

VIZSLA EPILEPSY RESEARCH PROJECT
General Information

INTRODUCTION

In March 1999, the AKC Canine Health Foundation awarded a grant to researchers at the University of Minnesota College of Veterinary Medicine to study the molecular genetics of canine epilepsy in Vizslas, English Springers, and Beagles. The goal of the study is to identify a marker or gene for epilepsy and to develop a screening test to determine normal, carrier, and affected status, thus allowing breeders the potential to eliminate epilepsy. Lay and scientific abstracts are on the back of this page.

GATHERING INFORMATION

This packet contains the following forms:

- Consent form for participation in the “Vizsla Epilepsy Research Project”
- Instructions for Blood and Tissue sample submission
- Litter List
- Litter Information
- Individual dog Questionnaire

To help determine possible links between epilepsy and other conditions, some questions on the forms ask about other diseases, conditions, or characteristics. Please answer as accurately and completely as possible.

Complete families, including both seizing and non-seizing dogs, are critical to this project. Wherever possible, submit samples from an entire litter, both parents and their siblings, and all available grand parents and their siblings (and beyond if available). Owners of **individual seizing dogs** whose families are not being studied are welcome to submit blood or tissue samples, Individual Dog Questionnaires, and Pedigrees, which will be used later in the project.

How to begin

1. Complete the Consent Form, and Individual Dog Questionnaire for each dog.
2. For each litter, make a “litter packet” that contains the Litter List, Litter Information. To each litter, assign a Litter ID Code using the kennel name or breeder’s name, plus the date of birth; for example of John Doe had a litter born May 15, 1992 the code would be Doe 05-15-92. Put this on all litter forms.
3. For each litter supply a correctly formatted (sire on top, dam on bottom) 4 or 5 generation typed or computer generated Pedigree.
4. Collect a blood or tissue sample from each dog. Refer to Instructions for Blood and Tissue Sample Submission for procedures.
5. On a spare copy of the Pedigree mark for yourself who is sampled, not sampled, and deceased/unavailable, to keep track of dogs from whom you need to obtain samples.
6. Send all materials to the address at the bottom.

Make and distribute additional copies of all forms as needed. Keep copies of everything for you records.

To request forms or if you have any questions or need assistance completing the forms or pedigrees, call the Canine and Equine Genetics Lab at the University of Minnesota 612-624-5322.

Epilepsy Research Project
C/O Dr. Ned Patterson
Canine Genetics Lab
Department of Small Animal Clinical Sciences
C339 Veterinary Teaching Hospitals
1352 Boyd Ave, St. Paul MN 55108
612-624-5322

VIZSLA EPILEPSY RESEARCH PROJECT

University of Minnesota

Ned E. Patterson DVM, PhD James R. Mickelson PhD, and P. Jane Armstrong DVM, MS

Lay Abstract

We propose to develop a genetic screening test for canine epilepsy, a serious late-onset seizure disorder affecting a large number of breeds. The onset of seizures in dogs with epilepsy is typically from one to five years of age. The late onset means that often a dog has already been bred before it is known to be affected. In some individuals, seizures are well controlled with anticonvulsant medications, but a significant number of dogs have “refractory” seizures needing high doses of medications to achieve control. The severity of seizures may be such that the owner elects to have the dog euthanized. A genetic test for epilepsy would allow breeders to screen potential breeding animals for this common, frustrating, and potentially devastating disorder prior to making breeding decisions. We propose to determine the mode of inheritance for epilepsy in 3 breeds (English Springer Spaniels Vizslas, and Beagles) and to use genetic markers to develop a screening linkage test for predicting epilepsy in these breeds. This approach to identifying the region of the canine genome containing the defective gene will ultimately lead to the prediction of candidate genes that can be characterized to define the precise defect responsible.

Science Summary

We propose to develop a microsatellite screening test for epilepsy in English Springer Spaniels, Vizslas, and Beagles. Epileptic dogs will be identified and the mode(s) of inheritance determined in each breed. Owner questionnaires will be conducted to classify the phenotype of each individual in extended three generation pedigrees to determine the mode(s) of inheritance by pedigree analysis. Genetic linkage analysis using microsatellites markers will be used to attempt to find a DNA marker linked to canine epilepsy in one or more of the breeds. A number of linked markers will hopefully be identified and a linkage map of these markers to the epilepsy locus will be constructed. The region of the canine genome containing these linked markers will be determined from somatic cell hybrid panels or the developed and emerging canine linkage map. Comparative mapping across species may allow prediction of candidate genes based from the syntenic chromosomal position in humans. Affected pedigrees and epileptic kindreds from the study breeds will be genotyped and the linkage data examined to determine if genetic heterogeneity exists within and between breeds. Dogs with predicted disease status will be followed to assess the accuracy of disease prediction based on the linkage test.

