SPECIAL FOCUS

Nutrition

IN THIS ISSUE

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On the cover:

Pruritic dogs are frequently challenging appointments for the veterinary healthcare team and frustration often follows on both the part of the team and client.
NAVTA has successfully grown throughout 2017 and we anticipate continued growth in 2018. Committees have increased in size, and task forces and sub-committees have been created. In the administrative department, NAVTA has hired a part-time administrative assistant and a part-time social media assistant. We are also pleased to announce that a partnership with AVMA has been formed, in which both organizations will share a full-time person to be housed in the AVMA offices.

NAVTA attended 70 veterinary conferences in 2017, increasing our presence nationwide. In addition, continuing education tracts have been sponsored at NAVC/VMX, WVC, CVC, AVTE and various state meetings. Pre-conference NATVA leadership workshops have been established at both the AVMA Veterinary Leadership Conference and the annual AVMA convention, and both events will continue in 2018.

The new website and database, implemented in March 2015, have enabled NAVTA to provide more member services including the development of a Career Center, a social media platform within the database, an online store, and a new CE Portal. The Career Center provides members with multiple resources, including a resume builder, the ability to post resumes for potential employers to see, and job listings for positions available throughout the country. Postings are emailed biweekly to alert members of new positions available.

SocialLink is the social media community located within website, and provides another means of communication and engagement with members, while encouraging networking.

New NAVTA merchandise is now available in the NAVTA store; visit the website to purchase your new gear!

In collaboration with Partners for Healthy Pets, a workbook has been developed to help technicians implement change in the workplace. The workbook provides talking points to facilitate discussions with the practice owner, management and team. A video series was created in 2017 to help implement each section of workbook. Visit the NAVTA website online store to purchase a copy today.

In addition to the long list of terrific benefits that NAVTA provides for members, three new benefits have been added; a 25% discount on Elsevier textbooks; a 15% discount on “I Love Veterinary Medicine” merchandise; and coming in 2018, NAVTA health, wellness and lifestyle discount programs. Visit the Membership Benefits page on the NAVTA website to access all benefits.

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National Veterinary Technician Week is celebrated during the third week

2017 was a record year for NAVTA and 2018 is looking even better!
in October every year. NAVTA offers press kits and posters available for download to help veterinary teams celebrate the special work of veterinary technicians nationwide during this week. NATVA further promotes Vet Tech Week by hosting interviews on TV shows, syndicated columns and podcasts.

The NAVTA Journal is published every other month with RACE approved CE articles. Be sure to visit www.VetMedTeam.com to take full advantage of the credits provided.

**Veterinary Technician Specialties (VTS)**

NAVTAs oversees, reviews, and recognizes VTS specialties. Currently, there are 15 specialties recognized (including Physical Rehabilitation recognized in 2017), with 5 – 7 new groups actively working to achieve recognition. The Committee of Veterinary Technician Specialties (CVTS) has designated an Ad Hoc group of experts to review guidelines and propose changes.

**Approved Veterinary Assistants (AVA)**

The AVA committee reviews and approves curriculum for veterinary assistant programs. Currently, 42 programs are recognized by AVA, with two additional programs currently under review. Graduates of AVA programs sit for an AVA credentialing test, in which CE is required for renewing.

**Veterinary Nurse Initiative (VNI)**

NAVTA responded to member concerns regarding lack of professional recognition and the need to unify the profession. The Veterinary Nurse Initiative is making strides in creating one title with a standard scope of practice and title protection in all 50 states. Legislative action is required to make this happen and is currently being introduced in three states. Although this process will not happen overnight, significant progress has been made in a short amount of time and will continue to occur over the next 5-10 years. NATVA thanks the valuable partners and supporters of the VNI:

**Our Partners:**
- Banfield
- Blue Pearl
- Royal Canin
- Petplan
- Animal Policy Group

**Our Supporters:**
- Human Society Veterinary Medical Association
- Michigan State University School of Veterinary Medicine
- Michigan Association of Veterinary Technicians
- Ohio Association of Veterinary Technicians
- Tennessee Veterinary Technician Association
- Tennessee Veterinary Medical Association
- Today’s Veterinary Nurse by NAVC

For the most current information about the Veterinary Nurse Initiative, please visit www.veterinarynurse.org.

NAVTA welcomes questions, ideas, or comments of any kind. The executive board is excited to continue bringing more opportunities to the profession, including educating the veterinary profession and public on the importance of veterinary technicians/nurses in the health and wellbeing of pets/animals of all kinds.

Julie Legred, CVT
NAVTA Executive Director
jlegredcvt@gmail.com
**NAVTA's 2018 Executive Board:**

**President**
Kara M. Burns, MS, MEd, LVT, VTS (Nutrition), VTS-H (Internal Medicine, Dentistry)

Kara Burns is a licensed veterinary technician with a master’s degree in physiology and a master’s degree in counseling psychology. She began her career in human medicine working as an emergency psychologist. She made the move to veterinary medicine and worked in small animal private practice and a small animal and avian practice in Maine.

Kara is the Founder and President of the Academy of Veterinary Nutrition Technicians, the tenth recognized specialty for veterinary technicians and has attained her VTS (Nutrition). She teaches nutrition courses around the world on digital platforms and in person. She also is a consultant for the Lafeber Company/Emerald and is Director of Nursing for Brief Media and co-editor of Veterinary Team Brief. Kara also works as an independent nutritional consultant.

Kara is a member of many national, international, and state associations and holds positions on numerous boards; AAVN executive board technician liaison; Western Veterinary Conference Technician Education Manager; LGVMA board Treasurer; Society of Veterinary Medical Ethics Board; International Society for Sports Nutrition; and the Pet Nutrition Alliance executive board, just to name a few.

She has authored many articles, textbooks, and textbook chapters and is an internationally invited speaker focusing on topics of nutrition, leadership, and technician utilization.

Ms. Burns has been featured on the cover of the Veterinary Technician Journal and the NAVTA Journal. She was named the 2013 North American Veterinary Conference Technician Speaker of the Year. She was granted an honorary VTS (Internal Medicine) in 2011. She was also granted an honorary VTS (Dentistry) in 2012. She is the 2010 NAVTA Veterinary Technician of the Year, as well as the 2011 Dr. Franklin Loew Lecturer. Kara has been named the National Association of Professional Women ‘Woman of the Year’ for 2010-2011, and the Cambridge Who’s Who in Professionals V.I.P. for 2010-2011. She was accepted into the International Women’s Leadership Association in 2012.

She enjoys spending time with her wife Dr. Ellen Lowery and their children. The family also includes two sheep, chickens, a French bulldog, A Border collie/Aussie mix, 6 birds, and 5 indoor cats (one of which is three legged)!

**President Elect**
Erin A. Spencer, M.Ed., CVT, VTS (ECC)

Erin Spencer is a CVT living in New Hampshire and working in Massachusetts. The majority of her career has been spent working in Emergency and Critical Care and she still picks up relief shifts whenever she can. She earned her VTS (ECC) in 2011. After spending time as the technician manager for IVG Hospitals, Inc. (now ETHOS Veterinary Health), Erin transitioned to the non-profit world and worked with the HSVMA Rural Area Veterinary Services (RAVS) teaching program as both a field technician and the volunteer coordinator. It was then Erin realized that teaching was the path she wanted to pursue. While she continues to spend her summers with RAVS, she earned her M.Ed. in 2015 from Colorado State University and began teaching full-time at Mount Ida College the same year.

