WESTIE FOUNDATION OF AMERICA, INC
Leading the Way to Westie Health

Westie WELLNESS

Spring • Summer • Fall • Winter 2022

IN THIS ISSUE

Darlene Reilly, Editor
Reilly Designs, LLC • reillys44@gmail.com

PRESIDENT'S MESSAGE

Bebe Pinter

Year 2022 has zipped by. Once again this Westie Wellness issue combines 2022 issues to overview the year.

At long last, after two years, the Westie Foundation of America's Board of Directors met for its annual meeting on Wednesday, October 5, 2022, followed by an informal reception in early evening. Business included re-election of the officers/directors and Advisory Council new members and approval of the 2023 Budget, financials, grants, and Committees' projects. We welcomed the return of Ann Marie Hollowathy as a director and Kathleen Farrell, Linda Martino and Roxanna Twedt as members of the Advisory Council beginning in January 2023. Directors received updates on the status of the donor designated endowment, current grant studies and projects including but not limited to:

1. National Institute of Health/University of Tufts (Pulmonary Fibrosis),
2. University of Miami (Atopic Dermatitis) Final Study Report posted to WFA website,
3. University of Edinburgh (Pulmonary Fibrosis), and
4. The Westie Foundation of America Biobank (WFA Biobank).

In 2022, the WFA funded the WFA Biobank and three scholarships, the Board approved $30,000 for five grants targeting Canine Superficial Pyoderma (University of Illinois), Atopic Dermatitis (University of Florida), Canine Lymphoma (Ohio State University), Bladder Carcinogen (University of Wisconsin), and Canine Hemangiosarcoma (Ethos Discovery). We are in discussion with a Cornell University research team as a potential participant in a Legg-Calves Perthes study. We will keep you posted.

The WFA continues to maintain a vigorous research schedule, despite the last two years of challenges due to the pandemic. Research enables the breakthrough solutions to health problems and terminal illnesses affecting our Westies. Some exciting news—a dedicated donor has established a donor-designated endowment fund with the WFA.

(Continued on page 2)

(President's Message continued from page 1)

Named the Karen R. Heere Endowment for Research in Cancer Affecting West Highland White Terrier Dogs Fund, you too can donate to this fund if you desire. Just include a note to Jim McCain, Donor Manager when you submit your donation.

BREAKING!! The Westie Foundation of America Biobank is a reality! As you are aware, our Board of Directors has dreamed for years of having a DNA repository to be used for research discovery, breed preservation, and other benefits to the Westies. Thanks to Dr. Kay McGuire and the Health Committee, we are elated to report that the WFA Biobank is operational. We are delighted that our West Highland White Terrier Club of America's Board has pledged its full support.

Congratulations to the two $5,000 winners of WFA Daphne Gentry Scholarship 2023 award: (1) Melonie Zuecher, University of Florida and (2) April Johnson, Tuskegee University. In addition, another $5,000 award will be given to sponsor a vet student to the Clinical Scientist Fellowship. Susie Stone, Scholarship Committee Chair, will provide names of winners and details about past winners for the Scholarship page of the WFA website.

In this issue, our own Dr. Valerie Fadok again does not disappoint with her article "What's New in Atopic Dermatitis". She says, "We are beginning to understand how complicated this disease can be." Then, she goes on to discuss pathogenesis, diagnosis and treatment.

Take a few minutes to read "Summary: Investigation on the in vitro effects of resveratrol on peripheral blood mononuclear cells harvested from healthy and atopic dogs". Dr. Fadok provides a summary of the white paper from this WFA-funded study with the University of Florida College Veterinary Medicine. It is important to the WFA that study results and outcomes are available to our donors. The white paper will be included on our website linked to the study title.

"Legg-Calve Perthes Disease (LCPD)" is a series of articles providing a first-hand account of the disease by Dr. Robert McCaskill and Matt and Terri Grant in "Camden's Story". This article is followed by researchers Dr. Rory J. Todhunter and Drs. Maurice R. and Corinne P Greenburg discussion about their long-term goal to develop a genetic test for this disease. Find out how you can help by donating blood samples, especially of Westies with LCPD for this study, to the Westie Foundation Biobank.

Plan to take notes when reading the "Emergency Tackle Box" by Lorraine Lennon. Having an emergency kit well stocked and easily available helps you to stabilize your Westie if sick or injured. Lorraine offers great suggestions for what items may be needed.

Prepare for a lovely story about a Westie and his young owner that led to a wonderful gift to the WFA. "COVID Ends Westie Show Dog's Career, Leads Him to Become Young Girl's Best Friend, A Girl and Her Westie Donate to the WFA" written by Teresa Barnes. Teresa shares the story of EmilyGrace and her best friend Jack and how a donation to the WFA happened. EmilyGrace's mother said, "When EmilyGrace heard about WFA and how the WFA helps dogs and humans—she knew that was what she wanted to do."

On behalf of the Board of Directors, we wish to thank our valuable donors who have chosen and gifted the WFA as their charity during 2021 and 2022. If you would like to be included, you may contact Jim McCain, Donor Manager at donormanager@westiefounation.org or visit our website www.westiefoundation.org for assistance. In addition, I would be delighted to visit with you about what the WFA has accomplished, major projects and research underway, as well as ways you may volunteer if you are interested. My email is president@westiefoundation.org.

"Financial Report—Fiscal Year 2021 and Fiscal Year 2022"—By combining the financial data for these two years, Program Services is a robust 91.2%, while Management (3.8%) and Fundraising (5%) are closely monitored. We are enormously proud of our investment subcommittee members who closely monitor the investment portfolio to ensure it complies with the Investment Policy.

WFA Scholarship Award 2020, 2021, and 2022 winner Lopamudra D. Kher, DVM, MS, MS provides an update on her current work. WFA fellowship funds will permit Dr. Kher to conduct assays, identify target sites, and develop a 3-D reconstructed canine epidermis both healthy and atopic. We wish Dr. Kher much success in her work.

Thank you for your continued involvement and support of the WFA but most of all, your love of Westies!

Bebe Pinter

Questions? Comments? Suggestions? www.westiefoundation.org **1-888-928-3843**

What's On the Health Front?

By Kay McGuire, DVM, MS

Kay McGuire, DMV, MS

It is hard to believe that 2023 is a quarter over. There are so many projects we are undertaking. I am hopeful that the rest of this year and beyond is more stable than the previous three years.

The Westie Foundation of America, Inc. (WFA) launched the Westie Foundation of America Biobank this past Fall. The purpose of this DNA storage facility, currently supplied by blood samples from any and all Westies, is to allow scientists the ability to request pertinent samples to continue their research. Each sample banked will provide enough DNA to furnish samples for multiple studies. The WFA has been instrumental in connecting human and animal researchers to work on diseases that affect both human and canines, "One Health, diseases that affect both human and canines."

As you may remember, the WFA had received the "Distinguished Research Partner Award" from the AKC Canine Health Foundation to recognize its many years of grant support. We continue to support studies for research and scholarships and clinical research fellowship awards to prominent veterinary students and veterinarian post doctoral candidates in recognition for grant support from the AKC Canine Health Foundation. We have given multiple scholarships and clinical research fellowship awards to prominent veterinary students and veterinarian post doctoral candidates.

The primary goal of the WFA is to promote Westie Health, striving to furnish new and pertinent educational information to the "Westie Community." Our Board of Directors chooses research projects that we feel affect our dogs the most. Your input both on our social media sites and website help drive these goals. There is a current Health Survey present on the AKC Orthopedic Foundation website, www.OFA.org that we invite every owner to answer for each Westie owned.

Our 2023 goals include more in-depth research on Atopic Dermatitis, working on soliciting DNA samples for our Biobank, running our Facebook Auction this August, starting the update on our *Westie Health Book*, and providing recorded health seminars on various topics. We will be passing out blood sample collection kits in conjunction with the WHWTCA Roving National Specialty the week of August 10th in Perry, GA.

If you would like to contribute your Westie's blood sample for permanent storage, along with a confidential anonymous health questionnaire, please contact us through the WFA website, www.westiefoundation.org/biobank. The instructions and sample collection forms are available on the website as well as the email address to request collection materials.

What's New in Atopic Dermatitis?

By Valerie A. Fadok, DVM, PhD; Diplomate, ACVD

As you know, some of our Westies really suffer from atopic dermatitis, a chronic inflammatory disease. We are beginning to understand how complicated this disease can be. As we all know, there are genetic components, but there are major environmental influences as well. These include allergens (pollens, molds, mites, insects, danders), but also air pollutants and changes in temperature and humidity. And the more we learn about the bacteria, yeast, and viruses that live on our skin, the more we understand the role of dysbiosis (the dysregulation of the microbiome in the skin and the gut). So what new information do we have about atopic dermatitis? We can divide it into new ideas about pathogenesis, diagnosis, and treatment options.

Pathogenesis

Microbiome studies. Pathogenesis is a term we use to talk about how a disease develops and progresses, and the factors that influence it. We have learned that dogs with atopic dermatitis have an altered distribution of bacteria, fungi, and viruses on their skin. We call these organisms the skin microbiome, and the changes in it dysbiosis. This shift is what can lead to recurrent infections with staphylococci, as the proportion of pathogenic staphylocci increase. But what about the gut microbiome? An interesting paper published by Dr. Ana Rostaher and colleagues compared the gut microbiome between atopic and healthy dogs *(Rostaher A et al. Animals 2022; 12:2377)*. The bacterial microbes in the gut are significantly less diverse in atopic dogs compared to healthy dogs and the composition has changed. Basically there are fewer and different types of bacteria present compared to healthy dogs. We know from work done in humans that a diverse population of bacteria in the gastrointestinal tract early in life can be protective against food allergy and atopic dermatitis in children.

While this study was done in Beagle dogs, it is possible that many atopic dogs will have these changes in their gut microbiome, although there may be breed-specific differences. That these changes are important is supported by the observation that atopic dogs in Turkey given fecal microbial transplants (FMT) showed significant decreases in itch and skin inflammation, increased skin hydration, and a shift in the gut microbiome toward normal within 28 days of treatment *(Ural K. Ankara Univ Vet Fak Derg 2022; 69:211*). The FMT capsules used are commercially available through Animal Biome in Oakland, California.

It is important to note that both of these studies used very small numbers of dogs (< 10) so more studies will be needed to see if these observations are true of large numbers of atopic dogs.