CONSENT FORM FOR PARTICIPATION IN THE “VIZSLA EPILEPSY RESEARCH PROJECT”

DOG’S REG. NAME: _____

The undersigned, who is the owner or co-owner (or owners or co-owners) of the above Vizsla, such Vizsla having been born on _____ and having been issued # _____ as it AKC registration number, agrees to participate in the above “Epilepsy Project” (as more fully defined below). The undersigned acknowledges that participation includes cooperation on the following:

1. Submission of copies of (a) the above Vizsla’s AKC registration certificate and 4-generation pedigree (or, alternatively, written authorization to the Epilepsy Project to obtain additional pedigree information about the above Vizsla from the AKC) and (b) completed litter information forms and lists with respect to breedings of the above Vizsla;
2. Transmission to the Epilepsy Project of blood and/or tissue samples (with tissue samples, however, only to be submitted after a dog is deceased);
3. Completion of a general health survey on the above Vizsla and/or participation in a telephone interview (lasting approximately 20 minutes); and
4. Granting permission for the Epilepsy Project to contact the above Vizsla’s veterinarian regarding its health history.

The undersigned acknowledges his, her, or their understanding that the “Vizsla Epilepsy Research Project” (sometimes herein “Epilepsy Project”) entails research to be carried out by the principal investigators at the University of Minnesota, pursuant to the research study that is more fully described on the reverse side of this Consent Form, as well as that the study has been approved by, and is being funded by The American Kennel Club Canine Health Foundation. It is agreed that this “Epilepsy Project” may be expanded and/or supplemented in the future to include other research studies relative to epilepsy and that this Consent Form constitutes the undersigned’s approval of utilization of all submitted information provided each study is approved by the Vizsla Club of America and/or the AKC Canine Health Foundation.

The undersigned further acknowledges that information provided to this “Epilepsy Project” will be made available solely to (a) the principal investigators for the study described on the reverse side of this Consent Form and their staffs (as well as, possibly, scientific investigators involved in epilepsy studies approved in the future by the AKC Canine Health Foundation and/or the Vizsla Club of America) and (b) persons associated with the Vizsla Club of America who are working on this project and who are specifically approved to receive such information by the Vizsla Club of America Board of Directors. **It is also understood that any publication for the public, resulting from this Epilepsy Project, will refer to individual dogs solely by an anonymous code.**

Signature (Date)

Address

Name (Print)

Telephone number

Signature (Date)

Address

Name (Print)

Telephone number

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Signing Parameters in Situations Involving Co-owners: In a situation involving a Vizsla that is co-owned, a single co-owners may submit this Consent Form. In any case in which less than all co-owners’ signatures are provided, however, the signature(s) of the signing co-owner(s) shall and herewith does constitute his, her, or their representation that submission of this Consent Form is duly authorized by all co-owners.

Transmittal Information: After completion and signing, the Consent Form should be sent to the University of Minnesota Epilepsy Project, to the attention of Dr. Ned Patterson, at the following address:

Epilepsy Research Project
C/O Dr. Ned Patterson
Canine Genetics Lab
Department of Small Animal Clinical Sciences
C339 Veterinary Teaching Hospitals
1352 Boyd Ave, St. Paul MN 55108

Instructions for Blood & Tissue Sample Submission

Blood Sample

- Submit 10 cc's of whole blood in a purple-topped (EDTA) tube(s). If 10-cc tubes are not available, use two 5-cc tubes or three 3-cc tubes.
- Put the blood sample in the tubes and gently rock it a few times to distribute the anticoagulant: **Do not spin, extract serum, or anything further.** Refrigerate if the sample is being held for any time before shipping.

Tissue Sample

- If the dog dies, donating an organ will provide an enormous supply of DNA for the research. Please discuss organ donation with your veterinarian before the dog's death.
- If the dog is to be euthanized, first take a blood sample if possible, and send both samples.
- Appropriate organs in order of preference are: 1) spleen: 2) kidney: 3) liver (only a portion of the liver is needed).
- Have the organ removed as soon as possible after the dog's death. Place the organ into a labeled freezer bag, place in a second bag, freeze, and ship.