Erin currently works as an Assistant Professor in the Veterinary Technology program where she teaches a variety of courses, her favorite being introduction to Veterinary Technology where she gets to welcome new students to the profession. Erin lectures both regionally and nationally and is currently working on a book focusing on neonatal and pediatric nursing care. Erin has served on the board of the Massachusetts Veterinary Technician Association for a number of years and is the immediate past president of the organization. She also serves on the NAVTA Approved Veterinary Assistant committee, as well as the nursing standards, credentials, and mentoring committee for the Academy of Veterinary Emergency and Critical Care Technicians (AVECCT).
Secretary
Beckie Mossor, RVT

Beckie Mossor currently resides in Wilmington, North Carolina. She is a 2007 graduate of Central Carolina Community College. Beckie has enjoyed a diverse career background including working at small animal, exotic, large animal, and mixed animal practices; and in academia and consulting. Beckie is currently the Executive Director of 3K9 Working Dogs Inc., a service dog training organization dedicated to advocating for the rights of working dogs and their handlers. In addition, she is a K9 Fit Club Master Trainer and a part time Q & A expert for PetMD.

She serves on the board of the National Association of Veterinary Technicians in America, the North Carolina Association of Veterinary Technicians, the Society for Veterinary Medical Ethics, and the Veterinary Team Brief Advisory Board.

Beckie has enjoyed expanding her veterinary career through private consulting, public speaking, professional writing, professional blogging, and podcast co-host of the Veterinary Viewfinder.

Treasurer
Michelle D. Krasicki-Aune, MBA, BS, CVT

Michelle’s calling to work in veterinary medicine was evident from a young age. After becoming an on the job trained assistant at a large Chicagoland veterinary hospital at a young age, Michelle graduated from North Dakota State University with a Bachelor’s of Science in Veterinary Technology. Following graduation, she received her credentials as a Certified Veterinary Technician from the state of Minnesota. She furthered her education and received her Masters of Business Administration, with an emphasis in Veterinary Medicine Management. During this time, she worked in a variety of private small animal and mixed animal hospitals, veterinary teaching hospitals, and in specialty and referral hospitals.

During her career, Michelle has served four terms on the Executive Board of the Minnesota Association of Veterinary Technicians, worked as an educator for over eight years, and provided technical editing and question creation for upcoming textbooks, all while finding time to contribute to conferences such as AVMA, AAHA, MVMA, CVMA and ISVMA.

Currently Michelle spends her time volunteering on the Minnesota Practice Act Committee, various NAVTA committees, NEPRIS, and owning and operating Vet Teams, LLC, where she provides relief and management services for various companion animal and specialty practices.

Member at Large
Kenichiro Yagi, MS, RVT, VTS (ECC), VTS (SAIM)

Over the 17 years in practice, Ken has discovered and refined his role as a veterinary technician by promoting compassionate and progressive care for the patients and their family. He obtained his VTS certification in emergency and critical care as well as small animal internal medicine and obtained his master’s degree while practicing at his current place of employment, Adobe Animal Hospital, as an ICU Manager and Blood Bank Manager. Ken’s role has progressed from directly caring for patients to providing an environment for others to do the same.

Ken works to encourage further recognition of the vital role of the veterinary nurses and technicians through work with organizations such as the National Association of Veterinary Technicians in America co-chairing the Veterinary Nurse Initiative, and serving as a board member of the Veterinary Emergency and Critical Care Society, the Academy of Veterinary Emergency and Critical Care Technicians, and the Veterinary Innovation Council. He pursues these goals by showing the value of the profession’s perspective in veterinary medicine.

His endeavors are made possible through support from his family, Iris, Haruto, and Haruka. Ken invites everyone to ask “Why?” to understand the “What” and “How” of our field, and to constantly pursue new limits as veterinary professionals and individuals.

Member at Large
Elizabeth (Beth) Green, RVT

Beth began working in veterinary medicine after graduating from AB Tech’s Veterinary Technology program in 2006. In addition to being an RVT, she is also a CPhT (Certified Pharmacy Technician). And she is currently pursuing her Bachelor’s degree in Business Management. Beth lives in Hendersonville with her husband, James, and daughters, Adeline and Lorelei. Together they have four dogs (Pax, Mya, Gibbs and Patches), one cat (Ruby). In her spare time she is kept busy with homework, as well as being the Member are Large on the board for the North Carolina Association of Veterinary Technicians. However, she most cherishes spending time with her family and fleeting moments of pleasure reading.
Past President
Mary Berg BS, RLATG, RVT, VTS (Dentistry)

Mary Berg received her B.S. in Biology/Microbiology from South Dakota State University. She earned an A.S. in Laboratory Animal Science from Redlands Community College, and an A.S. in Veterinary Technology from St. Petersburg College. She is a Charter member of the Academy of Veterinary Dental Technicians and received her Veterinary Technician Specialty in Dentistry in June 2006.

In addition to serving as the NAVTA President, Mary is currently serving as the treasurer of the AVDT and is the president-elect of the Kansas VTA. Mary worked in research for over 24 years, specializing in products aimed at improving oral health of companion animals. She was the practice manager and dental technician specialist at Gentle Care Animal Hospital in Lawrence, Kansas for over seven years and is currently the President of Beyond the Crown Veterinary Education, a veterinary dental consulting service.

Mary has published several articles in various professional publications, and is a speaker and lab instructor at international, national and state conferences.

Mary is a 4-H volunteer and is active in her church and community. Mary and her husband, Doug, have two sons and live on a farm near Lawrence, Kansas with a menagerie of animals.

Executive Director
Julie Legred, CVT

Julie graduated from the University of Minnesota with an Associates degree in Applied Science in Animal Health Technology. She has worked in many areas of veterinary technology including small animal and exotic practices, research, education, swine genetics, corporate medicine, leadership, management and consulting.

Julie has been very active in the Minnesota Association of Veterinary Technicians for the past 18 years. She has served on the National Association of Veterinary Technicians in America as Member at Large, and President (2008 and 2011). She was on the American Veterinary Medical Association’s (AVMA) Committee on Veterinary Technicians Education and Activities (CVTEA) since 2005 as a full committee member. She has held the veterinary technician board position on the Companion Animal Parasite Council since 2009. She is also serving on the Fear Free Veterinary Visits Advisory Board and is very active with the Partners for Healthy Pets initiative.

In addition, Julie is a speaker and author on numerous topics. Julie is also a hockey, baseball, and football mom to four boys, and has been married for 21 years.

NAVTA Special Recognition

NAVTA Veterinary Technician of the Year
Mary Ellen Goldberg BS, LVT, CVT, SRA, CCRA, CVPP

Mary Ellen Goldberg is a graduate of Harcum College and the University of Pennsylvania. She worked at Virginia Commonwealth University in the Division of Animal Resources. She was a member of VCU’s IACUC for ten years. She has been the instructor of Anesthesia and Pain Management at VetMedTeam since 2003.

Mary Ellen has been the Executive Secretary for the International Veterinary Academy of Pain Management (IVAPM) since 2008. She is a Certified Veterinary Pain Practitioner through IVAPM. Mary Ellen is also a Surgical Research Anesthetist certified through the Academy of Surgical Research. Currently, she is a staff member at the Canine Rehabilitation Institute, as a Certified Canine Rehabilitation Assistant (CCRA). She is also the Exam Chair for the Academy of Laboratory Animal Veterinary Technicians and Nurses.

Mary Ellen has written several books and contributed to numerous chapters regarding anesthesia, pain management, and rehabilitation and speaks at national meetings on these topics. She has worked in various areas of veterinary medicine from small animal and equine to mixed practice medicine since 1976.

Mary Ellen, congratulations, and thank you for all of your contributions to the Veterinary Technology/Nursing Profession!
SCNAVTA Chapter of the Year
Murray State College Veterinary Technology Program

The student chapter at the Murray State College of Veterinary Technology promotes veterinary technology at every opportunity - whether through National Vet Tech Week (NVTW), at the school carnival, or during the annual community-wide holiday celebration. The staff works together on a daily basis to promote the national association, our student chapter, our program and the college itself.

