

Participants Needed for Bull Terrier Compulsive Tail Chasing (Spinning) Study

Like other purebred dogs, Bull Terriers are predisposed to certain diseases and disorders that are specific to or more prevalent in our particular breed. One of these disorders is compulsive tail chasing (commonly known as spinning) which, in the most serious cases, has resulted in euthanasia of the affected dog. Pedigree data collected over the past 10 years by Dr. Alice Moon-Fanelli indicate that this disorder has a heritable component in the Bull Terrier breed. We encourage your participation in the on-going research project that is under the direction of Dr. Moon-Fanelli. Dr. Elaine Ostrander of the Fred Hutchinson Cancer Research Institute and Dr. Edward Ginns of the Brudnick Neuropsychiatric Research Institute will be performing the molecular genetic analysis.

The study has recently been expanded to include an additional molecular genetic technique that will increase our success in finding the genetic markers associated with tail chasing in Bull Terriers.

The original study, funded by a grant from the AKC Canine Health Foundation and a matching grant from the Bull Terrier Welfare Foundation, involved gathering blood samples for DNA isolation and behavioral data for either of the following family units:

- Tail chasing dog, the sire & dam, and littermates
- Tail chasing dog, the sire & dam, and all four grandparents

This study is on-going and additional families are needed in order to complete the data set so that molecular analysis can begin. Dr. Elaine Ostrander has been the primary collaborator on this project and has isolated and stored the DNA obtained from all dogs that have participated.

The research effort has recently been expanded to include an additional molecular genetic technique and requires blood samples and behavioral data from a minimum of 100 tail chasing Bull Terriers and 100 controls (non-tail chasers). This is an exciting opportunity because complete family units are not required for this technique, making this aspect of the research open to dogs of unknown parentage such as shelter rescues.

Miniature Bull Terriers may also participate and the same criteria apply. With the significantly smaller gene pool of the MBT, it may seem daunting to come up with the 200 dogs needed for the single nucleotide polymorphism (SNP) technique, so family data necessary for microsatellite analysis are preferable. However, given the close relationship between the standards and the mini's, it is likely that the genetic basis for the condition is the same in both variations of the breed; this means that if 100% of the Standard data are collected, but only 50% of the Mini data are acquired, the Mini group can still ultimately benefit from their participation.

Finding the gene(s) or genes responsible for spinning is the first step in developing a diagnostic test that will enable breeders to identify carriers and thus avoid matings likely to produce the disorder. There has been a problem in getting the complete family units needed for the microsatellite portion of the project and we implore breeders who have had a spinner born in a litter to **please** take the time to participate--the study data are kept entirely confidential, and with just a few more submissions, the data analysis can begin. Since all dogs submitted for the microsatellite DNA study are also eligible for the SNP study, each normal family member also helps fill the requirement for the 100 controls (non-spinners) needed for analysis.

Getting Started

If you would like to contribute to the study with one or more dogs, contact Dr. Alice Moon-Fanelli via email at alice.moon-fanelli@tufts.edu or by phone at 508-887-4702 so that she can determine which part(s) of the study your dog is eligible to participate in, and provide further instructions. The consent form, sample submission instructions, and Bull Terrier Survey form are all available from Dr. Moon-Fanelli or may be down loaded from <http://critterweb.com/btneuro/forms.htm>. The survey form is an important part of participation and no samples will be accepted without a completed survey.

Please do not send samples without first making contact with Dr. Moon-Fanelli. Different blood collection tubes are required depending on whether your dog will be taking part in one or both study groups!

Have Questions?

For a list of commonly asked questions about the study, as well as more info on spinning and other behavioral disorders affecting Bull Terriers, visit the Bull Terrier Neurological Disorders group's web resource at <http://critterweb.com/btneuro>. If you need help with a spinning Bull Terrier, Dr. Alice Moon-Fanelli is available for consultation through the Tufts Behavioral Clinic. If you are not local to the Massachusetts area, consultation is also available via the Tufts PetFax remote consultation service. Please visit <http://www.tufts.edu/vet/petfax/index.html> for more information.