(Continued on page 5)

(Atopic Dermatitis ontinued from page 4)

Association of behavior changes with atopic dermatitis in dogs. It has been known for some time that human patients with atopic dermatitis have increased tendencies to anxiety, depression, sleep disorders, and in children, attention-deficit disorders. Is there an association between behavior and atopic dermatitis in animals? Dr. Lindsay McAuliffe and colleagues recently studied this question *(McAuliffe LR et al. J Amer Anim Hosp Assoc 2022; 58:4.)*. Eighty-six surveys were completed in the clinic by owners of atopic dogs; in addition, 145 surveys were completed online. After analysis, 141/231 surveys were assessed as valid, and used for statistical analysis. The control population of heatlhy dogs (over 40,000) were from the C-BARQ, the canine behavioral assessment and research questionnaire data base. Atopic dogs compared to healthy dogs were found to be less trainable, showed more stranger- and owner-aggression, more aggression toward familiar dogs, and more fear of other dogs. In addition, they were more sensitive to touch, were more excitable, and more attention-seeking.

These results are important, because they suggest that atopic dogs may have anxiety as do atopic humans. When we as veterinarians are treating them, we want to consider their quality of life, as well as that of their owners. We hope to get good control of atopic dermatitis early in the lives of these dogs, so that we can prevent some undesirable behaviors from becoming hard-wired.

Diagnosis

It is always important to remember that we have no specific test to tell us if a dog has atopic dermatitis or food allergy. We have to make a clinical diagnosis. The purpose of our allergy testing, whether intradermal testing or serum testing, is to pick allergens for immunotherapy. Interpreting tests for food can be very tricky. Having a positive reaction to a food doesn't tell us a dog or cat has an allergy to that food, it tells us the dog makes allergic antibody (IgE) to that food, which may or may not be relevant to the skin or gut disease the pet has. And what makes it more tricky is the fact that not all dogs with food allergy make these allergic antibodies; they have a cell-mediated immune response, especially if they have gastrointestinal signs. What we must keep in mind is that a positive test can be helpful, but a negative test does not rule a food allergy out.

So what is new with allergy testing? Molecular allergology. As of early this year, a new serum allergy test The Pet Allergy Xplorer or PAX (https://nextmune.com/product/pax-serum-test/) is available that tests for IgE to the specific allergenic molecules within the pollens, molds, dusts, danders, mites, insects, and foods. Dr. Thierry Olivry, who many of us know as a talented researcher, is the medical director, and has worked for over a year to develop this test for the veterinary profession. The test is currently available for dogs,but will be available for horses and cats later this year.

It is important to understand the differences between the old way of testing and this new molecular way. In the past, allergy testing, whether by intradermal or by serum, was done with crude allergenic extracts. Let's take house dust mites as an example. To make an allergenic extract, house dust mites are grown in the laboratory, then harvested, ground up, and

(Continued on page 6)

(Atopic Dermatitis ontinued from page 5)

put into a solution. You can understand why we call this a crude preparation. There is a lot of variation from preparation to preparation, and the actual allergen content is 2% or less. For skin testing, that means there are 98% proteins that are extraneous, and that means they might be irritating and cause false positive reactions. With serum testing, using the crude extract could result in false negatives.

As veterinarians and pet owners, we will need to learn that the results from the Nextmune PAX serum test will be quite different from what we have seen in the past. Because we have used crude extracts, we have become accustomed to large numbers of positive results from intradermal testing and serum testing. The PAX test will give us fewer positive results than we are used to. We have learned recently that one reason for false positives in serum testing is the presence of cross-reactive carbohydrate determinants. These are IgE antibodies that bind not to allergenic proteins, but to carbohydrates (sugar groups) that are shared among many pollens and insect allergens. We see results in which our dogs or cats have positive reactions to almost all pollens and insects, which makes it difficult to generate immunotherapy. If we put too many allergens in the immunotherapy we risk increased side effects and less efficacy. With the PAX test, we will have fewer positive reactions, but they will be relevant, allowing us to generate immunotherapy that hopefully will be more successful.

We are learning that the timing of this test may be very important. Positive reactions tend to peak in the late summer or early fall, after a dog or cat has been exposed to multiple pollens. Some of these dogs or cats will have negative tests in the winter.

Treatment

Most of us are aware of medications such as Apoquel®, Cytopoint™, Atopica™, glucocorticoids, and allergy immunotherapy. Some of the new ideas about treatment include diets specifically formulated for atopic dogs, new oral supplements, and topical treatments that repair the skin barrier and help improve the quality of the skin and coat. They often help our medications and allergy immunotherapy work better.

Diet. Nutrition is not new in the treatment of skin disease. What is new is the reformulation of diets specifically to support the atopic dog. These are not meant as diets for food trials; they are meant to support the skin barrier and immune system of atopic dogs. These include Hill's Complete®, Royal Canin Skin Support®, and Purina DRM®. While Hill's will promote Complete® as a diet appropriate for a diet trial, I do not recommend it. Dogs who are allergic to chicken and/or egg may not tolerate this diet.

Nutritional supplements. Two nutritional supplements have shown some promise with atopic dogs. The goal is to use these medications to help our other therapies work better; they may not be sufficient for sole control. One product is called Redonyl® Ultra from Dechra and is available without a prescription. The active ingredients are palmitoylethanolamide (PEA), as well as omega-3 and omega-6 fatty acids. This supplement has been shown to provide some control of itch and inflammation in dogs with mild to moderate atopic dermatitis; however, it is best used with other medications. Published papers are limited in number, but there is some evidence. Another oral product is Dermaquin® from Nutramax. This product contains hardy kiwi and beta-glucan to provide anti-inflammatory activity and omega-3 and omega-6 fatty acids for skin barrier repair. This product has also been shown to improve atopic dermatitis in dogs with mild to moderate atopic dermatitis. The ideal use of these nutritional supplements in dogs with moderate to severe atopic dermatitis is as support for the primary therapy to get the maximal control of the disease. We promote multimodal therapy for our atopic dogs: control itch and inflammation, use ectoparasite control to avoid fleas and other parasites, control infections with bathing and skin barrier repair, and allergy immunotherapy. Using supplements like Redonyl® or Dermaquin® to support the skin barrier can help our anti-inflammatory therapies work better.

(Continued on page 7)

(Atopic Dermatitis ontinued from page 6)

WHAT'S NEW IN ATOPIC DERMATITIS?

Topical lipids for skin barrier repair can be incredibly helpful. They improve the quality of the coat and skin and help reduce the number of relapses of bacterial skin infections. The use of these products can assist in the reduction of itch and recent evidence suggests they can help our anti-inflammatory medications work better. Dermoscent® laboratories have studied the topical use of essential oils for 2 decades. They have developed a line of products whose efficacy is supported by publications and presentations at major dermatology meetings throughout the world. There are 3 major lines, the Dermoscent® line, the PYOclean® and PYOspot® line, and the ATOP-7® line. These products contain essential oils from herbs and grains, as well as plant extracts chosen for their anti-inflammatory and antimicrobial activity. There are shampoos, sprays, mousses, wipes, and otic products. I am particularly fond of the spot-ons, as they are easy for us as pet owners to use. The products are applied once weekly for 4-8 weeks, then as needed. Dermoscent Essential 6 spot-on is especially helpful for dogs with dry flaky itchy skin; it can help reduce the recurrence of skin infections. PYOclean® shampoo and spray have been shown to be as effective as chlorhexidine in the treatment of bacterial and yeast infections; PYOspot® spot-on when used weekly can reduce the number of relapses of skin infections an allergic dog gets in a year. This reduction allows us to use fewer antibiotics, and avoid resistant infections. The use of ATOP-7 spot-on can help extend the duration of Cytopoint efficacy in atopic dogs. These studies are small and need repeating, but they are very encouraging.

Atopivet® is a line of products containing sphingolipids and hyaluronic acid (https://www.dechra-us.com/Files/Files/SupportMaterialDownloads/US/02SD-ATO22025-0822-Atopivet-Detailer-final-2.pdf). These are available from Dechra as a spot-on, a mouse, and a collar. The collar is designed to allow the dispersal of the lipid and the hyaluronic acid over the body. Both of my atopic Westies have started wearing these collars, and I am seeing some improvement in skin quality. One publication supports their use as well; Dr Rosanna Marsella showed that twice weekly application of the spot-on resulted in reduced itch and inflammation in atopic beagles with allergy to house dust mite *(Marsella R et al. BMC Vet Res 2020; 16:92)*.

Topical heat-treated probiotic. The last novel treatment idea is the use of heat-killed lactobacilli to help correct the dysbiosis associated with atopic dermatitis. Most of us are familiar with lactobacilli as components of some of the probiotics we take. Two species of Lactobacillus, L. rhamnosus and L. reuteri are heat-killed in a process called tyndallization. This process kills the bacteria, but allows the cells to remain intact. These bacteria have the ability to stimulate the growth of beneficial bacteria and inhibit the growth of pathogens. The other ingredients have some anti-inflammatory activity as well as moisturizing activity. The product is called LinkSkin, and is available through Nextmune. Dr. Domenico Santoro has published one paper showing its ability to reduce itch and inflammation in atopic dogs. Clearly more evidence is needed, but the approach is biologic rather than pharmacologic, and offers some promise.

Summary: Investigation on the In Vitro Effects of Resveratrol on Peripheral Blood Mononuclear Cells Harvested from Healthy and Atopic Dogs.

By Valerie A. Fadok, DVM, PhD; Diplomate, ACVD

This WFA-funded study was undertaken at the University of Florida College Veterinary Medicine by Dr. Domenico Santoro. Resveratrol is a natural polyphenol present in the skin and seeds of grapes. Notably, it is a component of red wine. This compound has antimicrobial activity as well as anti-oxidant activity. There has been great interest in studying the effects of this compound in a variety of inflammatory disorders, including atopic dermatitis. Most of the studies have looked at its effects in cell systems and mouse models, but results are encouraging. Interestingly, a metabolite of resveratrol is able to inhibit one of the critical enzymes (Janus kinase-1) mediating the itch and inflammatory pathways in atopic dermatitis. This is the same enzyme targeted by oclacitinib (Apoquel®, Zoetis). In mouse models, this metabolite has been able to reduce the inflammation, itch, and skin water loss associated with house dust mite allergy.

