

THE SCOTTIE GUARDIAN

Quarterly Newsletter of the STCA's Health Trust Fund

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Welcome to 2023's Issue #2 of *The Scottie Guardian*, the quarterly e-Newsletter of the STCA's Health Trust Fund!



In this issue:

- HTF Trustee Michele Geiger-Bronsky provides an account of the recent "Best Ever!" Door County Scottie Rally, including tips for clubs and groups who are planning blood draw and bladder screening clinics;
- The HTF announces a new major research project on the genetics of bladder cancer at Purdue University in *Research Update*;
- In the feature *Glad You Asked!* we reply to a question about Scottie Cramp;
- Important announcements in the *Bulletin Board* section;
- And more from our Editor, Fran Sanden!

We hope that you will continue to enjoy our little newsletter with a big mission: to deliver the latest and best health info for your Scotties!

Marcia Dawson, HTF Chairman
Hijinkscot@gmail.com

Be sure to visit the STCA webpage at www.stca.biz for more details on Health and the Health Trust Fund pages, including links to the ScottiePhile Health library and HTF donation pages.



RESEARCH UPDATE

Announcing A New Research Project

The Trustees are pleased to announce the newest project funded by the HTF. Dr. Deborah Knapp at Purdue University will be taking the next major step in unlocking the genetic secrets of bladder cancer risk in our Scotties. Titled “Defining the Heritable Genomic Landscape in Scottish Terriers Related to Urinary Bladder Cancer Risk,” the new project represents a major foundational step forward in urinary cancer research.

Dr. Knapp writes: “The vast majority of cancers in dogs and humans are the result of variations in genes and the proteins encoded by these genes. These “genetic variants” come in two broad forms: (1) those that are inherited from parents to offspring, and (2) those that are acquired during a lifetime of exposure to various carcinogens and “damaging agents” and in some cases further exacerbated by chemicals from inside and outside of the body. This clearly applies to urinary bladder cancer in Scottish Terriers, in which the dogs have a 20 times higher risk of invasive bladder cancer than dogs in many other breeds, and environmental exposures further increase their risk (Knapp et al., 2020).” While there are several published and on-going studies looking at the acquired variants, virtually nothing is known about the inherited variants.

With the newest study, this knowledge gap will be addressed.

The objective of the project is to analyze the DNA of 118 Scottish Terriers who participated in the 3-year Purdue bladder cancer screening study. The enormous amount of data generated by determining the entire inherited genetic sequence of each Scottie has the potential to accomplish several goals: (1) to lead to an immediate expansion of the knowledge about Scottish Terriers and bladder cancer risk with a focus on inherited as compared to acquired variants; (2) to set the stage for future research to develop and test strategies to circumvent the risks, and develop more effective means for bladder cancer prevention, early detection, and personalized care; and (3) to perform cross-species studies to improve the outlook for humans, as well as for any dog facing bladder cancer. (Deborah Knapp, Communication, May 2023)

Funding the first Scottish Terrier genetic library starting with these 118 samples is a remarkable and unprecedented project for any Parent Club. Without this critical data, major progress in the understanding and future direction of meaningful research could not be accomplished. Furthermore, the data generated will contribute to existing research being conducted by Dr. Elaine Ostrander at the NIH in Bethesda, MD and will open the door for more collaborative work in the future. This is a major win for our Scottish Terriers.

Without the generous contributions and bequests of so many STCA members and Scottie owners over the years, the HTF would not be in a position to step up and make this kind of difference in the lives and future health of our beloved dogs. The mission entrusted to the HTF is of the highest importance to all the Trustees, and we continue to be grateful to all our donors both past and present.

More information and updates on this newest research project will be coming soon.

BUILDING BRIDGES IN THE SCOTTISH TERRIER COMMUNITY

Michele Geiger-Bronsky

Since 2001, Scottish Terriers and their families have traveled from across North America and beyond to the home of the Door County Scottie Rally (DCSR) in Baileys Harbor, Wisconsin. This iconic town is located in Door County, which is one of the top U.S. tourist destinations. In anticipation of losing their first Scottie to bladder cancer, Michele Geiger-Bronsky organized the gathering for networking. By the 3rd year, DCSR began collecting blood samples for the Transitional Cell Carcinoma genome identification work being done at the NIH and abdominal ultrasound bladder cancer screenings. Within five years the Rally became the largest non-show setting of Scottish Terriers in North America. We continued holding bladder cancer ultrasound clinics until the ability to garner equipment and veterinarians to perform the studies made it impossible in 2019 just before the CoVid-19.