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Fax 206-667-6396

Dear Breeder,

I am writing to support the ongoing efforts of Dr. Alice Moon-Fanelli who is working with your breed club to identify the gene(s) for the Bull Terrier behavioral disorder known as "spinning" or "tail chasing." Ultimately we hope this will lead to a genetic test for the disorder that will allow breeders like you to identify carriers among your pedigrees. As an important and forward-looking breeder, your participation is important since we need to obtain a complete set of DNA samples from both affected and unaffected dogs to track the inheritance of the condition within a family.

Information you provide will be held completely confidential, as stated in the written procedural requirement by our Academic Institutions for genetic mapping projects. No information you provide is shared with the American Kennel Club, the Canine Health Foundation, or any private inquirer. The information as to who chose or declined to participate in the study is confidential as well. Individual identifiers are stripped from all dogs and samples once they reach our laboratories and DNA is only referred to by a coded number. Access to information you provide is limited to our immediate staff and is kept in multi-passworded computer files. Written information is held in locked files that only we access. Published data and data used in seminars or symposia are also coded to protect the privacy of those who aid this important effort. We appreciate that each of you do the very best job you can breeding healthy dogs, and we understand the amount of time and effort you put into the production of each litter. We understand also that your reputations are important to you, as ours are to us, so we are committed to maintaining the strictest confidentiality policies.

Once a gene(s) is found, you and your fellow breeders will need to decide what to do with the information. In our experience with small breeds that have a restricted gene pool, the best practice is NOT necessarily to remove carriers from your breeding programs, but simply to avoid breeding carriers to one another ' whenever possible. Removing too many dogs from what is already a limited gene pool will likely just result in the appearance of another, different, genetic disease. At the point where a gene(s) is found, we will make the resultant technology available so that diagnostic tests can be developed by others. Such tests will not be offered by my lab, which is strictly a research lab. Some of you may wish to participate in genetic testing, others may not. That will be up to you as individuals and as an individual breeder to decide. You are in no way obligated to participate in any later genetic testing of your dogs and no genetic samples you provide will be forwarded to anyone else.

Why are we going to all the trouble to find this gene(s) when acceptable therapies exist for affected dogs? Our reasons are two-fold. First, we believe your breed and breed club are unique in that Bull Terriers have a well-described disease, and that you are unusually well informed about canine genetics. This offers us a chance to test many of the theories and ideas we have about genetic mapping of canine disease genes on this disorder. In other words, we believe that by working with you we have the best chance of success. The successful mapping of this gene in your breed will thrust you into the limelight of canine health as a progressive and thoughtful group of breeders. Importantly, this will encourage other breed clubs, who are perhaps not so visionary, but whose dogs are plagued by more serious genetic illnesses, to establish similar collaborations that will improve the health of their breed. In a sense, you are doing it as much for other breeds and their inherited blindness, hip dysplasia, heart disease, and epilepsy as you are doing it for Bull Terriers and their "spinning." Second, although there are some notable differences, the disorder featured in your breed is reminiscent of obsessive compulsive disorder in humans. Identification of the canine gene could be of enormous value to researchers' studies of similar diseases in humans, and could ultimately contribute to the development of treatments for humans and dogs alike.

Letter to: Breeders Page 2

In my 15 years as a geneticist, my collaborators and I have collected DNA samples and health information from over 6,000 individuals with potential inherited diseases. At any given time, over 1,000 samples are under analysis in my laboratory. We believe we have the understanding, methodology, and know-how to make the very best use of the samples and information you provide. Our commitment to improving Bull Terrier health can be a major step forward for canine health in general. We ask you to be our partners in that effort. Please do not hesitate to contact either of us with additional questions or comments. If you are willing to participate, please contact Dr. Alice Moon-Fanelli at 508-839-5395 x84702 and she will send you blood collection kits and behavior surveys. She will need information for the siblings, parents and grandparents, if available, of the affected dog.