The purpose of Dr. Santoro's study was to examine the effects of resveratrol on canine mononuclear cells prepared from fresh blood. Mononuclear cells are lymphocytes and monocytes, both very important in immune function. Samples were taken from 10 healthy dogs and 10 atopic dogs. The cells were cultured overnight, then set up for the experiment.

Each dog's cells were set up to have a negative control (no resveratrol and no stimulant (phytohemagglutinin – PHA – a compound derived the red kidney bean that causes lymphocytes to proliferate), positive control (PHA), resveratrol alone, and PHA + resveratrol. After 24 hrs these cells were tested for viability, production of defensins, anti-oxidant activity, and cytokine production.

One of the important things to consider is the effect of culture on cells. Do the cells remain alive or do they die under these conditions? There were two tests for viability. One is a measurement of an enzyme that only leaks out of dying or dead cells. The other is a measurement of a specific kind of cell death called apoptosis.

The cells were assessed for their anti-oxidant activites, the product of host defense molecules (called defensins), and a number of cytokines important in atopic dermatitis and other inflammatory states.

This study showed that cells from healthy dogs tended to be healthier, in that there were fewer dead cells in all the test conditions. Resveratrol tended to increase viability. Interestingly, the cells from atopic dogs had almost double the number of apoptotic cells regardless of the culture conditions. This finding is quite interesting as skin cells from atopic humans and mice tend to die by this mechanism, and that impairs the skin barrier (the very surface of the skin which holds water in and keeps allergens and microbes out).

Healthy cells had more antioxidant activity than atopic cells. Resveratrol seemed to increase the anti-oxidant activity in healthy cells, and to some extent, in atopic cells. The levels in atopic cells never reached that of healthy cells however, and the changes were not statistically significant.

Interestingly, resveratrol-treated atopic cells were able to increase their production of one of the defensins, compared to healthy cells. This is interesting because defensins are molecules that help kill pathogens. With regard to cytokines, the resveratrol had little effect on either population, and it was noted that the allergic cells tended to produce less. Possibly this effect resulted from the fact that there were more dead cells in that population.

So what can we conclude about resveratrol and atopic dermatitis? The concentrations used in this study were not high enough to warrant a recommendation of oral resveratrol for atopic dogs, but these concentrations were based on equivalency to what is safe to administer to a dog systemically. Higher levels might be more effective, but this compound at high levels can induce renal disease in dogs. It is possible that resveratrol could be used much more effectively on the skin. Much more work needs to be done to support the use of this compound.

It is important to realize that while these are negative results, they are still very valuable. Based on these results, we can say that administering resveratrol orally at doses safe for dogs is unlikely to be beneficial.

Legg-Calvé-Perthes Disease

Camden's Story

By Robert McCaskill, DVM; Matt and Terri Grant

We are providing the following article to you, our Westie Wellness readers, to inform you of Legg-Calve Perthes Disease (LCPD), a painful (and expensive) disease.

Providing blood samples to the Westie Foundation of America Biobank will enable researchers to link DNA with health issues such as Legg-Calvé-Perthes Disease. Please recall that samples need not be from pedigreed Westies. Samples can also come from a rescue dog or a dog of unknown lineage. Blood samples from which DNA will be extracted are needed from healthy dogs for the research control purposes as well as dogs with health issues.

To request a sample kit and for more information: www.westiefoundation.org/biobank.

He was the last puppy born on Christmas Eve out of a litter of three. His brother and sister before him were stillborn. We called him Dickens. His mom had previously free-whelped three litters. He had a barely audible heartbeat. It was weak but there. I went to work to ensure that his airway was clear. I started chest heart massage and mouth to mouth breathing. Finally, after many minutes he took a breath. He weighed 200 grams, a normal size westie puppy. I spent the next 3 days ensuring he was nursing and providing supplemental nourishment every 2 to 4 hours. He gained weight and with that, strength. By the time he was 300 grams, I was confident that he was strong enough to nurse and survive. His mom, Emma, has never been a great housekeeper. I assisted with warm water cotton ball wipes to ensure he had bowel movements. By day 5, Emma started doing her share. By two weeks, I knew he was going to be a smart and special puppy.

COVID had struck. Schools were closed. Our grandson, Ethan, was with his grandmother enrolled in virtual learning. On his breaks, Ethan would occupy his free time playing with Dickens. Their favorite play was chasing a fuzzy duster that was on a pole. Dickens would chase and go for the duster over and over. Dickens also liked toys. He would bring them out of his toy box. He would play fetch until bored. Then he would lay at my feet napping. At 4 months, I noticed that one testicle was down. I watched and by 5 months, the other testicle was not going to completely descend. We knew that this fantastically smart puppy could not be shown or used in our breeding program.

I had recently been contacted by Matt Grant. Matt and his wife, Terri, had obtained a westie boy, Bentley, from us a couple of years earlier. Terri and Bentley enrolled in therapy dog training taught by Jane Fink. Bentley received AKC Certification, but then COVID hit closing hospital visits. They wanted another boy to also train as a therapy dog. Thus, Dickens went off to Matt and Terri's to join this super family. Matt and Terri now called their boy Camden. In December, Matt called me. He had just had Camden neutered. After the procedure, Camden had started dribbling urine. Camden had also started a slight occasional limp on his left rear leg. Camden's clinician stopped some of the post-surgical meds and took an x-ray. The urine dribbling slowed but did not stop. The x-ray showed no pathology, but Camden's clinician suggested a consultation with a veterinary orthopedic surgeon. One was scheduled. A visit was made with no definitive diagnosis. The surgeon suggested that Camden return for a follow-up visit in six months. This specialist could provide no thoughts about the urine dribbling.

Matt and Terri then scheduled a consultation with a veterinary internist who had a special interest in urology. A complete work up to include a CAT scan was performed. Nothing eventful was found by the specialist. The specialist prescribed some meds and antibiotics. Camden's urine dribbling improved but did not go away. The CAT scan showed some orthopedic changes in Camden's right rear hip. They referred him back to the veterinary orthopedic surgeon who scheduled a follow up consultation. X-rays now showed changes in the right femoral head. A diagnosis of Aplastic Necrosis was made. Aplastic Necrosis is the scientific term for Legg-Calves Perthes Disease (LCPD). The surgeon presented Matt and Terri with several

(Continued on page 10)

(Legg-Calve-Perthes continued from page 9)

surgical options with a recommendation of a total hip replacement. The surgeon recommended the hip replacement as the best option for returning Camden to full mobility. Matt and Terry decided to go with this procedure.

Camden had the surgery. He stayed in recovery for three days. He walked out of the hospital on his own. Camden's exercise was restricted for 6 weeks. Camden had a follow-up visit with his surgeon 9 weeks later. He was healing nicely. He was placed on limited exercise. By 12 weeks, he was allowed to return to normal activity. Interestingly, as soon as the surgical procedure was done, Camden quit dribbling urine. The urine dribbling has not returned. I have spoken with several specialists who have not observed this condition before. We believe that it was associated with pain because when Camden went on walks before the surgery the dribbling would start. By then, it was not as dramatic as it was initially, but it was still present.

Today Camden has returned to chasing the squirrels in the back yard. He and Bentley now enjoy long walks through the neighborhood. Terri plans to resume training with Jane Fink. The surgery went well as did the recovery.

Legg–Calvé–Perthes Disease (LCPD)

By Dr. Robert McCaskill, DVM

My experience with LCPD started with a West Highland, Kiltie. She came into our life while we were stationed in Germany. She was a fantastic puppy. We were then posted to California with the golden retriever and Kiltie. At 11 months of age, Kiltie started limping on her left rear leg. X-rays showed femoral head flattening with changes in the acetabulum of the hip. The diagnosis was LCPD. I reached out to Dr. Bob Rooks, a noted veterinary orthopedic surgeon in Fountain Valley, CA. We scheduled Kiltie for a consultation with potential for a femoral head ostectomy which means removal of the femoral head. Bob allowed me to assist with the surgery.

The surgery and recovery were uneventful. After a couple months, Kiltie was running with me and the golden. For 30 years, LCPD had not shown up again in our breeding program until it showed up with Camden. Discussions with both veterinary and human orthopedic surgeons indicated that there was no evidence of a genetic component and that perhaps environment played a part.

But now Cornell University's College of Veterinary Medicine has identified a possible gene on Chromosome 6. If this can be substantiated, it would benefit not only our breed but also potentially humans. Dr. Rory James Todhunter is the research team lead and veterinary orthopedic surgeon. His article on LCPD follows. The research team believes that LCPD may be an autosomal recessive genetic disease. If this is true, they believe that they can develop a genetic test. That means our Westie World would have another tool to assist us in potentially eliminating this disease and pain from our breed.

(Thanks to Anne Sanders & Steve Schroffel for edits, formatting and compiling this article.)

Legg–Calvé–Perthes Disease

By Rory J. Todhunter BVSc, MS, PhD, DACVS
Maurice R and Corinne P Greenberg Professor of Surgery

THE GOAL

Legg–Calvé–Perthes disease (LCPD) is a juvenile-onset, secondary collapse of the femoral head due to death of the cells that produce its cartilage and bone – a process known as osteonecrosis (bone death). The result is hip deformity and premature hip osteoarthritis or degenerative joint disease and is most seen in small breed dogs of both sexes. The trait is also called avascular necrosis (loss of blood supply) of the femoral head.

Our long-term goal is to develop a genetic test which can be used to make informed breeding decisions in susceptible West Highland White Terriers. Breeding dogs not carrying the mutations will reduce, and hopefully eliminate, the disease from the breed. The current state of the art to find a causative genetic region or locus for this disease is to undertake a molecular genetic screen across the entire genome of cases and controls. The goal is important because (as illustrated by the preceding stories), LCPD causes pain and lameness, it usually requires surgery (removal of the femoral head and neck or total hip replacement) to successfully eliminate the hip pain. This is a risk to the affected dog because both procedures are invasive, painful, and require a long convalescence, in addition to the substantial cost to the owner.

