutting strip was placed on the lateral side of the left pelvic limb with the ends through a small hole in either end of the stockinette.

As the limb was held in extension, casting material was wrapped snugly, starting just below the ankle and wrapping up high into the groin with a 50% overlap.

The casting material was then spiraled back down at approximately

a 45-degree angle to create three layers of material ending at the ankle. Reduction of drawer was accomplished by the wrap of the casting tape and gently pulling perpendicular to the hip at the ankle.

As the casting material became firm, pictures were taken of the cast on the limb from the front, side, and rear for reference at the lab.

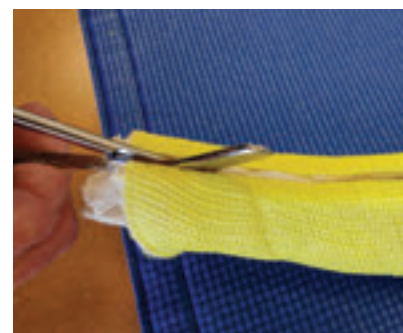


As the cast hardens, take pictures of the cast on the limb from the front, side, and rear. Note the placement of the cutting strip. These pictures were taken during Josie's right stifle casting.

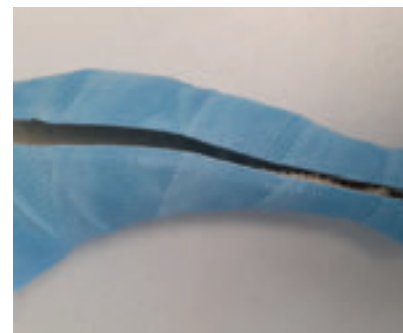
The cast was removed using a hook blade carpet knife with the cutting strip as both protection and guide. The underlying stockinette was cut off and the cast removed with the edges realigned to fully set. Measurements were taken per manufacturer instructions.



The cast is cut off with a hook blade knife using cutting strip as a protective guide. Example picture.



The stockinette is cut with scissors to allow removal of the cast. Check with your manufacturer to see if it can be left in place. Example picture.



Josie's finished right cast after removal. Example picture.



Josie in her first stifle brace.



Josie in both braces..

After making the casting/impression, Josie was sent home with instructions to perform targeted exercises at home, continue leash walks for bathroom breaks, and continue the pain and joint medications previously prescribed by her regular veterinarian.

Approximately three weeks later, Josie was fitted with her custom left stifle brace.

The owners were instructed on proper donning and doffing as well as proper break-in/wearing schedule. Josie was to work up to 8 to 12 hours of wear time during the day over 7 to 10 days. She received another round of laser therapy, tPEMF, vet chiropractic, and new exercises that could be performed in her brace to enhance use and regain muscle mass.

Normally, Josie would have had a two-week follow-up, but the COVID-19 pandemic began to restrict movement and the owners kept in touch by phone and email. Josie was doing well.

At six weeks after brace fitting, Josie was back up to walking two miles a day and was tolerating the brace well. On exam, her thigh girth in standing had increased by four centimeters on the left side.

At 10 weeks after brace fitting, Josie was walking two miles twice a day and thigh girth had increased by two more centimeters in both rear limbs. Josie's owners were instructed to continue rehabilitation exercises at home.

Discussion and Conclusion

Josie's case is typical of what I see in my rehabilitation practice: owners who are looking for treatment options other than surgery, such as those with older pets and comorbidities. In Josie's case, like 50% to 60% of dogs who rupture one CCL, she ruptured her right CCL five months after the left. After additional consultation we placed her in a right custom stifle orthotic. Josie has done well and is back to three- to four-mile walks daily with her owners in her braces.

Custom stifle orthotics are still controversial in some circles and need to be applied for the right reasons. Although the custom stifle brace is designed to manage drawer and support the stifle, it is more difficult to manage patella luxation and collateral ligament damage. The degree of medial meniscal damage and coping ability of the pet can also affect how well a stifle brace can help. Each bracing company has its own thoughts and approaches to

these issues, and I encourage anyone considering a brace to consult with the company they are working with. The casting process presented for Josie is similar between companies, but each has its own variation. Check with them to see exactly what techniques, measurements, and labeling they require.