Sincerely,



Elaine Ostrander, Ph.D.
Head, Program in Genetics
Associate Member, Divisions of Clinical Research and Human Biology
Fred Hutchinson Cancer Research Center



Alice Moon-Fanelli, PhD, Certified Applied Animal Behaviorist
Clinical Assistant Professor
Tufts University School of Veterinary Medicine
Department of Clinical Sciences
200 Westboro Road
North Grafton, MA 01536

BULL TERRIER SURVEY

Date: _____ Dog's Name: _____

Recorder _____ Registered Name: _____

Owner's name: _____ Sire (father): _____

Address: _____ Dam (mother): _____

e-mail address: _____ Date of Birth _____

Telephone: _____ Age of pet now _____

Fax: _____ Age acquired pet _____

Weight _____ Color _____

Sex: Male _____ Female _____

Neutered: Yes _____ No _____

Age neutered _____ Date Neutered _____

Reason for neutering _____

Any behavioral changes after neutering? _____

Does the pet have any pre-existing or current medical problems? _____

BEHAVIORAL PROBLEM

Behaviors

Please **check the left-hand column** if your dog has any of the following behaviors **and provide a brief description.**

1. _____ Tail chasing or spinning

2. _____ "Hypnotized" (freezing and/or stalking gait)
 when walking under things.

3. _____ Staring (at a particular point on the floor
 or wall).

4. _____ Fly-bite, shadow/light chase, flank suck (specify which one).

5. _____ Unusual sensitivity to noise.

6. _____ Fears and phobias (irrational fears)
 e.g. of common objects.

7. _____ Aggression directed toward people
 or objects.

8. _____ Other (please specify)

Behavior	Age of Onset	Frequency of occurrence (hourly, daily, weekly, monthly)	Duration of average bouts (seconds, minutes, hours)	Range of Duration (shortest and longest bouts)	Describe behavior and how long has this has been a problem?
Tail chase/spin					
"Hypnotized"/Trance					
Staring					
Fly-bite Shadow chase Flank suck					
Unusual sensitivity to noise					
Irrational fears and phobias					
Aggression to people or objects					
Other Compulsions					
Other Behaviors					

For **each** behavior checked from page 2, please answer the following questions (if more than one behavior was checked off, please answer the questions for additional behaviors on the back of this page):

1) What conditions elicit the behavior?

2) Can the animal be interrupted when engaged in the activity?

How long before it resumes?

3) Describe any methods used to stop the behavior and the dog's response.

4) Have there been any changes in the pattern, frequency, intensity and duration of bouts from the onset to the present?

Please check the appropriate box if your dog exhibits any of the listed behaviors at any time when you or any member of the family do the following:

	Growl	Lift Lip	Snap	Bite	No aggressive response	Not tried
Touch dog's food while eating						
Walk past dog while eating						
Add food while dog is eating						
Take away real bone or rawhide						
Walk by dog when s/he has a real bone/rawhide						
Touch delicious food when dog is eating						
Take away a stolen object						
Physically wake dog up						
Physically disturb resting dog						
Restrain dog when it wants to go someplace						
Lift dog						
Pet dog						
Medicate dog						
Handle dog's face/mouth						
Handle dog's feet						
Trim the dog's toenails						
Groom dog						
Bathe or towel off						
Take off or put on collar						
Pull dog back by the collar or scruff						
Reach for or grab dog by the collar						
Hold dog by the muzzle						
Stare at the dog						
Reprimand dog in loud voice						
Visually threaten dog: newspaper or hand						
Hit the dog						
Walk by dog in crate						
Walk by/talk to dog on furniture						
Remove dog from furniture: physically or verbally						
Make dog respond to command						

Does your dog get a glazed look in his/her eyes? _____

Does your dog have a Jeckyl and Hyde personality? _____

Do you consider your dog hyperactive? _____

THE PET

Is your pet calm, timid or relaxed; normally alert and playful; easily excitable or hyperactive?