Labeling and Forms

- Label the sample with the following: Vizsla Epilepsy Research, dog's registered name, AKC number, call name, and affected/not affected status.
- If you are submitting several dogs' samples together, number each dog's forms and samples to prevent a mix up (Sample #1, #2 etc., accompanies forms #1, #2, etc.)
- Complete the Consent Form.
- Complete an Individual Dog Questionnaire and include a Pedigree with the sample. Mark the pedigree with a highlighter to indicate where this dog fits in the pedigree, and in the space at the bottom provide the dog's registered name, call name, and AKC number (if they are not on the Pedigree) and relationship to the epileptic dog(s) in the Pedigree, and indicate affected/ not affected status.

Shipping

- Pack the sample in a small insulated container (most vets have these for shipping samples to labs), with one or more cool packs. Blood samples must be kept cool but not frozen, and the tissue must be kept as frozen as possible. If you're sending both types of samples together, place the cool packs around the tissue sample, and wrap the blood samples in newspaper or other packing material to insulate it somewhat from the cool packs and frozen organ.
- Ideally, ship the sample immediately (make sure tissue samples are completely frozen first). Ship by overnight delivery (US Mail, UPS, or FedEx). **Do not send on a Friday** because no one may be available to accept the delivery on a Saturday, and the sample might become unusable by Monday.
- If the samples are held for a day or over the weekend, blood must be refrigerated and gently rocked to redistribute everything once a day, and the tissue samples must be kept frozen.
- **Send samples with all forms to:**

Vizsla Epilepsy Research Project
C/O Dr. Ned Patterson
Department of Small Animal Clinical Sciences
University of Minnesota
C339 Veterinary Teaching Hospitals
1352 Boyd Ave.
St. Paul MN 55108

If you have any questions or need assistance please call the neuromuscular genetics lab at 612-624-5322.

VIZSLA EPILEPSY RESEARCH PROJECT
INDIVIDUAL DOG QUESTIONNAIRE

(For seizing and non-seizing dogs)

Litter ID Code: _____

Registered Name _____ Call name _____
 AKC# _____ Birth date _____ Sex _____

Owner _____ Alternate contact _____
 Address _____
 Phone (day) (____) _____ (____) _____
 Phone (eve) (____) _____ (____) _____
 Fax (____) _____ (____) _____
 E-mail _____

Blood or tissue sample submission date: _____

Does this dog exhibit any of the following conditions? (Attach particulars for any Yes answer)

- | | |
|---|---|
| Y – N Aggression | Y – N Heart problems (specify) _____ |
| Y – N Allergies | Y – N Hernia (where?) _____ |
| Y – N Arthritis | Y – N Reproductive disorders |
| Y – N Autoimmune disorders | Y – N Seizures/Epilepsy |
| Y – N Bleeding disorders | Y – N Skin/ Coat problems |
| Y – N Cancer/ Tumors | Y – N Structural abnormalities(hip/elbow dysplasia) |
| Y – N Deafness / Hearing impairment | Y – N Other (specify: _____) |
| Y – N Ear infections | Y – N Other (specify: _____) |
| Y – N Eye diseases / problems (specify) _____ | |

Testing done on this dog:

OFA/PennHIP	Y – N	age at test: _____	results _____ # _____
ACVO exam	Y – N	age last tested: _____	results _____ # _____
Thyroid	Y – N	age last tested: _____	result _____
Allergy	Y – N	age at last test: _____	result _____
Heart	Y – N	age at last test _____	type of test _____ result _____

Other (please attach separate sheet)

VIZSLA EPILEPSY RESEARCH PROJECT
Litter Information

(Attach Pedigree, and Litter List)

Litter ID Code: _____

Breeder(s): _____

Litter birthdate: _____

Information Contact: (Name) _____

(Street, City, State, Zip) _____

(Phone – Day) (____) _____

(Phone – Eve) (____) _____

(Fax) (____) _____

(Email) _____

Age of parents at breeding: Sire: _____

Dam: _____

This litter resulted from (circle all that apply):

Natural breeding

Artificial Insemination

Surgical Insemination

Chilled semen

Frozen semen

Number of pups:

- At birth: Live M____ F____ Dead M____ F____
- Surviving at 6 weeks: M____ F____
- Surviving at 1 year M____ F____
- Surviving at submission date M____ F____

Known health problems in litter (list problem, dog name & Litter ID Code form Litter List, age of onset of problem, and pertinent details). Please attach additional sheets if necessary.

Other litter notes or comments, attach additional sheets if necessary