Custom stifle orthotics are relatively new to veterinary medicine, having only been in use the last two decades. As veterinarians, physical therapists, and clients begin to understand and use these devices more, we will get better at applying them to specific cases. Research on custom orthotics and braces is ongoing and needs to continue so that we can understand more about the biomechanics, proper application of corrective forces, design, and use for our patients in the future. ✖

Paul Brumett DVM, CCRP, cAVCA, HTAP, practices in Grand Junction, Colorado. He is a Healing Touch for Animals Practitioner, certified in Canine Rehabilitation, and certified by the American Veterinary Chiropractic Association in Animal Chiropractic. He is also a Hero Braces consultant and representative, and performs site visits, presentations, and CE events across the country.



Comments from Mike Petty, DVM, CCRT, CVPP, DAAPM

I graduated from Michigan State University and learned how to treat cruciate tears using the modified retinacular imbrication technique from two of the surgeons who created the procedure, Gretchen Flo, DVM, and Wade Brinker, DVM. I have used it, mostly with success, throughout my 40-year career as a veterinarian. However, as I learned more about rehabilitation and acupuncture, and as orthopedic braces became more sophisticated, I transitioned to treating almost every patient conservatively, with outcomes similar to surgical techniques for CCL repair.

There are two patient conditions I do not brace: the first are those with meniscal tears and the second are those patients with stubby rear legs that have a markedly thick thigh. The first patient needs the tear repaired surgically, and since you are already in the knee, a surgical correction becomes more practical. The second patient has that thick, inverted cone shaped thigh that isn't conducive to having the brace stay in place. There are several places that make custom braces, including Hero Braces (which the author of this case is a representative for), and if I have a question about whether or not the brace will stay on, I take several "before" photos and ask their opinion, which they give honestly.

Finally, I talk to every owner about the need for some rehab exercises, use and care of the brace, and possible ancillary treatments for pain control during the initial healing period. If I feel from that conversation that they might not be the type to follow through, I consider surgery as a better option.

Michael C. Petty, DVM, CCRT, CVPP, DAAPM, is in private practice in Canton, Michigan. He is a frequent national and international lecturer on topics related to pain management. Petty offers commentary on each Pain Case of the Month (and occasionally writes one himself). He was also a member of the task force for the 2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats.



Safer, consistent
medications.

Shake on it.






FDA Registered Facility

Request a swag pack!

Hover your phone's camera over the QR code

epicurpharma.com | 888.508.5032



THE FUTURE OF COMPOUNDING IS MANUFACTURING™

AAHA Marketplace

Escape Artists Meet Your Match




sleepypod[®]
safe travels

Martingale Dog Harness

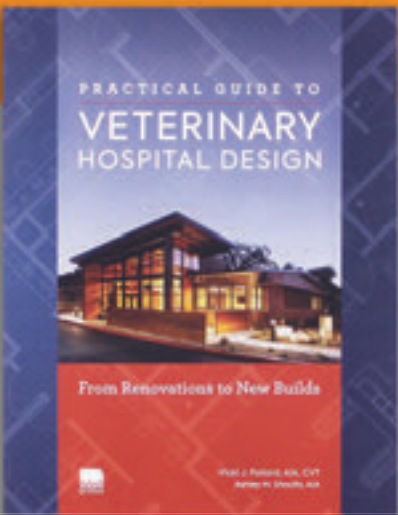
incorporates a cinching feature to help prevent crafty pups from backing out of it and provides gentle pressure to remind your pup not to pull.




sleepypod.com 626.421.6818

ANIMAL ARTS

Authors of the comprehensive guide to **Veterinary Hospital Design**



40+ Years of expertise in animal care architecture and design

www.animalarts.com

303.444.4413

AAHA'S CAREER CENTER

Connecting talent with opportunity



Learn more at
careers.aaaha.org



AAHA Marketplace

Choose a pharmacy as unique as your patients.

Pet Health is dedicated to providing high quality personalized medications for individual animal needs. With 20+ years of veterinary specific experience we are proud to serve as a trusted resource for veterinarians and their patients.