THE TRAIT

Legg–Calvé–Perthes disease was first described in adolescent humans by the English, French and German physicians, Legg, Calvé, and Perthes, respectively, in 1912. In humans, boys have a higher incidence. In dogs, there is no sex bias. Clinical

(Continued on page 11)

(Legg-Calve-Perthes continued from page 9)

Summary of Pathogenesis of Femoral Head Deformity Following Ischemic Necrosis[4]

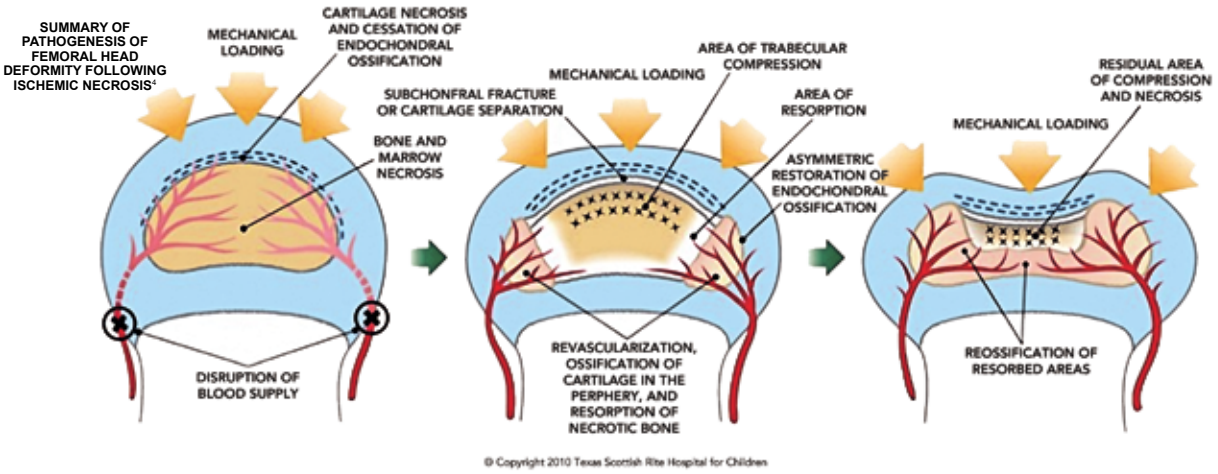


Figure 1

signs of predominantly unilateral hip pain and lameness appear in affected dogs between 4 and 11 months of age.

Disruption to the blood supply of the femoral head in the hip joint socket (*acetabulum*) produces hypoxic (*low oxygen*) injury to the developing femoral head.[1] (*See Figure 1*). The blood supply to the femoral epiphysis enters the femoral neck at the joint capsule reflection and runs up the neck into the epiphysis (*top of the femur*). Anatomic vascular studies in susceptible small breed dogs demonstrated that the femoral epiphyseal blood supply is less protected, and therefore vulnerable to trauma or occlusive (*blocking*) pressure, in the region around the growing cartilage in the femoral neck when compared to the vascular architecture in non-susceptible mixed-breed dogs.[2] Other remarkable similarities between LCPD in children and small breed dogs, include low insulin-like growth factor-1 (*IGF-1*) levels, generalized small artery caliber with reduced arterial function, and a hyperactive personality.[3] Insulin-like growth factor-1 is the hormone that acts locally to stimulate the cartilage cells to grow larger and thus make the whole organ larger.

GENETICS

In our preliminary unpublished study, we searched for associated regions of the genome that might affect risk for LCPD using samples from several small breeds of dog. We have discovered a genetic region that seems to associate with LCPD but not at a statistically significant level for a genome wide analysis. We propose to extend our preliminary studies, to discover the first genetic marker locus associated with this important disease in small breed dogs. Further, we will investigate the genetic variants identified within the associated region to determine the candidate causal mutation(s). The DNA samples in the Westie Foundation of America Biobank and other collected DNA will be a critical next step to continue our research. Your samples will greatly help us to genotype many more cases and controls of West Highland White Terriers and closely related breeds.

REFERENCES

[1]Catterall A, Pringle J, Byers PD, Fulford GE, Kemp HB, Dolman CL, et al. *A review of the morphology of Perthes' disease*. J Bone Joint Surg Br. 1982;64: 269–275. doi:10.1302/0301-620X.64B3.6807991.

[2]*Fujikawa K. Comparative vascular anatomy of the hip of the miniature dog and of the normal-size mongrel*. Kurume Med J. 1991;38: 159–165. doi:10.2739/kurumemedj.38.159

[3]Berthaume MA, Perry DC, Dobson CA, Witzel U, Clarke NM, Fagan MJ. *Skeletal immaturity, rostral sparing, and disparate hip morphologies as biomechanical causes for Legg-Calvé-Perthes' disease*. Clin Anat N Y N. 2016;29: 759–772. doi:10.1002/ca.22690

[4]Kim HKW: *Legg-Calvé-Perthes Disease: etiology, pathogenesis, and biology*. J Pediatr-Orthop 2011;31:S141—6)

Supporting Westie Health One DNA Sample At a Time

WFA BIOBANK
WESTIE FOUNDATION OF AMERICA
www.westiefoundation.org/biobank

WHO MAY PARTICIPATE?
All West Highland White Terriers of any age, regardless of their pedigree or health status, are welcome to support our efforts.

WHAT IS COLLECTED?
A small blood sample is collected and shipped to Resero Genomics in Salt Lake City, Utah, where DNA is extracted from the blood.

WHY ARE WE BANKING WESTIE DNA?
The stored DNA samples will provide raw material for researchers to use in their research studies. Biobanks are created with the long-term goal of linking DNA with health issues and diseases.

WHERE IS THE DNA STORED?
The WFA contracted with Resero Genomics, which has successfully stored and maintained both human and animal DNA since 2003, to store the DNA at its facilities.

WHEN WILL THE SAMPLES BE COLLECTED?
Collection can begin now and will continue indefinitely.

WESTIE HEALTH, HOW CAN I HELP?

In order to make a difference to the future health of our breed and to take advantage of technology, the Westie Foundation of America, Inc. has established the Westie Foundation of America Biobank (WFA Biobank) with Resero Genomics. We are currently recruiting Westie blood samples from which DNA will be extracted. It does not matter whether your Westie is a pedigreed dog, a rescue dog, or a dog of unknown lineage. Blood samples from all Westies are welcome and appreciated. We need DNA samples from healthy dogs as well as those with health issues.

The stored DNA samples provide raw material for researchers to use in their research studies. DNA biobanks are created with the long-term goal of linking genetic information contained in the DNA with health issues. Since many disorders in animals have a genetic basis, our canine companions serve as potential models of human disease leading to improvements in both animal and human health.

Our DNA biobank is an organized collection, searchable through a custom database based on information from a health questionnaire answered by dog owners. This database, developed by the WFA, is strictly confidential. Each blood sample submitted is entered with a unique sample number, and information from the health questionnaire is linked to that number. The database is maintained in a secure, cloud-based site.

Resero Genomics extracts DNA from the blood of our Westies. The WFA is funding the cost of mailing, DNA extraction, and storage of the samples. We provide the special DNA extraction blood tube and mailing supplies (that you take to your veterinarian to collect the blood sample), and the return postage to Resero Genomics. Each blood sample provides multiple samples of DNA to support health studies selected by the WFA.

For more information and to request a sample kit:

www.westiefoundation.org/biobank

The West Highland White Terrier Club of America endorses and supports the WFA Biobank and encourages all members to participate.

COVID Ends Westie Show Dog's Career, Leads Him to Becomes Young Girl's Best Friend

By Teresa Barnes

EmilyGrace and Jack Sparrow

"COVID was a terrible, scary time," wrote a young Illinois girl. A language arts writing assignment allowed her to open up about difficulties during the pandemic while writing amusing prose about how her show-dog-turned-house-pet calmed her fears and changed her life.

EmilyGrace describes herself as an introvert and a dog lover. Specifically, the 12-year-old from Illinois is a Westie lover with three West Highland White Terrier dogs who are important members of her family: Lilie and Bentlie, both 7, and Jack who's 3. Though she and her nine-year-old brother, Matthew, her father, Paul, and her mother, Michele, love all their furry four-legged friends, Jack, officially named "Captain Jack Sparrow", quickly became EmilyGrace's personal dog. "Mom says Jack is my boy. She is right. He is my boy," EmilyGrace said.

The day her little West Highland White Terrier was to arrive, she sat in school, her mind happily wandering with great anticipation. "As I sat in school that day I thought, soon I will have another true friend that makes me smile," she said.

Almost three years ago, EmilyGrace, like most children across the country, was having a tough time dealing with the new normal of the pandemic. Her mom began to explore ways to help her daughter get through the particularly tough times for a child who was an introvert like EmilyGrace.

When she finally laid eyes on Jack in July 2020, EmilyGrace was overwhelmed by excitement. "I had to run to Jack. He was adorable with his long show dog hair. His long, coarse, hair was flying in the wind. The feisty, determined 10-month-old little rascal still had the puppy smell. He jumped on me with an energetic pounce. His paws felt like pillows against my face and chest. His intense eagerness made his panting sound like he was gasping for air. His little tongue ran across my nose like a salmon covered sponge. I hate fish but I didn't care," she wrote.

(Continued on page 14)

(Covid Ends Show Dog Career continued from page 13)

Jack and EmilyGrace were seemingly opposites, his being a show dog who craved the limelight and loved being the center of attention for crowds. The differences have made them perhaps unlikely best friends.

"Jack was not meant to be in my family. He only is because of COVID. Jack did shows, in fact, he lived in a Champion breeders' home with other show dogs…However, during COVID they canceled dog shows," EmilyGrace wrote in her school essay. The breeder then allowed the Smith family to adopt Jack.

When her Girl Scout Troop closed down during the pandemic, EmilyGrace realized she could do something good with her portion of the raised funds – and what better than to help dogs like her very favorite dog on the planet? So, she donated more than $800 to the Westie Foundation of America.

"When EmilyGrace heard about WFA and how it helps dogs and humans, she knew that was what she wanted to do," said Michele.

"I came up with the idea because I want to make sure Westies and people don't suffer and that loved ones can get the care for their babies," said EmilyGrace who sees herself as a veterinarian or a human medical doctor someday.

It's safe to say that EmilyGrace is in good hands, well paws, with Captain Jack Sparrow. "Every day since that day in July, Jack has made me laugh. Not any normal laugh but a til-you-can't-breathe laugh. He is the funniest dog I have ever met," she said. And the language arts assignment EmilyGrace wrote about Jack? She made an A.

GENOMIC TESTS® SHOW PROMISE OF EARLY CANCER DIAGNOSIS

By Kay McGuire, DVM, MS

I believe that most dog owners are aware that the incidence of cancer has increased in our beloved pets. Whether the cancer is due to genetics, habitat, exposure potential and/or increased life span, cancer is prevalent in 1 of 3 dogs. There is help on the horizon for tests involved in early cancer detection. How great would it be if our dog's annual screening included a blood test for early cancer detection?