Throughout the year, the chapter participates in numerous community events. This year they implemented an event titled Poochella, in conjunction with the Johnston County Fair. At this event, the chapter distributed backpacks to community students and held a dog talent/costume contest. During the spring semester the club hosts a low-income spay and neuter clinic, which lasts an entire day and is worked solely by students and instructors. In December, the club sponsors the season’s most popular and well-attended event, Santa Night. For this event, they invite children from the community to come meet Santa and Mrs. Claus! Last year, the club distributed about 700 gifts along with hot chocolate and cookies. Thanks to funds raised by the club, the event is offered free of charge and open to all.

To celebrate National Veterinary Technician Week, the club hosted an Open House for elementary students. Visitors on the guided tour even took in a viewing of live surgery. Following the Open House, the 2nd Annual Veterinary Technician Olympics took place including a series of games and relays based around the professions commonly performed skills.

The chapter regularly makes donations to organizations such as the Oklahoma Wildcare Foundation and the Endangered Ark Foundation. Club members participate in campus blood drives and take dogs to visit a local nursing home for monthly animal therapy sessions.

Congratulations to the Murray State Veterinary Technology Program, SCNAVTA Chapter of the Year!

SCNAVTA Advisor of the Year
Dawn Ritter, LVT

Good deeds often go unrecognized, and Dawn Witter performs good deeds on a daily basis without ever expecting recognition. Dawn serves as the chapter advisor for the Northern Virginia Community College’s Veterinary Technology Program Student Chapter of the National Association of Veterinary Technicians. Dawn serves faithfully and with exuberance. She is the epitome of a good role model for students and has proven her dedication to not only the chapter but to the entire profession of veterinary technology.

Dawn is always volunteering her time at student events and making members aware of upcoming continuing education opportunities.

Dawn is always present with encouraging words, as well as constructive critiques, in support of future licensed veterinary technicians and to guide the incoming class of 2019.

The biggest event of the year for the student chapter is the Annual Dog Wash and Rabies Clinic. Dawn helped organize and provided ideas on how to make the event more successful than years past. She even donated some of her own money to the cause! On the day of the event Dawn provided pizza lunch for the volunteers, which was very appreciated. The event raised a little over $2,000 more than the previous class, which can be attributed to Dawn’s role in helping organize the event.

Not only is Dawn Witter a chapter advisor, she is one of three LVTs that help teach every day. Her “tech tips” help students during class and in practice as well. Her organizational skills and dedication should be emulated by other chapter advisors to help future LVTs. Ms. Dawn Witter is more than deserving of the honor to be named NAVTA Student Chapter Advisor of the year.

Congratulations Dawn Ritter, SCNAVTA Advisor of the Year!
NAVTA BENEFITS
As a NAVTA member you receive:

- Receive NAVTA Journal and Enewsletters
- Complimentary access to the NAVTA CE Portal and CE modules
- Robust Career Center and resources
- 20% membership discount if you are a specialist or member of your state association
- 10% discount on VetMedTeam.com courses
- 10% off Puppy Start Right for Instructors Course, hosted by the Karen Pryor Academy
- 20% discount on Vetlexicon, the worlds largest online clinical reference source, provided by Vetstream. In addition, NAVTA members can receive a free, 30 day trial!
- 20% off FearFree Certification
- Discounts on movie tickets, theme parks, hotels, tours, Broadway and Las Vegas Shows!
- Discounts with Embrace Pet Insurance
- 10% discount on all online purchases at www.scrubidentity.com
- $5.00 off David Liss offerings
- Complimentary membership with VetCheck - the amazingly simply veterinary communications software!
- 5% discount on Disability Insurance through VetInsure
- 10% discount from Petplan Pet Insurance
- 50% discount on annual memberships with TrustedHousesitters
- 20% discount on annual subscription to VetCompanion®
- 25% discount and free shipping on Elsevier titles
- 15% discount for I Love Veterinary Medicine merchandise

COMING IN EARLY 2018 special NAVTA health, wellness and lifestyle discount programs.
The Role of Nutrition and Client Communication in Dogs with Food Allergies

Vicky Ograin, MBA, RVT, VTS (Nutrition)
Dana Hutchinson, DVM, DACVN

LEARNING OBJECTIVE:
Upon reading this article, participants will be able to discuss the diagnosis of adverse food reactions, compare and contrast novel and hydrolyzed diets, and outline the essential elements of successful client education.

Clients bringing in itchy dogs are a common occurrence in veterinary medicine. Pruritic dogs are frequently challenging appointments for the veterinary healthcare team (VHCT) and often frustration follows on both the part of the VHCT and client as we work together to improve the quality of life for these pets.

Dermatologic diseases rank third and fourth among the most common conditions affecting dogs in the United States and is the most common reason dog owners submit pet insurance claims.1,2 Many of these appointments are the result of pruritus due to allergic skin disease, and in dogs this is most commonly caused by one of three conditions: adverse food reaction (AFR), flea allergy dermatitis, or canine atopic dermatitis (CAD). Adverse food reactions can be further broken down into food allergies, which are caused by an aberrant immune response to a food, and food intolerance, which is an abnormal physiologic response to a food that is not immune-mediated.

So why is canine pruritus so challenging to treat? Many factors play a role, including but not limited to identification of an accurate diagnosis, thoroughness and clarity in communication of the therapeutic plan to the owner, compliance from the owner to follow treatment instructions,
and a need to better exploit multimodal therapy when managing these patients. Nutritional modulation of dermatologic conditions is often passed over despite its potential to play a safe, effective, and owner-friendly role in the management of many dermatologic conditions.

**Diagnosis**

Definitively diagnosing AFR in canine patients requires clinical signs and patient history consistent with the condition, a thorough diet history, and an exclusive novel or hydrolyzed food trial. Breeds reported to have a predisposition for AFR include West Highland white terriers, German shepherds, boxers, and Rhodesian ridgebacks, in addition to pugs. Clinical signs in dogs with AFR most commonly manifest as focal, multifocal, or generalized non-seasonal pruritus, but may also manifest as otitis, seborrhea, superficial pyoderma or even as atopic dermatitis in some dogs. It is also common for AFR to include recurrent ear infections, often with bacteria or yeast, especially only in one ear. Other common areas affected by AFR include feet, inguinal region, axillary area, proximal anterior forelegs, periorbital region and muzzle. Because the clinical signs of dogs with AFR can be diverse, it is also important to consider the age and other non-dermatologic signs present in the patient. Some dogs with AFR first present with signs at a young age and have both dermatologic signs as well as gastrointestinal signs.

The importance of obtaining a thorough diet history in the diagnosis of canine AFR is frequently underestimated. While time-consuming, a detailed diet history gives clues as to the likelihood that AFR is a probable differential diagnosis for the patient. The patient history may provide information suggestive of another diagnosis, such as reported seasonality of the dog’s pruritus likely caused by an environmental allergy, or the frequent use of treats and human foods may be the underlying cause of owner-reported episodes of gastroenteritis. The diet history should be detailed and thorough. It is important to identify any toys or medications that may be a source of nutrients like chew toys, flavored heartworm prevention, or antibiotics. Many owners do not consider toys to be part of the dog’s meal, like rawhides or pig’s ears, but they could contribute to food allergy. Also many owners may add an attractant to a toy to encourage good behavior, like a rubber toy with cheese spread or peanut butter in it to help keep the dog distracted. There are many sources of nutrients that can be missed because they are not thought of as a traditional source of food. It is imperative that everything is identified. In order to consistently report all important diet history details, it is helpful to utilize a Diet History Form such as the one that can be found at wsava.org/nutritiontoolkit.

Several important questions should be included when taking a diet history from an owner with a dog with suspected AFR (Box 1). These questions should not be only specific to foods and treats fed by the owners, but should also examine other sources of foods offered to the dog by children, dog walkers, grandparents, and other individuals who have contact with the pet. It is frequently helpful to allow the owner to fill out the Diet History Form at home so as to be as accurate as possible when recording foods and treats given.