WOMEN'S INTERNATIONAL PHARMACY



800.742.0516

For more information visit:
www.bit.ly/pethealth-trends



endoscopy support services, inc.

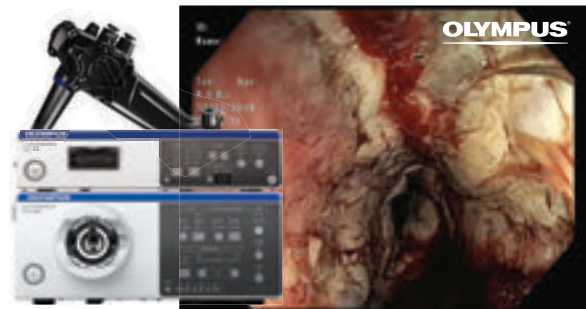
Better Products for Better Medicine

endoscopy.com

3 Fallsview Ln, Brewster, NY • E: sales@endoscopy.com • P: (845) 277-1700

WORKFLOW SOLUTIONS FOR YOU

All that you need: from endoscopy equipment, accessories and cleaning supplies, to Repair Services & a Vendor-Neutral Archive Service. We're you're best source for everything endoscopy.



HIGH-DEFINITION IMAGING



DICOM IMAGE CAPTURE & REPORTING



SHARE and ARCHIVE (VNA)

Truly great practices never stop improving.

AAHA-Accredited Veterinary Management Groups (VMG) work together to help each other attain greater success.

Collaborate with the best of the best to help your practice achieve its full potential.

Are you ready to take your practice to new heights?

Learn more at aaaha.org/vmg



VMG

AAHAACCREDITED VETERINARY MANAGEMENT GROUPS



Advertiser Index

2021 AAHA Nutrition and Weight Management Guidelines for Dogs and Cats	50
aaha.org/nutrition	
AAHA-Accredited Veterinary Management Groups	61
aaha.org/vmg	
AAHA Career Center	60
careers.aaha.org	
AAHA End-of-Life Care Accreditation	44
aaha.org/EOLC	
AAHA Membership	23, 55
aaha.org	
AAHA Savings Programs	38
aaha.org/savings	
AAHA@WVC	29
aaha.org	
Animal Arts Design Studios	60
www.animalarts.com	
Boehringer Ingelheim Animal Health	2, 3
NexGardClinic.com	
Boehringer Ingelheim Animal Health	9, 10-11
ProZinc.us	
Boehringer Ingelheim Animal Health	16, 17
HEARTGARDClinic.com	
Boehringer Ingelheim Animal Health	45
Frontline.com/gold	
CareCredit	Back Cover
carecredit.com/mycustomlink	
Connexity	15
aaha.org/connexity	

DEVTP	16
www.devtp.org	
Endoscopy Support Services Inc.	61
endoscopy.com	
Epicur Pharma	59
epicurpharma.com	
GuardianVets	63
GuardianVets.com	
Hill's Pet Nutrition Inc.	1
HillsVet.com/Derm	
IDEXX	False Cover, 30-31
idexx.com/PreventiveCare	
idexx.com/1in4	
Medi-Dose/EPS	Inside Back Cover
MediDose.com	
Merck Animal Health	7
https://www.merck-animal-health-usa.com/nobivac/nobivac-intra-trac3-adt?utm_source=AAHA?utm_medium=CIRDC?utm_campaign=Print%20Ad?utm_content=Listed?utm_term=August	
MWI Animal Health	Inside Front Cover
www.mwiah.com/compliance	
Pet Health Pharmacy	61
www.bit.ly/pethealth-trends	
Rx Vitamins	5
rxvitamins.com	
SleepyPod	60
sleepypod.com	

Trends magazine is not responsible for contact information not specifically provided by an advertiser for use in the Advertiser Index or for other company contact information not listed in this index. Please contact the advertiser directly for all product information.



High Call
Volumes

Staff Burnout
Increased Absences
Low Morale
Turnover
Staff Shortages
Loss of Revenue

**DON'T WAIT UNTIL
IT'S TOO LATE**

GuardianVets is there even when
you can't be.