One of the latest diagnostic tools in veterinary medicine is a liquid biopsy, or multi cancer early detection test. The most common cancers identified in dogs are lymphoma, hemangiosarcoma, and osteosarcoma.

In April, 2022, a San Diego based company called OncoK9® developed a test that could show a 54.7% sensitivity and a 98.5% specificity in identifying three of the most aggressive canine cancers—lymphoma, hemangiosarcoma, and osteosarcoma. The OncoK9® test actually tests for 8 of the most common canine cancers which include lymphoma, hemangiosarcoma, osteosarcoma, soft tissue sarcoma, mast cell tumor, mammary gland carcinoma, anal sac adenocarcinoma, and malignant melanoma—the detection rate was 61.9%.

Texas A&M University College of Veterinary Medicine & Biomedical Sciences offers the Nu.Q Vet Cancer Screening Test® created by Volition, an Austin, Texas–based biotechnology company. Nu.Q® tests blood for cancer biomarkers and claims a 97% specificity rate. The test has been shown to detect 77% of lymphomas and 82% of hemangiosarcomas. With approximately 77 million pet dogs in the United States, there are an estimated 6 million pet dogs diagnosed with cancer each year.

The likes of these diagnostic tests can be added to the annual well dog screens over the age of 7. This could also be a complimentary test earlier in life for those breeds susceptible to cancers: Golden Retrievers, Bernese Mountain Dogs, Boxers, Beagles, Rottweilers, Shetland Sheepdogs and West Highland White Terriers. Early diagnosis can provide for earlier treatments and better long term outcomes for our pets.

We had an article recently on items to have for your dogs in an emergency. We are sharing an article from one of our Board members, Lorraine Lennon on what she feels each of us should keep on hand in case of an emergency.

EMERGENCY TACKLE BOX

By Lorraine Lennon, Veterinary Technician

Anyone traveling anywhere with their dog should have an emergency first aid kit in their vehicle. Your "Emergency Tack Box" can be created with materials from an inexpensive market. The important thing is that you do not need to be medically inclined to be able to help your Westie in an emergency.

Let's start: all of these items can be bought inexpensively. A small tool box should contain hydrogen peroxide, rubbing alcohol, Benadryl™ (diphenhydramine 25 mg. caplet), Imodium™ (loperamide), 1 inch medical tape, 2 inch elastic tape, 1 inch X 1 inch gauze squares, 2 inch rolled cotton, popsicle sticks (2), a triple antibiotic ointment, a thermometer, and finally a muzzle or a pair of panty hose. Bandage scissors and a small hemostat should also be added to the box.

I tape an index card to the lid of the box with a dog's normal temperature and the dose of Benadryl and Imodium as suggested by my veterinarian. If your dog eats something he shouldn't, call your veterinarian to see if vomiting is indicated; if so, then hydrogen peroxide can be given orally to induce vomiting. Benadryl™ can be given for stings, snake bites, or any allergic reactions. The Imodium can be used to control diarrhea.

These are short term treatments to help stabilize your Westie until you can seek veterinarian care.

WFA
WESTIE FOUNDATION OF AMERICA, INC
Leading the Way to Westie Health

Save The Date

for the

WFA FUNDRAISING AUCTION

Starts Saturday, August 19, 2023 at 8 am EST and

Closes Sunday August 20, 2023 at 6:59:59 PM EST

DONORS 2021

Premier
($2,500 and Above)

Thomas Austin
Tom & Barbara Barrie
Lindy Barrow
Helen Bixenman
Susan Earley
Mary Frame
Elvira Hand
Donna Hegstrom
Ann Marie Hollowathy
Les Lee Johnston
Wayne Kompare
Lana Kropp
Nancy MacGregor
Jean Warren
Robert McCaskill
Kay McGuire
Gerry & Sylvia Meisels
Dean Nelson
Bebe Pinter
Gary & Lynn Hull
Geof & Cynthia Reynolds
Rhonda Roberts
Gary Sackett & David Butterfield
Sil & Anne Sanders
Susie Stone
Carol Bresler
Carol Walker
West Highland White Terrier Club Of America
WHWTC of Greater Washington
WHWTC of SE Michigan - Catherine Kelley
WHWTC of SE Texas

Benefactor
($1,500 - $2,499)

Margaret Anthony
James Birdsong
Diane Brzyoci
Michael Cone
Florida WHWTC
Therese Hession
Mahmoud Loghman-Adham
Mary Anne Marchand
Jenny Auger Maw
Roberta Mocabee
Allison Platt
Martha Replogle
Brice Verdier
Nancy Warren
WHWT Society of Connecticut

Associate
($600 -$1,499)

Fred & Duffy Askin
John Bagley
Jack Banker
Barbara Bressler
Stephanie Capkovic
Isabel Christian
P E Covington & W G Tucker
Lucille D'Amico
Richard Donlan
Douglas & Gretchen Gildner
Valerie Fadok
John Hanttula
James Kleinschmidt
Jesse Lockaby
Joseph Mazur
Thomas McCord
Ingegerd Mundheim
Betty Nolan
Edward & Barbara Omert
Michael Peltier
Jeanne Pinkerton
Donna Popow
Susan Robbins
Mary Sahady
San Francisco Bay WHWTC
Linda Shartzer
Sandra Solack
Kristine & Terry Tarrer
Stevann & John Wilson

Friend
($200 - $599)

Patricia & John Antonelli
C C Biggs
Barbara Boggess
Walter Bond
Elva Bradley
Carol Bresler
Jody Brinley
Ann & William Buchanan
Patricia Davidson
Darlene Davis
Kenneth & Suzanne Fodill
Edgar Galinanes
Jim Gilcrest
Deb Gniadek
Barbara Gottron
Shelley Gourley
Shiela Graham
Vince & Kathleen Grosso
Barbara Gutman
Beverly Harrison
Thomas Hoffecker
Lysiane Huber
Glenda Irick-Durall
Susan Jenkins
Robert Kalal
Elizabeth Kamish
PJ Kessler
StephanieKirz
Tina McCain
Harris Lichenstein
Mary Lowden
Eleanor Mikle
Kim Moritz
Stan & Sharon Mork
Donna Park
Margaret Payne
Jim Prosper
Elisabeth Ravel
Richard Ritchie
Gail Sallitt
Barbara Salmons
Carol Schirmer
Sally Selner
Paul Simson
Fay Slater
Bev and Charlie Sundin
Marjorie Underwood
Linda Wible
Neal Williams
George Wright
Barbara Zdziarski
Janet & Everett Zlatoff-Mirsky

Donor
($100 - $199)

Barbara Bainbridge
Martha Black
Naomi Brown
Barbara & Sam Callaway
Kathy Dodge
Nancy Gammie
Lynne Gower
Karol Gray
Michael Higginbotham
Diane Jensen
Jim & Tina McCain
Deirdre Robertson
Pam Whiting DVM
WHWTC of Greater Denver
WHWTC of Greater New York

Gift
(Less than $100)

Dominic Vanek & Anthony Carr
Renee Glover
Marie Holman
Jodi Iaccarino
Susan Jenkins
Linda Limon
Jaime Miller
Mary Anne Minick
Lorraine Pelter
Val Reffett
Rosalyn Rosenblatt
Nancy Stolsmark
John Vassari
WHWTC of California
WHWTC of New England
WHWTC of No. Illinois
Deanna Zimmer

MEMORIALS
2021

PJ KESSLER MEMORIAL FUND for WLD

Janice Arden
Julia Blankinship
Gloria Boyer
John Broome
Gloria Brownlee
Donna Brustin
Maria Canelake
John Cates
Toni Chmieleski
Patricia Davidson
Margaret DeCarlis
Debra Gorham
Rodger Halstead
Cheryl Hammer
Donald and Janice Heinen
Cheryl Johnson
Jill Johnson
Janet Kurnick
Brianne Long
Mary Lowden
Paul and Patricia Mercier
Bonnie Miesbauer
Gus and Peggy Mohr
Thomas and Kathleen Nickelson
David and Brenda Polzin
Mark Rosenblum
Steven and Linda Steingruebl
Dennis Stoyak
Michael and Vikki Thompson
Trinda Weaver

DAPHNE GENTRY MEMORIAL SCHOLARSHIP FUND

Tom & Barbara Barrie
Robert McCaskill
Dean Nelson
Geof & Cynthia Reynolds
Rhonda Roberts
Sil & Anne Sanders
Susie Stone

In Memory of Donna Young
Nancy Bomstein
Rory and Linda Friedow
Andrew and Marcia Finn
Linda Hallman
David and Judy Horst
Jerry and Susan Shaw
Doug and Lillian Jones
William Mixdorf
Silvery Dee Westies
Brian Walsh
George Wright
Katherine Wright

In Memory of Gale McDonald
Yedda Marks
Patricia Ramsey

In Memory of Lee Trudeau
Kay McGuire
Patricia & John Antonelli
Jack and Pamela Meskunas
Linda Servin

In Memory of Beverly Sundin
Jim & Tina McCain

In Memory of Spencer
Sherry Newton

In Memory of Montgomery
York County Dog Training Club

In Memory of Moose and Henry
our beloved Westies
who left us in 2020
Mahmoud Loghman-Adham

In Memory of Bailey
Jim & Tina McCain

In Memory of Mac Garrison
Kay McGuire

In Memory of Vilma Elizabeth Amato
Leslie Moyer

In Memory of Janell Daugherty
Hollie Hunter

In Memory of Marty (*Mardell*) Cary
Pam Lorenzen

In Memory of Our Beloved Westie, Piper
Pam Sticklen

In Memory of Annie
Barbara Bressler

In Memory of Lyra
Karen Nothmann

In Memory of Joe Martin
Mark and Cathy Johnston

In Memory of Lucy
Dean Nelson

In Memory of Bonnie Bay's Maiden Voyage, CGC (Tish) and Bonnie Bay's Setting Sail (Kate)
Judith D'Amico

In Memory of Peg Gotty
Katherine Malsbary

In Memory of Tulip
Jon Mulholland

In Memory of My Little Westie Buddy, Charlie
Barbara Zdziarski

In Memory of "Duncan's Lad of Roseneath" CD, TD, RE, CGC & "Bella Vista's Call Me Trouble" CDX, RAE, TDX, RATN, CGC
Mary Frame