Specific and open-ended questions are encouraged when taking a diet history to ensure that the owner feels comfortable sharing openly. For example, it may be useful to ask, “What treats does Teddy get when he comes in after going to the bathroom?” rather than, “Does Teddy get any treats?” When owners feel that it is assumed their pet receives treats they are more likely to share openly. An effective dietary elimination trial hinges on a complete diet history so that an appropriate food may be identified for the trial, and all other foods may be addressed with the owner. An appropriate food for a dog undergoing an elimination trial contains a single, novel (new to that particular dog) or hydrolyzed protein source identified based on that dog’s unique diet history.

**Novel and hydrolyzed therapeutic foods**

The rationale for the use of a single, novel or hydrolyzed protein food to which the dog has not been previously exposed during a dietary elimination trial for food allergy is that an immune response to a food component can only occur if the dog has previously been in contact with the offending food allergen. This is due to the fact that the dog’s immune system will then respond to the allergen which it has been sensitized to at subsequent exposures. There is nothing intrinsically hypoallergenic about novel proteins; they are simply used because they are novel to the particular pet’s immune system.

For this reason, commercial therapeutic novel protein pet foods ideally contain one intact protein not commonly eaten by pets. These foods are typically highly digestible and therefore appropriate for many dogs with a food allergy resulting in gastrointestinal signs, and contain a limited...
number of ingredients to limit possible antigenic exposure. Most food allergens are proteins greater than 10,000 Daltons in size. Hydrolyzed therapeutic pet foods ideally contain one protein source, which has been hydrolyzed (broken down) to polypeptides less than 10,000 Daltons which reduces the potential allergenicity of the protein. In theory, this results in a protein that cannot accommodate cross linking of IgE receptors on mast cells necessary for mast cell degranulation to take place, and therefore should not be capable of initiating an immune response to an offending antigen in an allergic pet. The value of using a hydrolyzed protein pet food when conducting a food trial is multifold. Since it is the size rather than the uniqueness of the protein that prevents an immune response, a protein which the pet has been previously exposed to can be fed. This can be of particular use in pets that have been adopted. Obtaining a complete medical history for an adopted pet can be difficult. While adoption is undoubtedly a wonderful thing, this can present a challenge when planning an elimination trial to rule out AFR. Fortunately a valuable solution to this common situation exists: Hydrolyzed therapeutic foods. With therapeutic hydrolyzed pet foods, the patient’s diet history is no longer critical to an effective elimination trial. In these cases, a hydrolyzed protein food is most appropriate for an elimination trial. Hydrolyzed foods are also highly digestible which may be beneficial for some pets with gastrointestinal signs due to AFR.

Many therapeutic novel and hydrolyzed food options exist. Choosing a novel or hydrolyzed therapeutic food for an elimination trial should depend on the diet history, owner and pet preferences, concurrent conditions, as well as response to therapy. One contemporary topic often on the minds of owners considering an elimination trial is whether over-the-counter limited ingredient foods may be used for the trial. Countless over-the-counter limited ingredient foods are now available to consumers, many of which contain exotic protein sources and may, at initial inspection, appear appropriate for dogs undergoing food allergy diet trials. Interestingly, a study published in 2011 found that when tested, these over-the-counter pet foods contained trace amounts of common protein sources including soy and beef, which were not disclosed on their ingredient lists. Over the counter foods are typically made in facilities that process other foods with the offending ingredients. Because the foods are not true elimination foods, the quality may not meet the standards for a true novel protein food, making them inappropriate. For this reason, owners willing to invest the time and resources required to conduct an elimination trial should understand the importance of utilizing either a commercial therapeutic novel or hydrolyzed food diet, or a homemade novel protein diet formulated by a board certified veterinary nutritionist, to ensure that the trial is valid. Clients should be advised, the recipes found on the Internet for homemade novel protein foods are not always appropriate. A study published in 2013 showed that recipes written by non-veterinarians for canine maintenance were not well balanced. Most had vague or incomplete instructions and did not include calories, making it difficult to know accurately how much to feed. If a dog is diagnosed with AFR, feeding a long-term balanced maintenance diet is imperative.

In addition to the value of knowing food is not contaminated with protein sources the pet has previously been exposed to, some therapeutic foods developed for pets with food allergies also contain other nutritional characteristics beneficial to pets suffering from AFR, such as supplementation with omega-3 and -6 fatty acids, as well as use of highly digestible ingredients which may benefit dogs with gastrointestinal signs related to AFR.

**Dietary adherence and trial success**

Client education is a critical component of a successful elimination trial. Owners should be made aware that not only must the prescribed food be fed exclusively, but an elimination trial also requires the exclusion of all additional treats and human foods, other than those specifically approved during the 8-12 week trial. A recent review of available evidence found that when an elimination diet trial was followed closely more than 90% of pets with cutaneous adverse food reaction undergoing an elimination diet trial responded by 8 weeks. Owners should be warned that even minimal exposure to other foods (such as treats given by a friend or occasional kibbles snatched from another pet’s food) could potentially inhibit the ability to interpret the results of the pet’s elimination trial. Treats appropriate for pets undergoing a novel or hydrolyzed food trial include the dry form of the food being used in the trial given from a treat box or jar and also therapeutic hypoallergenic treats. While it is important that owners follow specific food restrictions during the trial, it may be helpful to provide appropriate treat alternatives, such as those listed above, to help ensure compliance.

Prior to instituting an elimination trial, owners should be counseled on appropriate substitutions for any flavored medications, supplements and preventatives they are currently administering to the pet which are inappropriate for use during an elimination trial for AFR. During an elimination trial it is also critical that the owner addresses the other individuals that have contact with the pet. These are often the individuals identified during the diet history such as grandparents, dog walkers, etc.

Although undoubtedly challenging for the family of a pet undergoing an elimination trial, it is important to recognize that currently no other diagnostic test is available to accurately diagnose a food allergy. Diligent compliance during an 8-12 week elimination trial will allow the veterinarian to definitively rule out a food allergy in a pet that has not demonstrated resolution of clinical signs despite strict adherence to the prescribed trial. The elimination trial
can also diagnose food allergy in a pet that has shown resolution of clinical signs during the trial with recurrence of signs upon provocation testing. Regardless of the outcome, strict adherence to an exclusive elimination trial for 8-12 weeks provides valuable information that may be used for identifying the underlying cause and managing clinical signs of pets with pruritus.

**Owner communication**

Veterinary technicians can be instrumental in the success of an elimination trial. After the veterinarian has made a diet recommendation, the owners may need additional support to complete the dietary trial. Veterinary technicians are excellent advocates and can help owners with the transition to the new food. They can also answer any questions or concerns that arise during the elimination trial. It is important for the veterinary technician to reinforce the veterinarian’s recommendation for the elimination trial, including exclusively feeding the recommended food for 8-12 weeks, acceptable treats, and other things to watch out for (flavored medications and supplements).

Handouts can be valuable tools used for discussing new foods with owners. When available, use a brochure that specifically discusses the recommended food. If the pet food company does not provide brochures, make your own with basic information about how the food will benefit the pet. Pet owners may not remember all the information covered at the clinic so it is important to give them instructions to review at home. The pet owner can then share the information with family members and others caretakers (grandparents, dog walkers, etc.) who were not present at the veterinary clinic. It is important to provide full instructions on how much to feed and how to transition to the new food. Providing the owner with a measuring cup, or instructing them to purchase an 8 oz. (250 g) measuring cup, can help prevent overfeeding.

The veterinary technician’s role does not end after the initial visit. Follow up is vital to the success of an elimination trial. The veterinary technician should be in contact with the dog’s owner a few days after the visit, and then every few weeks until the elimination trial is complete. The first follow-up call (2-3 days after the visit) is the most important because pet owners may give up on the new food during this period if they are having difficulty with the transition. This is an opportunity to be the owner’s support system and cheerleader and guide them through any difficulties they may be having. It is also an opportunity for pet owners to ask questions that have come up since they went home, especially from family members. Check-ins can help monitor how the pet is responding and keep the owner motivated to continue on the food trial. This is also a good time to check in with the owner to make sure they are following all of the instructions and not sliding into bad habits.