Behavior patterns of relatives: Have parents and/or siblings expressed any of the behaviors listed in this survey?

List other pets in the household now _____

Other pets that were in the household at the time this one was acquired _____

Describe interactions between pets in the household:

How does pet react to strangers?

Is the animal primarily and indoor or outdoor animal? _____

PET'S DAILY ACTIVITIES

Describe in detail 24 hours of a typical day in the pet's life starting with where the pet is when it wakes up in the morning.

DIET

Type of food given:

Frequency of feeding:

Quantity of food given:

Other:

Please Provide Name & Phone Number of your Local Veterinarian

If possible, please enclose copy of your dog's pedigree along with the completed form

Addendum for Tail Chasers Only

1. Does your dog tail chase every day? _____

If so, how much time per day does your dog spend tail chasing? _____

0--none

1--less than one hour per day

2--1-3 hours per day

3--4-8 hours per day

4--almost all waking hours

2. Does your dog become distressed (anxious, aggressive) when you attempt to interrupt tail chasing bouts via restraint or other measures?

0--no distress

1--distress is mild, infrequent, and not too disturbing

2--moderate distress

3--marked increase in anxiety

4--near constant distress

3. Please give a description of what your dog does when you prevent it from tail chasing.

4. Does your dog seem aware of its physical surroundings when it is tail chasing? Please explain your answer.

5. Does the amount of time your dog spends tail chasing interfere with its normal daily activities? Please circle the category that best explains your answer. Provide examples if possible.

0--no interference

1--slight interference

2--mild to moderate interference

3--definite interference with normal life, but still manageable

4---incapacitates every aspect of life

6. Does the amount of time your dog spends tail chasing interfere with your relationship with your dog? Please circle the category that best explains your answer. Provide examples if possible.

0--no interference

1--slight interference

2--mild to moderate interference

3--definite interference with normal life, but still manageable

4---incapacitates every aspect of life

7. Please estimate what percentage of your dog's active time during a 24 hour period is spent engaged in tail chasing.

8. Has your dog developed any physical problems as a result of tail chasing? Please describe.

**Instructions for Sending Blood Samples for Tufts University School of
Veterinary Medicine and Brudnick Neuropsychiatric Research Institute
Bull Terrier Compulsive Behavior DNA Bank**

Veterinary Instructions

1. Volume of Blood

For Standard Bull Terriers, 0.6-1.0 ml/kg (15-20ml) of blood is preferred.

2. Blood Collection

Collect blood samples in an EDTA anticoagulant collection tube (purple top) and mix well. Divide the sample into 5 ml aliquots.

Please remove needle from syringe before gently squeezing the blood sample into the collection tube in order to avoid hemolysis of the sample. Do your best to draw and send blood that is truly red in color and not a dark red-black as this is a sign that the red blood cells have started to lyse and release enzymes that degrade the DNA.

3. Handling of Sample

Label the enclosed tubes with the animal's name, breed, sex, and designated project (TUSVM DNA Project) and place the labeled tubes in the container that is provided.

Although it is ideal to ship samples immediately, samples may be stored in a refrigerator (4C) for up to 2 days prior to shipping.

4. Consent Form

Please have the owner sign the informed consent form in your presence.

Owner Instructions

Transport of Sample and Paperwork

1. Please e-mail Dr. Alice Moon- Fanelli to let her know when to expect arrival of the samples so we can ensure that they are received and properly stored. alice.moon-fanelli@tufts.edu

2. Ship blood sample to Dr. Moon-Fanelli:

Place the blood sample container with a frozen cold pack in an overnight mailer approved by a shipping company such as the United States Postal Service, Federal Express, UPS or Airborne Express. Ship samples overnight delivery **Monday – Thursday**.

3. Please send the following paperwork to Dr. Moon-Fanelli:

Tufts University School of Veterinary Medicine will reimburse any technician fees for blood collection and overnight shipment fees for samples.