It took a lot of creative searching, but in 2022 I was able to locate a veterinarian-owned mobile ultrasound service which resulted in the provision of three ultrasound machines and a sonographer who mentors veterinarians in sonography. Although there are seven vets in Door County, I had to recruit a vet from Green Bay (85 miles away) and one from Washington Island (70 miles away). We recruited Scotties age 6 and older and the crowd of attendees was approached individually for both ultrasounds and submission of samples.

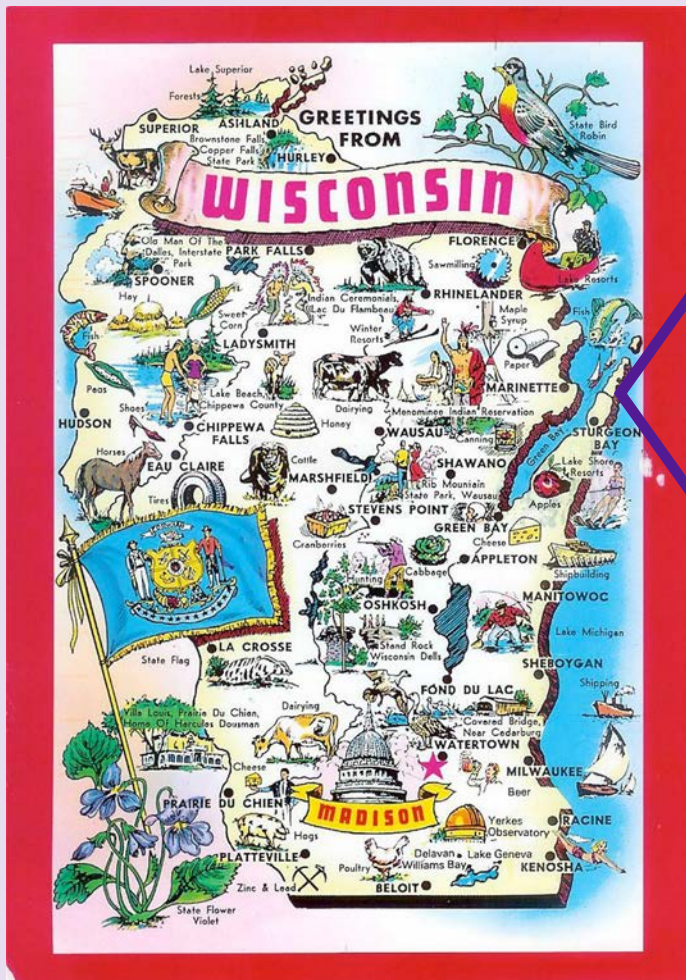


In 2022 for Rally #22, we performed 24 ultrasounds, 2 which had significant pathology present, and we collected 17 samples of blood for the Health Trust Fund DNA Bank project. This past May for Rally #23, we had the same three sonographers, and one of the vets recruited two vet assistants to assist with ultrasounds. I was also able to recruit a critical care veterinary technician and her twin sister, who did the blood collection and facilitated paperwork completion. Ultrasound charges were \$65 to cover honoraria and the cost of supplies such as ultrasound gel and flash drives for owners to have a copy of their respective Scottie(s)' ultrasound to share with their veterinarian. Other than the sonographer, all of these clinicians were honored to volunteer their time to our cause and happy to receive lunch and a t-shirt! This year we submitted an additional 11 blood samples for the DNA Bank and completed 25 ultrasounds with 3 of them having significant pathology.

The Rally ensured all the paperwork was completed for the DNA Bank, packed the samples and paperwork, and using Pirate Ship for most affordable shipping options, we shipped samples to the DNA Bank. The HTF Database Submission and questionnaires were reviewed for completeness and mailed to the HTF Chair, Marcia Dawson.