**Summary**

Elimination trials can often be a struggle for owners because their daily routines are impacted. Communication between the owner and the veterinary technician can make a food elimination trial more successful and less stressful for the owner. Once a food allergy is diagnosed, the veterinary technician can help owners understand the importance of feeding a therapeutic food for the rest of the dog’s life. Food allergies can affect quality of life for the pet as well as the pet owner. With proper diagnosis and treatment, the pet will feel better and quality of life will improve for both the pet and owner.

**REFERENCES**


**LET’S REVIEW...**

1. **What is not a common allergic skin disease?**
   - a. Adverse food reactions
   - b. Microsporium Canis
   - c. Flea allergy dermatitis
   - d. Canine atopic dermatitis

2. **What is a common sign for dogs with adverse food reactions?**
   - a. Recurrent ear and gingiva infections
   - b. Seasonal pruritus
   - c. Recurrent ear infections
   - d. Anorexia

3. **Hydrolyzed therapeutic pet foods contain daltons less than?**
   - a. 10,000 daltons
   - b. 60,000 daltons
   - c. 12,000 daltons
   - d. 15,000 daltons

4. **How long is an elimination food trial?**
   - a. 3-6 months
   - b. 4-16 weeks
   - c. 6-9 months
   - d. 8-12 weeks

5. **What is unique about a therapeutic novel protein food?**
   - a. Contains one intact protein not commonly eaten by the pet
   - b. Contains a limited number of ingredients
   - c. Highly digestible appropriate for GI signs
   - d. All of the above

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**VICKY OGRAIN, MBA, RVT, VTS (NUTRITION)**

Vicky Ograin, MBA, RVT, VTS (Nutrition), received her technician degree in 1983. She served in private practice for 18 years before beginning a new career with Hill’s Pet Nutrition 17 years ago. In 2007 she completed a Bachelor of Science degree, and in 2008 she completed her Masters degree, both in Business Administration. Vicky obtained her Veterinary Technician Specialty (VTS) in nutrition in June 2013, and serves as secretary for the Academy of Veterinary Nutrition Technicians (AVNT). She is a life long member of the National Association of Veterinary Technicians in America (NAVTA), and was the 2014 president of NAVTA. Currently she serves as the CE Committee chair for NAVTA.

**DANA HUTCHINSON, DVM, DACVN**

Dana Hutchinson, DVM, DACVN, is a part-time Small Animal Clinical Nutritionist at Angell Memorial Hospital for Animals in Jamaica Planes, Massachusetts. She is also the Senior Manager, Scientific Insights at Hill’s Pet Nutrition. Her work focuses on meeting the unique metabolic needs of patients with a wide variety of medical conditions. Dr. Hutchinson graduated from North Carolina State College of Veterinary Medicine in 2008, and received her specialty training at Tufts Cummings School of Veterinary Medicine. In 2011 she obtained diplomate status in the American College of Veterinary Nutrition.
The best **offense** is a good **defense**

Hill’s **FIRST & ONLY NUTRITION** with HistaGuard™ Complex — formulated to reduce signs of environmental allergies by:

- Disrupting the internal allergy response
- Creating a barrier against future episodes

**PREScription DIET**

**Derm Defense™ with HistaGuard™ Complex**

*Your first defense against future allergy outbreaks with HISTAGUARD COMPLEX, a proprietary blend of bioactives and phytonutrients*

**24/7**

Continuously **NORMALIZES IMMUNE RESPONSE TO ALLERGENS** with natural sources of polyphenols

**Supports SKIN REJUVENATION** with vitamin A, zinc and essential fatty acids

HillsVet.com/Derm
Chronic Pruritus in a Boxer

Izzy, a 3-year-old, 59-lb female boxer, was presented for evaluation of non-seasonal pruritus as one of 20 participants of an in-clinic food trial.1,2 The details of the trial can be found in the discussion section below.

History
Izzy, with a BCS of 2/5, had previously undergone a thorough dermatologic work-up. Parasitic, endocrine, food-related, and other causes of pruritus were ruled out. Despite treatment with subsequent accepted standard therapies for canine atopic dermatitis (CAD) patients, Izzy continued to exhibit a minimum of 5 of Favrot’s3 criteria for diagnosis of CAD.1

Diagnosis
Canine Atopic Dermatitis

Discussion
Diagnosis of atopic dermatitis is confirmed via compatible history, clinical signs, and exclusion of other causes of pruritic dermatitis. Confirmation of diagnosis can be time-intensive. Offending environmental allergens can be both seasonal and non-seasonal, making the diagnosis and management of CAD doubly challenging. Dust, pollen, insects, and other environmental allergens frequently contribute to CAD. Treatment may be necessary on an ongoing basis even if the patient is not continuously exposed to the allergy trigger (eg, non-pollen season).

Canine atopic dermatitis is characterized by a cycle of inflammation, pruritus, and excoriation, leading to repeated skin damage, often for a lifetime. The in-clinic food trial sought to determine if a food designed to improve skin barrier function and lower inflammation (Hill’s® Prescription Diet® Derm Defense™ Canine dog food, provided free of charge to participants for the duration of the trial) would reduce pruritus and clinical severity in client-owned dogs with CAD. The trial included 11 European countries, and the 20 dogs that met inclusion criteria were exclusively fed Derm Defense for 8 weeks. Inclusion criteria included an absence of ectoparasites and skin infections and ≥5 of 8 Favrot’s criteria demonstrated; exclusions included patients on supplements (eg, fatty acids, glucosamine and chondroitin sulfate, antioxidants), with major systemic disease, or with food allergy.

Treatment
As part of a comprehensive, multimodal approach to CAD (see Multimodal Treatment Options for Atopy), Izzy was transitioned to Hill’s Prescription Diet Derm Defense Canine, which she was fed exclusively for 8 weeks. Her owners were advised not to feed any additional supplemental food or treats during this time. Current medications remained unchanged during the course of this trial.

Outcome
At return examination, visible improvement was noted in Izzy’s overall skin condition and haircoat, as well as her level of pruritus, as evidenced by decreased scratching and licking (Figures 1 and 2). Izzy’s owner felt the therapeutic nutrition had improved her quality of life and found it highly effective for managing Izzy’s pruritus long term as part of multimodal atopy management in addition to her previous treatment plan.

HILL’S® PRESCRIPTION DIET® DERM DEFENSE™ WITH HISTAGUARD™ COMPLEX: HOW IT WORKS

Derm Defense is formulated to help support skin recovery and normalize internal response to environmental irritants:

- Defense against future allergy outbreaks and flares with Histaguard™ Complex, a proprietary blend of bioactives and phytonutrients
- Continuously normalizes immune response to allergens with natural sources of polyphenols
- Supports skin rejuvenation with vitamin A, zinc, and essential fatty acids

Multimodal Treatment Options for Atopy

- Environmental allergen reduction
- Parasitic control
- Therapeutic nutrition: Hill’s Prescription Diet Derm Defense Canine
- Topical therapies including medicated shampoo and other topicals
- Medications such as steroids, antihistamines, oclacitinib, canine atopic dermatitis immunotherapeutic, cyclosporine, allergen-specific immunotherapy

More information about Izzy and the in-clinic food trial available at brevieveithills-derm-defense

References
3. Favrot’s criteria are used to help with the interpretation of clinical findings upon the presentation of a pruritic dog
Introduction

In approximately 65% of non-obstructed male and female cats with naturally occurring lower urinary tract disease, the exact cause(s) of hematuria, dysuria, pollakiuria, stranguria and perium are still unknown.1-3 After appropriate diagnostic evaluations, these cats are classified as having idiopathic feline lower urinary tract disease or idiopathic cystitis. In the past decade, over 80 agents or procedures have been recommended for the management of non-obstructive idiopathic cystitis in cats; yet, fewer than 10% of these proposed treatments have been evaluated in controlled clinical trials (Table 1). Debate surrounding the efficacy of various treatments is confounded by the self-limiting nature of clinical signs associated with the majority of cases of idiopathic cystitis. In this setting, any form of therapy might appear to be beneficial as long as it is not harmful. The self-limiting nature of clinical signs in many cats with idiopathic cystitis underscores the need for controlled, prospective, double-blinded clinical studies in order to prove the efficacy and safety of various forms of therapy.