In Memory of MISTER HOBBES
Carla Abshire

In Memory of GCH CH Snowbank Sailor Moon
Martha Replogle

In Memory of Czarcrest's Look of Love "Lovee" CDX, GO, BN, RAE, AXP, AJP, NFP, CAX, B-CAT, RATM, ME, MV
Carol Walker

HONORARIUMS
2021

In Honor of Dr. Charlie and Staff
Marie Holman

In Honor of Dr. Robert McCaskill
Steve Schroffel

In Honor of Kay McGuire
Lana Kropp

In Honor of Margaret Brown
Patricia Sesto

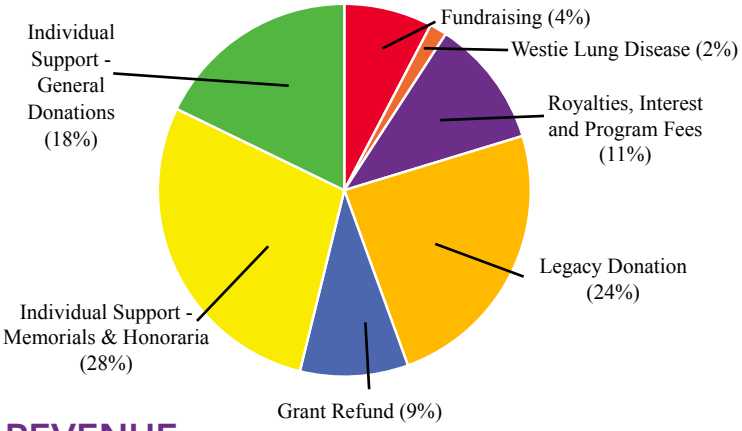
In Honor of Eric Phifer on the occasion of his birthday
Beverly Malmin

In Honor of Ashscot Westies on behalf of Ashscot Mintaka Star
Mellodee and Dexter White

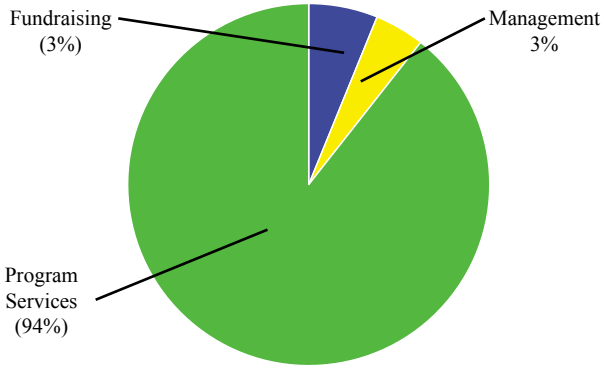
Financial Report – Fiscal Year 2021

By Gary C. Sackett, Treasurer

Revenue = $191,974



Expenses = $112,767



REVENUE

Individual Support 2021 was a much better year for everyone. Thanks to a legacy donation from a long-time Westie Foundation of America, INC (WFA) donor, revenue from individuals supporting the WFA's mission in 2021 totaled $137,800 (71.8%). An additional $54,100 (28.2%) in dividends, interest, royalties from affiliate programs, Facebook Auction, a Grant Refund and Healthbook sales ensured that we had sufficient funds to continue the mission of the WFA.

ASSETS

Temporarily Restricted Funds All memorials and honoraria are added to the Temporarily Restricted Fund which now totals $632,800. Through the legacies of Nancy Schoch and Daphne Gentry, we have significant funds dedicated to Pulmonary Fibrosis research and a veterinary scholarship. Our Temp Restricted Funds totals 42% of our assets. The income from these funds may be used to fund projects, but the principal is restricted by the Board of Directors and invested carefully to maintain principal while bringing a reasonable return. These are tracked monthly to ensure conformance with WFA investment policy.

Unrestricted Funds WFA has unrestricted funds balance of $865,400 (58% of our assets) including cash, CDs and Mutual Fund investments. This is used to fund program services, management operations and fundraising. In 2021, we will increase our expected expenditures to cover our Biobanking Project.

LIABILITIES

Future Projects WFA retains liabilities of $22,022 to fund the remainder of the Edinburgh University IPF study, the 2021 *Westie Wellness* and other ongoing activities.

EXPENSES

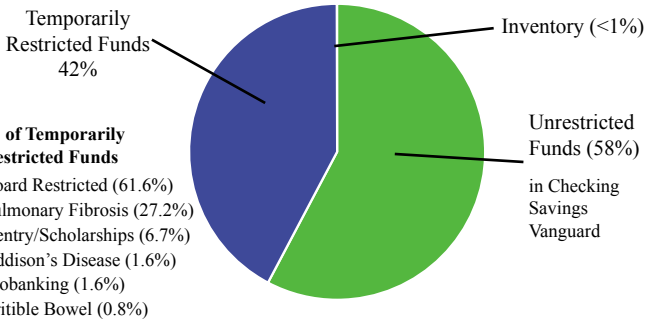
Program Services In 2021, we saw an increase in university related research projects.The WFA continued support of research and education related to diseases affecting the West Highland White Terrier.

Research $40,000 of the funds spent on research were matched by funds from the AKC Canine Health Foundation, compounding the benefits our Westies will receive. These grants addressed further Investigation into the study of Methicillin-resistant Staphylococcus Pseudintermedius ($25,000), Biomarkers of Canine Atopic Dermatitis and Bladder Cancer in Pet Dogs ($15,000 over 3 grants). We also provided a grant to a study by the University of Edinburgh on Atopic treatment options ($39,500). In addition, the WFA awarded its 3rd and 4th veterinary scholarships in the amount of $5000 each.

Education Expenses included completing a major update to our website ($8,626).

Management and Fundraising These expenses were kept to a minimum (6.4 % in 2021 vs 7.4% in 2020) by careful allocation of resources and the fact that all officers, directors, and committee members are unpaid volunteers.

Assets = $1,498,768



% of Temporarily Restricted Funds

Board Restricted (61.6%)
Pulmonary Fibrosis (27.2%)
Gentry/Scholarships (6.7%)
Addison's Disease (1.6%)
Biobanking (1.6%)
Irritible Bowel (0.8%)
Westie Lung Disease (0.5%)

DONORS 2022

Premier
($2,500 and Above)

Thomas Austin
Tom & Barbara Barrie
Lindy Barrow
Helen A. Bixenman
P. Emery Covington
Susan Earley
Karen Heere
Donna Hegstrom
Cindy Hintz
Ann Marie Holowathy
Hollie Hunter
Les Lee Johnston
Wayne F. Kompare
Lana Kropp
Robert McCaskill
Kay McGuire
Dean Nelson
Bebe Pinter
Martha S. Replogle
Geof & Cynthia Reynolds
Rhonda Roberts
Gary Sackett & David Butterfield
Carol J. Walker

Benefactor
($1,500 - $2,499)

Anonymous
Margaret Anthony
James Birdsong
Michael M. Cone
Kathleen Farrell & E. Carroll
Therese Hession
Mahmoud Loghman-Adham
Allison Platt
Blake and Lisa Snider
Nancy F. Warren

Associate
($600 -$1,499)

Fred & Duffy Askin
Jack Banker
Barbara W. Bressler
R and Skaufel D Crouch
Richard D. Donlan
Douglas & Gretchen Gildner
Gordon and Arol Holloway
AJ Ju
Jesse Lockaby
Thomas McCord
Betty Nolan
Jeanne Pinkerton
Donna Popow
Susan K. Robbins
Mary Sahady
Linda N. Shartzer
Paul Simson
Sandra D. Solack
Maureen and Robert Valenza

Friend
($200 - $599)

Patricia & John Antonelli
C C Biggs
Carmax
Kathy Bland
Barbara Boggess
Ann & William Buchanan
Jerry and Melinda Doggett
JoAnn
Anne Hall Elser
Kenneth & Suzanne Fodill
Edgar L. Galinanes
Kathryn Gerber
Jim Gilcrest
Beverly Harrison
Ella Jackson
Jonathan Lelonek
Pam Lorenzen
Stuart Miller
Kim Moritz
Karen Nothmann
Janet Parcel
Donna Park
Linda Pett-Conklin
N A. Rasor
Richard Ritchie
Steve Schroffel
Sally T. Selner
Robert and Marietta Shreve
Fay Slater
Trinity Valley WHWTC
Marjorie Underwood
Trinda Weaver
Dietmar Weselin
Mellodee and Dexter White
Linda Wible
Sandra Wilson
Barbara G. Zdziarski

Donor
($100 - $199)

Colleen Brazil
Susan Chunn
Tim and Ellen Currier
Diaga Galins
Lynne A. Gower
Linda Gray
Roger & Lenora Hackathorn
William Hulley
Katherine Malsbary
Linda Martino
Mary Ann Neal
Trevor Parham
Lorraine Pelter
Kathie Smith
Daniel Statt
Nora Balin Stone
Lynn Stonesifer
Gerald and Donna Summers
Karen Sutton
Samantha Wray

Gift
(Less than $100)

Lynn Barth
Laurel Brown
Dominic Vanek & Anthony Carr
Alison Currie
Judith D'Amico
Joan Dacres
Teresa Dale
Judith Dumbra
Gary and Marcia Freeland
Kuma C. Fumihiko
Angela Furniss
Elizabeth Grosser
Jo Gudgell
Amanda Gunter
Erika P. Hall
Susan Holderness
Angie Jennings
Hannah Kulis
Cynthia Lockwood
Patricia Marks
Jeannette L. Melchoir
Maureen Noumov
Julie Payne
Nancy and Allen, Tom Place
S Waite Rawls
Kathy Reed
Margaret Reynolds
Rosalyn Rosenblatt
Randy Rudikoff
Judi Russell
Lori and Joel Rutsky
Lisanne Smith
Pam Sticklen
Mary Clare Stoddard
Peggy Strauss
Jennifer Warren
Deborah Ann Waters
Jenny Willingter
Sharon Wilson
Marcia Zervis
Mike Zimmerchied

The Westie Foundation of America, Inc is a nonprofit corporation, recognized by the IRS as a 501 (C) (3) organization.

The mission of the foundation:

Lead, innovate and advance medical research to benefit the health and quality of life of West Highland White Terriers.
Lead, guide and advocate on behalf of Westies.
Develop and communicate to Westie owners, Westie breeders, veterinarians and others who share our challenges.