Another hugely successful Door County Rally with major contributions to Scottie health!

Thank you, Door County Scottie Rally Team!



Door County



GLAD YOU ASKED!!

This column will appear in each issue of the Newsletter. You ask the question and we'll attempt to answer it.

Q: *I was watching the Westminster Dog Show on TV, and when the Scottie was being judged, there were comments made about Scottie Cramp. It sounded to me that most Scotties have this problem and it can be a painful condition for them. Is this true?*

A: Not true on both counts. Scottie Cramp has been recognized in the breed world-wide for many generations and has been researched extensively ever since the 1980's. This is a neurological disorder that is inherited only when both sire and dam carry a copy of the mutation and pass it along to their offspring. The incidence of Scottie Cramp in the breed is not known at this time, but it is relatively rare these days because breeders have conscientiously bred away from it whenever possible.

Scottie Cramp is a non-painful disorder. The word "cramp" is not really appropriate because it connotes a level of muscular pain that we all have experienced ourselves. In fact, there appears to be no pain associated with this disorder. Scottie Cramp is episodic and only happens in an otherwise completely normal dog during extreme excitement or exercise. The affected Scottie will suddenly have a very characteristic gait and will not be able to continue running. His back may arch, his tail will turn down and his rear legs may stiffen and goosetep. There is no vocalization or other indication of pain or discomfort. And remarkably, he will make a full recovery after a few minutes of rest as the neurotransmitter serotonin is restored to proper levels. Some Scotties have a very mild case of Scottie Cramp and rarely exhibit the condition.

There is no cure for this genetic disorder, but some Scotties have shown improvement with the drug Prozac. Valium and Vitamin E have also been used in the past with variable results. Some people have even tried acupuncture and described good results. Avoiding the situations that bring on the high level of excitement and exercise is a good management option, and with age the affected Scotties tend to slow down and forestall the onset of cramp on their own. Affected Scotties live a full and good quality life as companion dogs in loving homes.

The Health Trust Fund of the STCA has funded Scottie Cramp research in the past and continues to search for a marker so that all breeders can avoid the disorder with a DNA test.



BULLETIN BOARD

The Health Trustees were all surprised at the sudden closure of VetGen LLC on June 1, 2023. There was no advance notice nor any communication to customers. At this time, we do not know the story behind VetGen’s closing nor the status of any backlogged tests at VetGen received before June 1st. We will inform the membership and Scottie breeders with any updates we discover. In the meantime, we are moving forward to find the best DNA lab that can provide our Scottie test results for vWD and CMO and continue to satisfy the requirements for the CHIC database.

Important Notes:

- The requirements for the CHIC database remain the same as before: The two **required tests** are the vWD DNA test and the patella exam, plus permanent identification. Then you must also choose one from the following list of **optional tests**: the OFA approved eye exam, or a full thyroid panel by an OFA approved lab, or the DNA CMO test.
- **Do not worry about the Scottie DNA Bank.** The HTF/STCA DNA Bank is a totally separate operation from VetGen. Rest assured, your Scottie DNA samples are safely processed and banked at Resero Genomics in Salt Lake City, UT.
Please contact us with any questions or concerns.

NOTICE

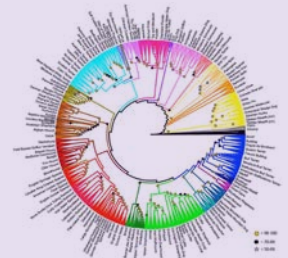
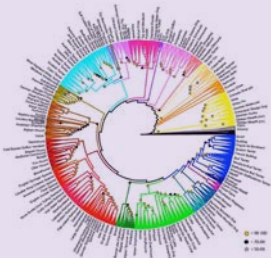
Questions about your Scottie’s Sample in the DNA Bank?

Please contact

Michele Geiger-Bronsky mgbnp1@gmail.com

or

Marcia Dawson hijinkscot@gmail.com





LIVER ENZYME ELEVATION:
When Is Further Investigation Warranted?