What is the biological behavior of idiopathic cystitis?

Periuria, pollakiuria, stranguria and gross hematuria are the most common clinical signs observed in cats with non-obstructive idiopathic cystitis. Remarkably, these clinical signs subside within 1-7 days without therapy in up to 91% of cats with acute non-obstructive idiopathic cystitis.4-7 Signs may recur after variable periods of time and again subside without treatment. Approximately 40% to 65% of cats with acute idiopathic cystitis will experience one or more recurrences of signs within one to two years.4-7 Recurrent episodes of acute idiopathic cystitis tend to decrease in frequency and severity as cats become older.7 Though recurrent clinical signs in patients with idiopathic cystitis are often assumed to be recurrence of the original disease, recurrent signs may also be the result of a delayed manifestation of the original disease (e.g., spontaneous or iatrogenic urethral stricture), or onset of a different lower urinary tract disease associated with similar clinical signs (e.g., urolithiasis).

We have also encountered a small subset of cats with idiopathic cystitis in which clinical signs persisted for weeks to months or were frequently recurrent. These cats are classified as having chronic idiopathic cystitis. In our experience, less than 15% of cats evaluated because of acute idiopathic cystitis will develop chronic forms of the disease. Whether chronic idiopathic cystitis represents one extreme in the spectrum of clinical manifestations associated with similar etiologic factors, or whether it

In our experience, less than 15% of cats evaluated because of acute idiopathic cystitis will develop chronic forms of the disease.
<table>
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**Antispasmodics**

| Montelukast                   | Propantheline*              | Canned Diets* | Acupuncture |
| Butorphanol                   | Oxybutynin                  | Supplemental Water | Colloidal Silver |
| Buprenorphine                 | Aminopentamide              | Acidifying Diets | Laser Therapy |
| Oxymorphone                   | Atropine                    | Hypoallergenic Diets | Cantharis |
| Fentanyl                      | Acepromazine                | Omega-3 Fatty Acids | Terebinthia |
| Tramadol                      | Prazosin                    | Antioxidants  | Marshmallow Root |
|                               | Phenoxybenzamine            | L-Tryptophan  | Parsley Root |
|                               | Dantrolene                  | Alpha-Casoepine | Uva Uris Leaf |
|                               | Flavoxate                   |              | Corn Silk |

**Dietary Management**

| Environmental Management      | Glycosaminoglycans          |                      |               |
| Environmental Enrichment      | Pentosan Polysulfate*       | Polyporus Mushroom   |               |
| Litter Box Management         | Glucosamine*                | Others               |               |
| Facial Pheromone*             | Chondroitin Sulfate         |                      |               |
|                               | Polysulfated GAG             |                      |               |
|                               | Hyaluronate                 |                      |               |
represents an entirely different mechanism of disease than that associated with acute self-limiting idiopathic disease is unknown.

**What are the potential sequelae of idiopathic cystitis?**

Urethral obstruction and formation of vesicourachal diverticuli are potential sequelae of idiopathic cystitis. While macroscopic vesicourachal diverticuli are often self-limiting, urethral obstruction is a serious and potentially life-threatening complication. Urethral obstruction in cats with idiopathic cystitis may result from:

1. Inflammatory swelling of the urethra
2. Urethral muscular spasm
3. Reflex dyssynergia
4. Intraluminal accumulations of sloughed tissue, inflammatory cells, or red blood cells
5. Formation of matrix-crystalline urethral plugs

We have hypothesized that the formation of matrix-crystalline urethral plugs in cats with idiopathic cystitis occurs as a result of cystitis-induced increased inflammatory matrix production in conjunction with a concomitant, but etiologically unrelated, crystalluria. Supporting this hypothesis is the observation of recurrent episodes of non-obstructive hematuria and dysuria, and episodes of plug-induced urethral obstruction in cats with idiopathic cystitis. These observations suggest that male cats with idiopathic cystitis and concomitant crystalluria are at risk for the formation of matrix-crystalline urethral plugs and urethral obstruction.

**What is the role of nutrition in the management of idiopathic cystitis?**

**Overview**

The goals for treatment of cats with idiopathic cystitis are to improve the quality of life for affected cats and their caregivers by reducing the duration and severity of clinical signs, the rate of recurrence of these signs, and the risk for urethral obstruction. Nutritional factors may potentially influence expression of feline idiopathic cystitis (FIC) and its sequela by:

1. Decreasing urine concentrations of pro-inflammatory mediators and crystallogenic minerals
2. Increasing urine concentrations of anti-inflammatory/proresolving mediators and crystallization inhibitors
3. Increasing solubility of crystalloids in urine
4. Decreasing retention of crystals within the lower urinary tract
5. Minimizing potential management- or environmentinduced risk factors (e.g., stress)

Specific recommendations for the management of cats with acute and chronic idiopathic cystitis should ideally be based on the results of controlled clinical trials that document the efficacy and safety of therapeutic agents and modalities.

Management of cats with non-obstructive idiopathic cystitis should encompass:

1. Thorough diagnostic evaluation to exclude other causes of lower urinary tract disease
2. Client education emphasizing the biological behavior of the disease and lack of controlled studies demonstrating the efficacy of many proposed therapies
3. Consideration of the use of pharmacologic agents to reduce the severity and duration of clinical signs
4. Strategies to minimize urethral obstruction
5. Strategies to minimize the risk of recurrences
6. Avoidance of iatrogenic disease

We approach the treatment of cats with acute idiopathic cystitis by emphasizing client understanding of the disease, administering short-term analgesic therapy to reduce the severity of clinical signs and improving litter box use, and minimizing the risk of recurrences through the use of long-term nutritional and environment management strategies.

**What is the role of moisture?**

Unless complicated by other illness, cats with idiopathic cystitis typically have concentrated and acidic urine. The prevalence and magnitude of crystalluria is variable; however, the prevalence of crystalluria in cats with idiopathic cystitis does not differ significantly from that of unaffected cats. While crystalluria, per se, does not appear to be a risk factor for non-obstructive idiopathic cystitis, it has been hypothesized that high concentrations of normal and/or abnormal components in urine may be toxic to the urinary bladder tissues in affected cats. The comparative effects of wet and dry forms of a diet designed to lower urine pH on the frequency of recurrence signs in cats with idiopathic cystitis was evaluated in a non-randomized, open, prospective study. Signs of lower urinary tract disease recurred in 11 of 28 (39%) cats fed the dry diet, and in 2 of 18 (11%) cats fed the moist diet. Although the basis for the beneficial response associated with the canned diet was not determined, cats consuming the moist diet had a significantly lower urine specific gravity (range 1.032 to 1.041) than those consuming the dry diet (range 1.051 to 1.052). Based on these observations and until other randomized controlled studies are available, we routinely recommend increasing dietary water intake by feeding moist food or by use of other strategies designed to increase water consumption.

**What is the role of acidifying magnesium restricted foods?**

As of yet, there is no known benefit of urine acidification or magnesium restriction in the etiopathogenesis of non-obstructive idiopathic cystitis. However, urethral
NAVTA provides affordable, easy-to-use health, wellness and lifestyle discount programs that are a great fit for our members.