- **Completed survey form**
- **Signed consent form**
- **Pedigree (if available)**
- **Receipts for overnight mail service and veterinary bills for blood draw**

Alice Moon-Fanelli, PhD, CertAAB
Tufts University School of Veterinary Medicine
Dept. of Clinical Sciences
200 Westboro RD
North Grafton MA 01536

Tel 508-887-4702
Fax 508-839-8734



Patient Participation in Clinical Research

You have been invited by Dr. Alice Moon-Fanelli and Dr. Nicholas Dodman to have your Bull Terrier participate in the establishment of a DNA bank for the study of compulsive tail chasing which we believe may improve the understanding of this debilitating condition in the breed. To conduct the research to identify the defective gene causing compulsive tail chasing in Bull Terriers, we will need DNA from many normal, carrier and affected dogs. DNA will be isolated from a blood sample collected from your dog. Blood collection carries some minor risks including bleeding at the venipuncture site and the potential for hematoma formation, both of which can be controlled by local pressure. The blood you are donating is for preliminary research to search for the defective gene. There is no expectation that donating blood will allow you to determine the genetic status of your dog concerning tail chasing. If a test for carriers is developed in the future, it is probable that you will have to donate a new sample for a diagnostic test.

Your dog's active participation in what is often called "clinical research" is one of the principal means by which veterinarians and researchers can assess the benefits of newly developed diagnostic and treatment modalities.

The clinical research which you have been invited to participate in has been carefully reviewed and approved by a federally mandated committee* of scientists and non-scientists who ensure that your dog's well-being is the foremost concern of your veterinarian and that your dog's participation will not predispose him/her to any unalleviated stress or pain.

Only blood samples with completed forms sent to Dr. Moon-Fanelli will be used for this research. Please fill in all the requested information on the forms. Return the completed forms to Dr. Alice Moon-Fanelli, Tufts University School of Veterinary Medicine, Dept. of Clinical Sciences, 200

Westboro Rd., North Grafton MA 01536

The identity of all owners/breeders participating in this study will be strictly confidential. All participants will be assigned a code number by which they will be identified. The submitted behavioral and medical records will be maintained separately from hospital files to ensure confidentiality of all participants.

If you are interested in participating, please review and sign the attached consent form. It clarifies your rights as the legal owner of your dog and explains the liabilities associated with your decision to participate in our study.

Name of Dog:

Sex:

Name of Owner:

Address of Owner:

Phone Number of Owner:

Name and Address of Veterinarian:

Phone Number of Veterinarian:

I certify that the blood submitted is from the dog listed on this submission form:

Owner (or agent)

Date:

I have witnessed the signature of the above:

Veterinarian or Witness:

Date:

Tufts University thanks you for considering this invitation.

* Institutional Animal Care and Use Committee

Patient Participation in Clinical

Form

Research - Owner Consent

Study Title: ..Bull Terrier Families Affected with Compulsive Tail Chasing Behavior: Behavioral Diagnosis, Pedigree Collection and DNA Isolation for Future Genetic Mapping Studies.....

I, of, am the legal owner of, a year-old

I do hereby give my consent to have participate in a clinical research study being conducted by Dr. Alice Moon-Fanelli.

I understand that this study is collecting blood for DNA isolation from tail chasing Bull Terriers and their relatives.

I understand that my animal's participation in this study is voluntary.

I understand that I can refuse to have my animal participate in this study. A refusal or withdrawal will not adversely effect any future care.

I understand that my animal's participation in this study may not alleviate or cure his/her ailment.

I understand that no funds are available to provide financial compensation for my animal's participation in the study.

I understand that in the event of a complication arising from my animal's participation in the study, medical or surgical care will be provided. However, I will remain financially liable for the cost of such care.

I understand that Tufts University will not be held liable for any unforeseen events arising from this study.

I have had the goals and anticipated risks and benefits of the study fully explained to me and I have had all my questions regarding my animal's participation satisfactorily answered.

I have retained a signed copy of this statement.

.....
Owner

.....
Date

.....
Witness

.....
Date