WITH
DR. BLAIR HOOSER DVM

SATURDAY | JULY 15 | 9:30AM CT

linktr.ee/doorcountyscottierally



BULLETIN BOARD

DOOR COUNTY SCOTTIE RALLY ZOOMIES

Since January 2020 the Door County Scottie Rally (DCSR) launched an ongoing series of virtual education via ZOOM. Most of those sessions have been recorded and can be found at <https://www.doorcountyscottierally.org/dcsr-zoomies/>

The next DCSR ZOOMIE is scheduled for Saturday, July 15th and will focus on a topic that has touched the lives of most Scottish Terriers. Have you ever been told your Scottie's liver enzymes are elevated? Typically, the next phrase is---"It's a fairly common finding in a Scottie." What exactly is the liver and its purpose? What does it mean when those enzymes begin to increase? Are Scotties more prone to having higher liver enzymes and, if so, why? When is further work-up warranted? What can you do if your Scotties numbers are on the rise? Is there a role for medications or dietary changes? What about a biopsy? Can it be an early sign of a thyroid disorder or other health issue to come?

Topic:

DCSR ZOOMIE: SCOTTISH TERRIER LIVER ENZYME ELEVATION: WHEN IS FURTHER INVESTIGATION WARRANTED?

Time: Jul 15, 2023 at 09:30 AM Central Time (US and Canada)

Join Zoom Meeting. <https://us02web.zoom.us/j/3364503460>

Meeting ID: 336 450 34

One tap mobile

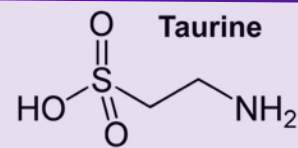
+13092053325,,3364503460# US

+13126266799,,3364503460# US (Chicago)

Upon admittance to the ZOOMIE, please mute your phone, computer or notebook/iPad when tuning in to avoid distracting our faculty or other participants. Donations to DCSR (doorcountyscottierally.org) are welcome to assist with covering honoraria and administrative costs of the ZOOM platform

GUEST FACULTY: Dr. Blair Hooser, DVM, originally hails from Indiana and is a graduate of Purdue University College of Veterinary Medicine. She now practices at Wilson Veterinary Hospital in Washington, Michigan. Her special areas of interest in medicine include reproduction, rehabilitation, and sports medicine. Dr. Hooser raises, shows, and breeds papillons and border terriers with her mother and aunt. She is heavily involved with the Papillon Club of America's Genetic Research Committee and has presented a session aboutl liver enzymes at the National Papillion Club Specialty.

Red Bull, Taurine, and Scotties



FROM BBC NEWS:

Why is there taurine in energy drinks? Scientists have discovered that taurine has life-lengthening benefits in mammals. But why is this supplement added to energy drinks?

There's an elderly Scottie dog with a walking stick. Naturally, he is considering the skateboard in front of him – and beyond it, a skate ramp. Will this adventure end in disaster? Fear not, for he is a cartoon in a Red Bull advert – and this venerable hound has a can of the brand's signature energy drink. After downing it like a student at a party, he performs a slick double-loop and casually catches his board in one hand (or paw, rather). "Who says you can't teach an old dog new tricks?," he says.

As it happens, the Red Bull advert from earlier this year is oddly prescient. This week, scientists revealed that the amino acid taurine, which is often added to energy drinks, appears to have impressive life-extending and health-boosting properties in some mammals. Although the findings have yet to be replicated in humans, it is hoped that they might be soon.

But why is this supplement added to energy drinks in the first place? And could drinking more of them be beneficial?

A forgotten hero - Taurine is an amino acid commonly found in meat, fish and eggs – it is rare in plants, but it has been found in smaller amounts in algae, bacteria and fungi. It's also sometimes sold as a supplement, which is popular with bodybuilders and athletes, who believe it may help them to control their body temperature and reduce muscular fatigue during exercise.

While taurine is not actually used to build proteins in the body, as other amino acids are, it has a range of roles, particularly in the central nervous system – where it regulates the amount of calcium in nerve cells and controls inflammation, among other things. In fact, taurine makes up around 0.1% of the body weight of animals. It was first isolated in the 1820s, from the bile of European cattle (*Bos taurus*), from which it derives its name.