Understanding the Plans
With our plans, you have access to major discounts and easy-to-see savings on regular, specialty and cosmetic dental treatment, vision services, telemedicine, and more! **Below is a comparison of what’s included in each plan.**

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**COMING SOON!**

THIS IS NOT INSURANCE.
Although dietary omega-3 fatty acids have benefitted people, dogs and cats with a variety of metabolic and chronic inflammatory conditions, the specific therapeutic effects of omega-3 fatty acids and vitamin E have not been evaluated in cats with idiopathic cystitis or urolithiasis.

Hill’s® Prescription Diet® foods have not changed. And many have the added benefit of being formulated to promote a urinary environment that reduces the risk of developing struvite and calcium oxalate crystals, in addition to managing the primary condition. We’re introducing the S+OXSHIELD™ seal to help you quickly identify these foods and make it easy to communicate this benefit to clients.

Formulated to help reduce the risk of struvite and calcium oxalate crystals.

Hill’s® Prescription Diet® foods have not changed.

And many have the added benefit of being formulated to promote a urinary environment that reduces the risk of developing struvite and calcium oxalate crystals, in addition to managing the primary condition. We’re introducing the S+OXSHIELD™ seal to help you quickly identify these foods and make it easy to communicate this benefit to clients.

To learn more about our foods, please talk to your Hill’s Representative.
obstruction is a potentially life-threatening sequel in male cats with idiopathic cystitis that may result from the formation of matrix-crystalline urethral plugs.\textsuperscript{2,5,9} Because insoluble microscopic crystals appear to be an integral part of many matrix-crystalline urethral plugs, using medical protocols to prevent crystal formation in patients at risk for urethral obstruction is logical.\textsuperscript{10} Over the past three decades, struvite has consistently been the primary mineral component of most urethral plugs, although other mineral types may be encountered.\textsuperscript{13} Successful prevention of recurrent urethral obstruction caused by struvite- containing urethral plugs using a struvite calculolytic diet to reduce urine pH and urine magnesium and phosphorous concentrations has been reported.\textsuperscript{14} More recent studies indicate that acidifying, low-magnesium maintenance diets formulated to promote the formation of urine with struvite relative supersaturation (RSS) values of <1 effectively dissolve struvite uroliths in vivo.\textsuperscript{15,16} Presumably, these diets also would be beneficial in reducing struvite crystalluria and the risk of struvite-induced urethral plug formation in male cats with idiopathic cystitis. However, clinical studies confirming this hypothesis have not been reported.

**What is the role of “multipurpose” urinary therapeutic foods?**

More recently, several so-called feline “multipurpose” urinary therapeutic foods have been developed that are intended to simultaneously manage the combination of risk factors associated with idiopathic cystitis, struvite-, and calcium oxalate-induced lower urinary tract disorders.\textsuperscript{15-18} Multipurpose foods have the advantage of allowing long-term feeding of a single maintenance diet to manage risk factors for lower urinary tract disorders that may occur at different lifestages. In addition, use of a multipurpose food for elimination and prevention of struvite uroliths eliminates the need to transition cats to a different maintenance food following dissolution.

Multipurpose foods may also foster greater owner compliance by allowing for the convenience of feeding all healthy cats in a household a single food. Urinary bladder inflammation is a characteristic feature of idiopathic cystitis and urolithiasis.\textsuperscript{19} Long-chain omega-3 (n-3) polyunsaturated fatty acids such as eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) and antioxidants such as vitamin E are potent anti-inflammatory agents.\textsuperscript{20,21} Studies in cats indicate that the consumption of fish oil products results in EPA/DHA incorporation into cell membrane phospholipids in a dose dependent manner.\textsuperscript{22} By shifting the substrate for eicosanoid biosynthesis from arachidonic acid to EPA and DHA, synthesis of proinflammatory eicosanoids via the cyclo-oxygenase (COX) and lipoxygenase (LOX) pathways is decreased and production of anti-inflammatory and inflammation-resolving eicosanoids is increased.\textsuperscript{23} Similarly, vitamin E is a potent antioxidant which also has anti-inflammatory properties. Oxidative stress and increased free radical-induced peroxidation of cell membrane phospholipids may cause tissue injury by impairing cell membrane functions and inducing inflammation through the generation of pro-inflammatory cytokines and prostaglandins.\textsuperscript{21}

Omega-3 fatty acids and vitamin E have been advocated for management of inflammatory lower urinary tract disorders of cats and are frequently included in commercial multipurpose urinary therapeutic foods.\textsuperscript{17} Although dietary omega-3 fatty acids have benefitted people, dogs and cats with a variety of metabolic and chronic inflammatory conditions, the specific therapeutic effects of omega-3 fatty acids and vitamin E have not been evaluated in cats with idiopathic cystitis or urolithiasis. Interestingly, consumption of omega-3 fatty acids by people with hypercalciuria and recurrent calcium oxalate urolithiasis was associated with significant reductions in urinary calcium and oxalate excretion.\textsuperscript{20,21} Commercially available feline multipurpose urinary foods vary considerably in their omega-3 fatty acids and vitamin E content.\textsuperscript{17} Additional studies are needed to better define the optimal therapeutic dose range of omega-3 fatty acids and vitamin E, and to evaluate the safety and efficacy of feline multipurpose urinary foods for the long-term management of idiopathic cystitis and urolithiasis.

**Investigating the role of nutrition in idiopathic cystitis: A controlled clinical trial**

We have recently completed a prospective, randomized, double-masked study evaluating the efficacy and safety of a multipurpose therapeutic urinary food, enriched with omega-3 fatty acids (EPA and DHA) and antioxidants, for the long-term management of acute idiopathic cystitis.\textsuperscript{24} Young to middle-aged, indoor, male or female neutered cats with clinical signs of acute idiopathic cystitis (≥ 2 lower urinary tract signs in the past week) were recruited for the study at Michigan State
A thorough diagnostic evaluation was performed to exclude systemic illnesses and other causes of lower urinary tract signs. Cats were excluded from the study if they lived in multi-cat households (>2 cats) and owners could not comply with feeding exclusively the test or control foods; had recently consumed urolith dissolution foods; or had been treated with any drug or supplement that could potentially affect diagnostic evaluation or expression of clinical signs (e.g., antimicrobics, antihistamines, antidepressants, antiinflammatories, glycosaminoglycans or nutritional supplements). Owners could choose whether they wanted to offer wet or dry food exclusively and then cats were assigned randomly to either the test or control food groups. Investigators and pet owners were masked to treatment groups for the duration of the 12-month study. The test food was a commercially available multipurpose urinary therapeutic food (i.e., Hill’s® Prescription Diet® c/d® Multicare). The control food was custom manufactured and was formulated to meet or exceed Association of American Feed Control Officials (AAFCO) requirements for adult cats. The mineral concentrations and target urine pH of the control food were designed to mimic common grocery brands. Compared with the test food, the control food contained substantially lower concentrations of antioxidants and omega-3 fatty acids (EPA and DHA).

The primary endpoint measured was the frequency of recurrent episodes of lower urinary tract signs within 12 months. A recurrent episode was defined as an initial day with ≥2 clinical signs (hematuria, dysuria, stranguria, pollakiuria and/or periperuria). An episode was considered to have resolved when there were two consecutive days with ≤1 clinical sign. Because certain behaviors (e.g., periperuria) may be acquired as a result of lower urinary tract diseases and persist despite resolution of the underlying disease, this definition of episode resolution was chosen to minimize potential bias of acquired persistent behaviors on outcome assessments. Once enrolled, lower urinary tract signs (periperuria, stranguria, hematuria and pollakiuria), daily food consumption, environmental changes, additional treatments, and any other signs of illness were documented daily by the owner for a period of one year. Owners were instructed to return to the veterinary hospital should a recurrence of clinical signs occur and also for scheduled rechecks at 1, 3, 6, 9 and 12 months.