GuardianVets

guardianvets.com

Employee of the Month



Amanda "Mandi" Neal (left) and Candi McKinley.

NAME:

Candi McKinley and Amanda "Mandi" Neal

PRACTICE NAME:

**Grace Animal Hospital,
Bridgeport West Virginia**

OCCUPATION:

**Both: Customer Service Representative and
Veterinary Assistant**

YEAR STARTED IN VET MEDICINE:

Candi: 2016; Mandi: 2020

YEARS WITH PRACTICE:

Candi: 4½ years; Mandi: 10 months

**Each month in *Trends*, we will spotlight a
team member from an accredited practice.**

Does your team boast an outstanding
veterinarian, veterinary technician, customer
service representative, or kennel worker?

**Let us know at trends@aaha.org
and you can win \$100!**

Why Are They So Awesome?

Candi always comes to work with a smile on her face and a "can-do" attitude. She is willing to do anything to help out a coworker and she has a special way of keeping things light and fun, even on our busiest of days.

Amanda is always a joy to work with. She has a very kind and tender heart and shows tremendous compassion for our clients, patients, and our team members

How Do They Go Above and Beyond?

Candi works very hard to keep the reception area running smoothly in our busy practice. However, her passion is in working with the animals in more of a hands-on capacity, so she began cross-training to be a veterinary assistant. Candi continues to amaze us with how quickly she learns and how dedicated she is to her job. We feel blessed to have her on our team.

Amanda is very efficient and does an excellent job keeping appointments on time as a veterinary assistant. However, after working as an assistant she realized that she enjoyed engaging with clients and the job tasks of being a client service representative better. Amanda has quickly transitioned into this new role at our hospital and is doing an exceptional job.

In Their Own Words

Why do you love your job? Candi: I love working in a field that has so much compassion for animals. I find the work challenging, but very rewarding. Mandi: I love my job because I get to help in the process of caring for cats and dogs.

Pets at home: Candi: Dog, Bootsie; Cats, Petey and Shade.
Mandi: Dog, Marli Jo

What brought you to the profession? Candi: I loved visiting the hospital with my animals before I was hired and thought it would be a nice experience to be able to help animals on a daily basis. Mandi: I was drawn to working at Grace Animal Hospital because I felt compassionate about helping animals heal in order to be their happy/normal self again.

Hobbies outside of work Candi: Hiking and swimming.
Mandi: Fishing ❄️

Medi-Dose® EPS®

**My Vet Takes Good Care of Me.
Medi-Dose®/EPS®
Takes Good Care of My Vet.**

**Veterinary
Pharmacy
& Nursing
Supply
Experts**

With over 50 years of health care experience, Medi-Dose/EPS stocks and supplies a wide and varied line of veterinary pharmacy and nursing accessories to help you care for your patients...large, small and in-between. Please call or e-mail us to order or for more information.

**Products and accessories for
administering, compounding
and dispensing**

- Bottles
- Bags
- Trays
- Bins
- Labels
- Tapes
- Solid oral packaging
- Liquid oral packaging
- Oral syringes
- Tamper-evident seals
- Sterile droppers
- So much more

Medi-Dose®/EPS®
Exceptional Products and Service



800.523.8966

MediDose.com

Flexible *financing for all types of care*
Mobile *experience anytime, anywhere*
Personable *personalized for enrolled practices*

Loveable? *Yes, yes and yes!*



The budget-friendly solution for veterinary care is now friendlier than ever.



CareCredit's **flexible financing now has a super easy experience**. Clients simply use their device to scan your custom QR code or **click a link** to learn about financing, apply and pay,* all on their own. **It works curbside, homeside, exam side, even virtual care side.**

Enroll now with CareCredit. The one-time fee is only \$59 if you apply to enroll by September 30, 2021. Call 844-812-8111.

Already enrolled? Go to carecredit.com/mycustomlink.



Watch how CareCredit can put the flow in your workflows.



*Subject to credit approval.

©2021 Synchrony Bank
AAHA2021VA