For the most recent study, an international team of researchers tested the effects of a daily dose on middle-aged mice and rhesus macaques – they were 14 months old and 15 years old, respectively, at the time of the trial. The amount of taurine in the blood of mice, monkeys and humans naturally decline with age, so the team was curious whether an extra dose of the amino acid might be beneficial.

The results were striking. The animals that received taurine appeared significantly healthier and more youthful – their muscles, brains, and immune systems and other organs were functioning better – than those that did not get the amino acid supplement. Crucially, the lifespan of mice treated with taurine increased by 10 to 12%, with the monkeys experiencing a similar boost. If taking extra taurine in later life has the same benefits in humans, it could be equivalent to almost an extra decade.

continued on next page...

"I thought this is almost too good to be true," Henning Wackerhage, a senior lecturer in molecular exercise physiology at the University of Aberdeen and one of 50 co-authors of the study, **told the BBC**.

A long shot - The first energy drink was launched in the US in 1949. Branded "Dr Enuf", it was invented as a healthier alternative to soft drinks, and came in a lemon-lime flavor with added B vitamins and caffeine. But it wasn't until 35 years later, when an Austrian marketing executive **stumbled upon a Thai brand** – Krating Daeng – during a business trip, that taurine entered the scene.

In addition to the typical ingredients, this non-carbonated drink contained inositol, a kind of sugar found in the brain, and taurine. It was sold as a hangover cure. Together the two men tweaked the original formula and added bubbles to create Red Bull. The modern energy drink had been born.

The original logic for adding taurine isn't clear, and today many companies don't have a clear justification either, beyond loosely pointing to its role in the heart, brain and muscles. However, there has been some research on its possible effects. For example, one study found that the combination of ingredients in Red Bull, including taurine, improved people's **aerobic and mental performance**.

Could energy drinks help people to live longer? In the recent taurine study, the greatest health and longevity benefits were seen in animals given **1,000mg (0.03oz) of taurine** per kg of body weight per day. Assuming the average adult human weighs 63kg (139 pounds), they would need 63,000mg (2.2oz) per day – equivalent to the amount found in **63 cans of Red Bull**, or the same number of **cans of Monster** (other brands are available).

This is not something to be recommended. For one thing, it hasn't yet been established whether taurine supplementation would have the same benefits in humans, and it may have some risks. The lead author of the taurine study **wouldn't reveal to the BBC** if he is taking taurine, in case he influences others.

That's not to mention the potentially life-threatening effects of consuming the other things contained in almost 16 liters (28 pints) of Red Bull or 8 liters (14 pints) of Monster (the cans are twice the size) in a single day. This might include **hyponatremia** – a serious condition that results from drinking too much water, which results in too little salt in the blood. It could also lead to excess of caffeine. According to the Food and Drug Administration (FDA), rapidly consuming **more than 1,200mg of caffeine** can lead to toxic effects such as seizures. Drinking 63 cans of a typical energy drink would provide almost 2,000mg.

So, it's probably not a good idea to stockpile energy drinks. While the taurine they contain might just give you a microscopic boost, we'll need to wait for more research to find out if this is really the case. Just don't bet your skateboarding dog on it.

Red Scotties





From Your Editor's Desk

She's Baaaack....

Mom took a wee break from her duties as assistant (to me) editor of The Guardian. During her absence, she kept up with Scottie news. And, would you believe, she found a BBC article with a Scottie in it. It's reprinted immediately before this missive. But first, take a look at this 15 second Red Bull commercial featuring a Scottie: (<https://www.youtube.com/watch?v=VMKW6RVLTKI>)

Now, tell me if the dog looks like a Scottie. Let me point out some errors, just in case you didn't notice:

1st, Scotties are NOT hounds.

2nd, the color is all wrong

3rd, those ears...

This is what a skateboarding Scottie looks like:



So, you may be wondering why Red Bull uses a Scottie cartoon in their ads. I was not able to find too much on my Internet search, although a Flickr commenter said something about making them into real dogs. Seriously?

Clearly, the people making those snide comments have never felt the power of a Scottie's teeth.