Twenty-five cats ranging in age from 1 to 9 years were included in the study. Eleven cats (5m, 6f) were fed the test food and 14 cats (11m, 3f) were fed the control food. Data was analyzed as a binomial proportion of the number of days that an event occurred or the number of episodes of lower urinary tract signs out of the total number of days a cat was in the study for a factorial arrangement of two diets and two formulations. Both study groups were similar with regard to age, sex, body condition score, food preference, residence, prior episodes of lower urinary tract disease, and prior treatment with therapeutic foods. Cats consuming the test food had a significantly lower proportion of total days with ≥2 clinical signs and total episodes of lower urinary tract signs (P<0.05) with 4/11 (36%) test food group cats and 9/14 (64%) control food group cats exhibiting ≥2 clinical signs on at least one occasion during the 12-month study. The rate of recurrent episodes of lower urinary tract signs was 5/3,904 days (1.28/1,000 cat-days) in the test food group and 47/4,215 days (11.15/1,000 cat-days) in the control food group. This represents an 89% lower overall rate of recurrent episodes of lower urinary tract signs in cats fed the test food consistently compared with the control food group. This is the first study to definitively show that foods of different nutritional profiles impact the expression of lower urinary tract signs in cats with acute idiopathic cystitis.

**Key points for applying the study’s scientific results to clinical patients in practice**

- Long-term feeding of a multipurpose urinary therapeutic food was associated with a significant reduction in the rate of recurrence of new episodes of lower urinary tract signs in cats with acute idiopathic cystitis compared to feeding a control diet mimicking common grocery brands.
- The basis for the beneficial diet effect was undetermined, but may involve enhanced levels of omega-3 fatty acids and vitamin E.
- The multipurpose urinary food should be fed consistently as the exclusive food to minimize the long-term risk of recurrent episodes of clinical signs of idiopathic cystitis in male and female cats, and the risk of urethral obstruction in male cats.
- The efficacy of the multipurpose urinary food for controlling recurrent signs in cats with chronic idiopathic cystitis was not determined. However, we predict that the multipurpose food would also be of benefit in minimizing recurrence of signs and reducing the risk of urethral obstruction in cats with chronic forms of the disease. Proof of this hypothesis requires further investigations.

**REFERENCES**


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John M Kruger, DVM, PhD, DACVIM, received his DVM from the University of Minnesota in 1980, and a PhD from the same university in 1989. He became a Diplomate in the American College of Veterinary Internal Medicine in 1990. Dr. Kruger is currently a professor at Michigan State University and associate chairperson for research in the Department of Small Animal Clinical Sciences. He is also the director of the Center for Feline Medicine and Well-Being.

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Jennifer MacLeay, DVM, PhD, DACVIM, received her DVM from Ohio State University in 1993. She completed an internship in Charlottesville, VA and her residency and PhD at The University of Minnesota. She is boarded in the American College of Veterinary Internal Medicine in Large Animal Internal Medicine. Dr. MacLeay joined Hill’s Pet Nutrition as a Medical Director in January of 2009.

**CARL A. OSBORNE, DVM, PHD, DACVIM**

Carl A. Osborne, DVM, PhD, DACVIM, graduated from Purdue University in 1964 and obtained a PhD from the University of Minnesota in 1970. He was a Diplomate of the American College of Veterinary Internal Medicine. Dr. Osborne was the founder of the Minnesota Urothol Center. Dr. Osborne was a member of the College of Veterinary Medicine faculty of the University of Minnesota for 53 years.
Post-Surgical Care Protocol

Jennifer Kasten, DVM
Advertorial sponsored by Hill’s Pet Nutrition Inc.

Let’s use Rose, a 6-month-old bichon frise, as a hypothetical case to demonstrate a pet’s experience eating a food, integrated in the post-surgical protocol, that supports digestive care as part of its recovery from surgery. In this example, Rose was presented for a routine ovariohysterectomy.

History
The owners acquired Rose at 8 weeks of age. On examination, the puppy was healthy, free of parasites, and current on vaccinations. Surgery went as planned without complication.

From Recovery to Discharge
Even the most routine cases have special needs in the days after surgery. Although pain management and wound care might more immediately command the attention of practitioners, a patient’s nutritional needs and owner follow-up should not be overlooked. Recommended length of post-surgical feeding is 7 days. It is important for early nutritional support to provide energy and protein to promote recovery.1

Rose recovered unremarkably from anesthesia. Four hours after extubation, she was offered a few bites of Hill’s® Prescription Diet® i/d® canned food, which she tolerated well. A veterinary technician offered Rose to her owners later in the day with a detailed post-surgical care and nutrition protocol. As part of the routine patient discharge protocol, the office staff handed a Get Well Soon card with nutrition discharge instructions to the client recommending Prescription Diet® i/d® food.

**CLIENT DISCHARGE INSTRUCTIONS**

- Feeding instructions based on the dogs body weight
  - Evening of surgery: Feed small meal
  - 1-5 days post-surgery: Feed half of Prescription Diet® i/d® can in morning and evening
  - 6-7 days post-surgery: Gradually reintroduce current food for this pet by mixing with Prescription Diet® i/d® food
  - 8 days post-surgery: Resume normal ration
- Leash walks only, for elimination purposes, only, until suture removal
- Keep Elizabethan collar in place until suture removal
- Give pain medication as directed
- Schedule recheck examination now for suture removal in 10-14 days

*See insert for a convenient post-surgical feeding protocol tool*

**NUTRITIONAL ATTRIBUTES THAT SUPPORT POST-SURGICAL RECOVERY**

- Highly digestible formula: Helps patients absorb nutrients necessary for recovery
- Prebiotic fiber: Feeds beneficial gut bacteria, which may be compromised by medication
- Complete & balanced nutrition: Suitable for puppies and adult dogs

**From Discharge to Recheck**
Follow-up telephone correspondence 24 hours after discharge indicated Rose was doing well. The owner reported the puppy seemed comfortable, ate her morning meal, and had no signs of nausea or gastrointestinal upset. As instructed by the discharging technician, the owner had been providing the puppy with pain medication. The owner indicated the incision was somewhat red but not swollen. The only concern was that Rose seemed frustrated with the Elizabethan collar.

Rose was presented for suture removal 10 days after discharge. The incision had healed, and sutures were removed without incident. The owner thanked the veterinarian for the Get Well Soon card.

**TIPS FOR SUCCESS INTRODUCING NUTRITIONAL SUPPORT INTO A POST-SURGICAL PROTOCOL**

- Engage client in nutrition conversation at patient drop-off: – Ask “What are you going to feed your pet tonight?”
- Provide written and verbal post-surgical care instructions (see Client Discharge Instructions)*
  - Improve owner understanding and compliance
  - Ensure clear instructions are included for pain control and nutritional support
  - Dispense an adequate number of Prescription Diet® i/d® cans for 7 days at time of discharge; use 6-can Prescription Diet® i/d® food carriers or dispense full-can cases
- Use follow-up phone calls
  - Check patient status, including appetite and food tolerance, within 24 hours of discharge
  - Address owner concerns
- Mail or hand over the Get Well Soon card to demonstrate compassionate care

“All of my routine elective surgical patients are discharged with an adequate supply of Hill’s® Prescription Diet® i/d® canned food. …… Pets do well with the protocol. Owners are very satisfied. My staff fields fewer phone calls from concerned owners, increasing our practice efficiency.”

—Dr. Mark Sprayberry of Olive Branch Pet Hospital (Pensacola, Florida)

**References**


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POST-SURGICAL NUTRITION PROTOCOL

Help your patients get well soon

Surgeries are stressful for your clients. With active post-surgical nutrition protocol, you can provide:

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• Peace of mind for pet parents
• Nutritional support to help your patients recover quickly

Hill’s Prescription Diet® i/d® is an optimal post-surgical choice.

- Highly digestible to help pets absorb nutrients necessary for recovery
- Gentle on the pet’s GI tract — ideal to support nauseated patients
- Promotes beneficial gut bacteria which may be compromised by medication

Order your free post-surgical nutritional support material through your Hill’s Representative today.

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