MEMORIALS
2022

PJ KESSLER MEMORIAL FUND for WLD
Margaret DeCarlis
Trinda Weaver
Mark Rosenblum
Gus and Peggy Mohr
John Cates
Debra Gorham
Donna Brustin
Janet Kurnick
Dennis Stoyak
Gloria Boyer
Paul and Patricia Mercier
John Broome
Brianne Long
Patricia Davidson
Jill Johnson
Janice Arden
Cheryl Johnson
Mary Lowden
Cheryl Hammer
Steven and Linda Steingruebl
Michael and Vikki Thompson
Donald and Janice Heinen
Maria Canelake
Toni Chmieleski
Gloria Brownlee
Thomas and Kathleen Nickelson
Bonnie Miesbauer
David and Brenda Polzin
Rodger Halstead
Julia Blankinship

DAPHNE GENTRY & BRICE VERDIER
Robert McCaskill

DAPHNE GENTRY MEMORIAL SCHOLARSHIP FUND
Robert McCaskill
Geof & Cynthia Reynolds
Gary Sackett
Dean Nelson

In Memory of Sharon Newsom
Linda Gray
Jeannette Melchoir
Kathy Reed
Marcia Zervis
Diaga Galins
Laurel Brown
Samantha Wray
Jo Gudgell
Peggy Strauss
Colleen Brazil
Joan Dacres
Cynthia Lockwood
Daniel Statt

In Memory of Bella Luna
Karen Nothmann

In Memory of Skylar Barnes
Beverly Harrison

In Memory of Robert Stump
Elizabeth Grosser

In Memory of CH Holly Hill's Brianna
Kay McGuire

In Memory of Walt Bradley
Mary Ann Neal

In Memory of Dusty Lelonek
Jonathan Lelonek

In Memory of William B. Cosgrove *(Major Bill)*
Julie Payne

In Memory of Burk
Maureen Noumov

In Memory of Flash
Wayne Kompare

In Memory of Dawn and Jim Diemer
Nancy Warren

In Memory of Helene and Seymour Weiss
Lindy Barrow
Kay McGuire

In Memory of Janell Daugherty
Hollie Hunter

In Memory of Terry
Hannah Kulis

In Memory of Murphy Max Gerber
Kathryn Gerber

In Memory of Buckeye MacKenzie Minich Willingter
Jenny Willingter

In Memory of Janet Zlatoff-Mirsky
Janet Parcel

In Memory of Ron Penninger
Nora Stone

In Memory of Helene and Seymour Weiss
Lindy Barrow

In Memory of Duncan's Lad of Roseneath CD, RE, TD, CGC and Bella Vista's Call me Trouble CDX, RAE, TDX, RATN, CGC
Mary Frame

In Memory of Robbie
Patricia & John Antonelli

In Memory of Dawn F. Diemer
Barbara Bressler

In Memory of U-UD CH Czarcrest's Cure For The Blues UD GO RAE MXP OJP OFP MXE4 SXE5 JXE EE4 RATM MV2
Carol Walker

In Memory of My sweet pup, Willie
Amanda Gunter

Westie Wellness, the official publication of the Westie Foundation of America (WFA) is mailed or emailed quarterly to all contributors. Westie Wellness is printed by Art Communication Systems in Harrisburg, PA. The opinions expressed in the articles herein are those of the authors and not necessarily of the editor or the Officers or Directors of the Westie Foundation. The editor reserves the right to edit all materials submitted for publication. The editor welcomes comments, suggestions, and expressions of opinions from the readership. No portion of Westie Wellness may be printed without the written permission of the editor.

HONORARIUMS
2022

In Honor of Sharon Aenchbacher
Judi Russel

In Honor of Simson
Paul Simson

Lisa & Charlie Fernandes
Trevor Parham

Daisy Warren & Keiligh Sinclair
Jennifer Warren

All our Westies, past & present:
Sherlock, Sumo, Drummond, Esther, Shelby & Ralph
Geof & Cynthia Reynolds

Tilly Sutton
AngelaFurniss

Legacy Alliance

THE WESTIE FOUNDATION OF AMERICA WAS FOUNDED IN 1997

The mission of the Westie Foundation of America, inc is to provide financial aid and other support through medical research benefiting the health and quality of life of Westies and, to develop and communicate information regarding health, care, breeding and the quality of life of Westies to pet owners, breeders and the veterinarians who treat Westies.

The WFA is a tax exempt, non-profit corporation. Your tax deductible gift or bequest to the WFA's Legacy Alliance Program will help to further itsmission.

The Westie Foundation of America is extremely grateful to those of you who have chosen to further the health and well being of our wonderful breed by contributing to the Legacy Alliance Program. If you are considering a gift or bequest to the Westie Foundation of America, please contact Bebe Pinter, President at president@westiefoundation.org.

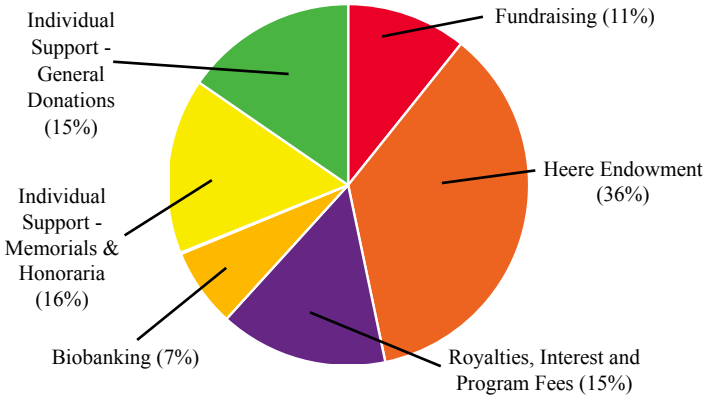
We encourage you to visit our website, https://www.westiefoundation.org to view the results of Westie health and educational challenges the WFA has met so far.

https://www.westiefoundation.org/contact

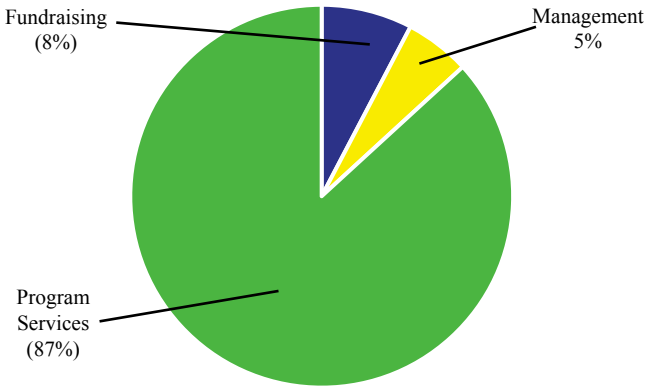
Financial Report – Fiscal Year 2022

By Gary C. Sackett, Treasurer

Revenue = $157,925.83



Expenses = $63,429.69



REVENUE

Individual Support 2022 saw the Westie Foundation of America, INC (WFA) create its first permanent endowment to fight cancer. Revenue from individuals supporting the WFA's mission in 2022 totaled $105,923 (67.1%). An additional $52,003 (32.9%) in dividends, interest, royalties from affiliate programs, Facebook Auction, a Grant Refund and Healthbook sales ensured that we had sufficient funds to continue the mission of the WFA.

ASSETS

Restricted Funds All memorials and honoraria are added to the Temporarily Restricted Fund which now totals $542,908. Through the generosity of Karen Heere, we have a permanent cancer endowment fund in the initial amount of $56,290. Our Restricted Funds total 44.3% of our assets. The income from these funds may be used to fund projects, but the principal is restricted by the Board of Directors and invested carefully to maintain principal while bringing a reasonable return. These are tracked monthly to ensure conformance with WFA investment policy.

Unrestricted Funds WFA has an unrestricted funds balance of $755,644 (55.7% of our assets) including cash, CDs and Mutual Fund investments. This is used to fund program services, management operations and fundraising. In 2022, we increase our expected expenditures to cover our Biobanking Project and received a generous donation to help defray this cost.

LIABILITIES

Future Projects WFA retains current liabilities of $24,500 to fund the remainder of the Edinburgh University IPF study, the 2022 ***Westie Wellness*** and other ongoing activities.

EXPENSES

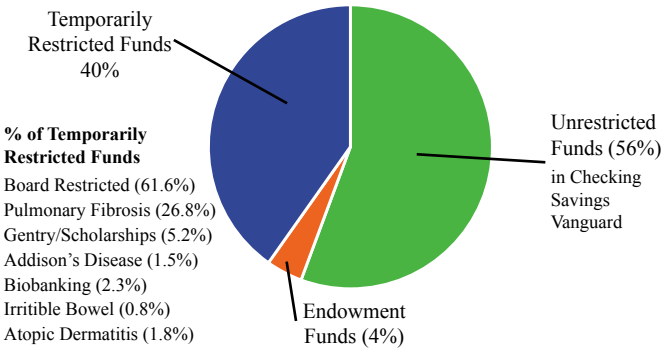
Program Services In 2022, we saw a continuation of university related research projects. The WFA continued support of research and education related to diseases affecting the West Highland White Terrier.

Research $30,000 of the funds spent on research were matched by funds from the AKC Canine Health Foundation, compounding the benefits our Westies will receive. These grants addressed further Investigation into the study of Atopic Dermatitis ($15,000 in 2 grants) and Canine Cancer ($15,000 over 3 grants). We also procured the supplies for the Biobank program ($6,915) and initiated the sample collection activity. In addition, the WFA awarded 2 additional veterinary scholarships in the amount of $5000 each.

Education Expenses included website updates, the ***Westie Wellness*** newsletter and other related expenses ($8,146).

Management and Fundraising These expenses were kept to a minimum (5.5 % in 2022 vs 6.4% in 2021) by careful allocation of resources and the fact that all officers, directors, and committee members are unpaid volunteers.

Assets = $1,357,843



American Kennel Club/Canine Health Foundation and Westie Foundation 2020, 2021and 2022 Scholarship Winner

Lopamudra D. Kher, DVM, MS, MS

I'd like to give you a *quick background information* on what I am currently working on. I am working to understand the role cytokines (small signaling molecules) released by the host body (for e.g. dogs) have on *S. pseudintermedius* (canine bacterial pathogen).

How did I get there? Atopic dogs tend to have an imbalanced immune response, because of which they have elevated levels of certain cytokines that cause damage locally i.e. skin. *Staphylococcus pseudintermedius* is a bacterial pathogen normally residing on dogs. But in atopic dogs, it is responsible for causing secondary bacterial skin infections, exacerbating the disease and increases the frequency of flares. All of which increases cost of treatment/management because we need to give anti-itchy, antimicrobial medications, shampoos etc. I am sure you are aware of the trouble.

Therefore, I am currently looking at *"the effect cytokines released by the host have on bacteria growth."* The future applications would be to develop treatment strategies that will not only reduce the bacterial load but at the same possibly correct the imbalance in immune response.

Of course, needless to say all of my research will be under the guidance and mentorship of my advisor Dr. Domenico Santoro.

Our first goal was to check if cytokines influenced the bacterial growth, and our study showed that **it did**. Now the next step would be to confirm and identify the location of the target site for the cytokines on bacteria. Thanks to the **WFA fellowship funds from 2020, 2021, and 2022**, we will be able to continue our work smoothly, i.e.:

1. Conduct assays (using neutralizing cytokine antibodies) to confirm the ability of cytokines to influence bacterial growth and

2. Also identify the target sites on bacteria for cytokines, using immunolabeling technique.

3. Lastly, once all is done we plan on developing a 3-D reconstructed canine epidermis both healthy and atopic so we can understand the same interaction. This would closely mimic the interaction we will see on live animals. For this part of the study, I will be traveling to the University of Bern, where I will learn how to reconstruct the epidermis. Dr. Sabine Kaessmeyer has extensive experience in working with reconstruction skin model, and she will be teaching me. Once all of these studies are completed, we will have a better understanding of the interaction between bacteria and cytokines released in atopic dogs.

I hope this answers all your questions. If you have any more question, feel free to email me.

Thank you.

Regards,
Lopamudra D. Kher, DVM, MS, MS
PhD candidate, Veterinary Medical Sciences
Department of Small Animal Clinical Sciences, Dermatology
University of Florida
College of Veterinary Medicine

Westie BIOBANK Word Puzzle

W V S O K O I R E C E S S I V E S A
E D G Q A Z A E H O W F K S H V C H
C O L B T Q A H S T O R A G E R O R
O F F C A N S C I E Z C W Z Y E B F
L E C T D E X T R A C T I O N S L K
L M S C I E N T I S T Q G Z T E O S
E S R T S E B M S D E E A S I R O R
C E Z N E F K L T B N Z E O P P D H
T L Q E A B M R O I D T E F A H O M
I P U T S F E E C O A P R T T P M S
O M I R E R O S K B T G U E S R I W
N A T O S E N E E A U E T S P O N E
D S Q O T E Y A W N L N U T E C A H
P A T P Z Z D R P K U E F I C E N K
S T M O G E F C L P M T I N I S T P
U Z R D O R S H I P P I N G M S W O
B F O U N D A T I O N C G E E I H Q
M O U E U S S I T F E S T R N N Y C
I N O I S S I M B U S R V U T G E F
S A M P L T S W Q W B C Z T O O L S
S H E A L T H S U R V E Y S T E S L
E Y A V K P E Y R O T A R O B A L S

BIOBANK
BLOOD
COLLECTION
CRYOGENICS
DATA
DISEASES
DNA
DOMINANT
EXTRACTION
FOUNDATION
FREEZER
FROZEN
FUTURE
GENES
GENETICS
HEALTH SURVEY
LABORATORY
PRESERVE
PROCESSING
RECESSIVE
RESEARCH
RNA
SAMPLES
SCIENTIST
SHIPPING
SPECIMEN
STOCK
STORAGE
SUBMISSION
TESTING
TESTS
TISSUE
TOOLS
WBC

Puzzle solution will be in next newsletter.

What is an Endowment and How Does it Help the Westie Foundation of America?

By Gary C Sackett, Treasurer

The definition of an endowment is a donation of money or property to a nonprofit organization, which uses the resulting investment income for a specific purpose. Endowments come in several forms, but the two most common are the Regular and Named Endowments.

Both types of endowment are similar. Funds are donated to the WFA to be used for a specific purpose (e.g., Atopic Dermatitis, Cancer, etc.). A written agreement is created between the WFA and the initial donor which specifies the purpose of the endowment, how the endowment funds can be spent, reporting requirements for the endowment, how the endowment can be modified and how long the agreement is in effect. With a named endowment, the initial donor's name and purpose of the endowment will be memorialized for the term of the endowment (which may be in perpetuity).

In order to establish a named endowment, the donor must fund the endowment in the amount of $100,000 over the initial three-year period. A regular endowment has all of the same benefits but lacks the funding requirement and would not be named after the donor. Other donors can contribute to the endowment over time as can the original donor.

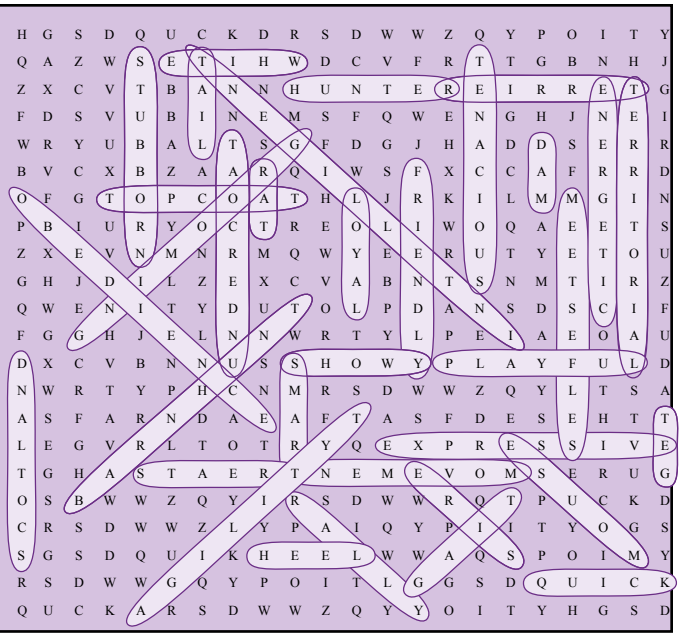
In 2022, through the generosity of Karen R. Heere, the WFA received its first endowment "The Karen R. Heere Endowment for Research in Cancer Affecting West Highland White Terrier Dogs Fund". The earnings from the investments will be used in perpetuity to support cancer research. Other donors have already contributed to this fund, and it now exceeds the $100,000 minimum requirement.

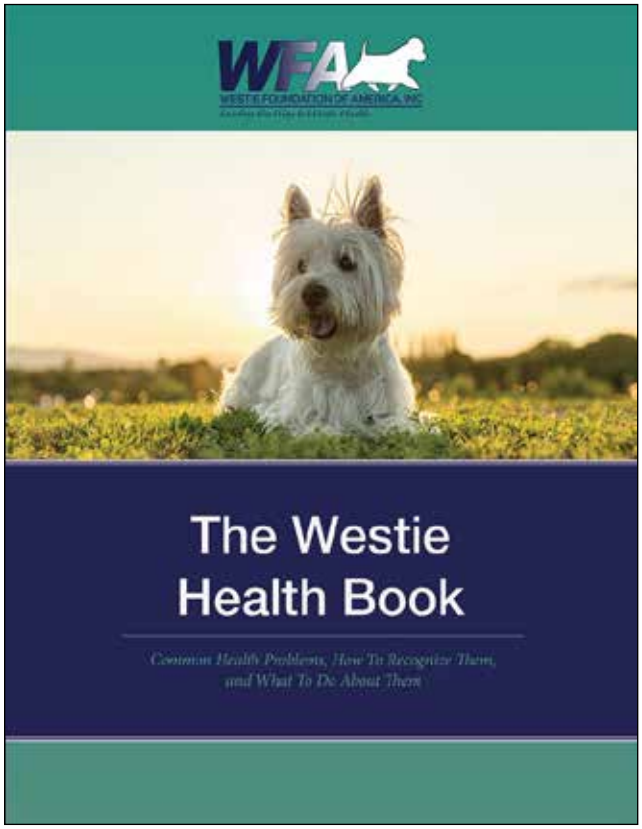
Endowments are important to organizations like the WFA because they ensure that there is a funding stream for future work without jeopardizing the original principal investment. They provide a way for donors to impact health issues that are important to them, and they provide excellent opportunities for estate planning. For donors facing the minimum required distributions from their IRAs and 401k's, this is an excellent way to give to the WFA and avoid taxes.

The WFA has an agreement framework in place to tailor for future endowments. We have the mechanisms in place to quickly assist in creating endowments and have the reporting format available for multiple endowments. If this is something that resonates with you and you would like additional information on how to set up an endowment, please contact the WFA President, Bebe Pinter (bjpinter@msn.com) or the Treasurer, Gary Sackett (treasurer@westiefoundation.org).

Wild Westie Words Solution

Westie News Summer Fall Winter 2021





PRINTED COPIES OF THE WESTIE HEALTH BOOK ARE NOW AVAILABLE!

A printed copy of THE WESTIE HEALTH BOOK provides an easily accessible reference to help ensure your Westie's health. There are up-to-date sections on Westie health, breeding, genetics, common diseases in Westies, complementary and alternative medicine, and sections on each of the health problems affecting our beloved breed, written by the foremost researchers and veterinarians who have the greatest knowledge of our breed.

GREAT GIFT FOR YOURSELF, YOUR VETERINARIAN, OR A NEW WESTIE PUPPY OWNER!

LINK TO WFA WEBSITE ORDER FORM: westiefoundation.org/westie-health-ebook
or fill out the form below and mail it in. Thank You!

PRICE: $30 US each or 4 for $100
U.S. postage included. Please e-mail info@westiefoundation.org for foreign postage.

NAME _____

ADDRESS 1 _____

ADDRESS 2 _____

CITY _____

STATE_____ ZIP _____ COUNTRY_____

EMAIL_____

NUMBER OF COPIES _____AMOUNT ENCLOSED _____

Westie Cartoon Caption Contest

Create the winning caption for this Westie cartoon. Please send your caption to bjpinter@msn.com before June 30, 2023. The winner will be announced in the next newsletter with their caption.

Create a Caption for this Cartoon

Copy of original watercolour by Ruth Sutcliffe, England

Winning Caption of Last Cartoon!

Kerri Farrar

"ARE THEY "CHEAPER BY THE DOZEN"?"