A New DNA Test for PRA in English Springer Spaniels

Dr Cathryn Mellersh and colleagues at The Animal Health Trust in England have recently identified and reported a mutation that causes PRA in Miniature Longhaired Dachshunds. Dr. Mellersh has found that the mutation is not restricted to Dachshunds and The University of Missouri has investigated the frequency of this mutation in English Springer Spaniels primarily from North America.

Considerations for English Springer Spaniel Breeders

The mutation is a risk factor for the development of PRA in English Springer Spaniels: Most of the dogs that were tested in the USA as "affected" are considered to have normal eyesight by their owners. Some of these dogs may develop PRA as they get older; however, there are many examples of old English Springer Spaniels that DNA test "affected" but, have subtle, if any, visual impairment.
On the other hand, 95% of the English Springer Spaniels with clinically recognized PRA test "affected." Erroneous diagnoses or a second rare form of PRA may account for the 5% of English Springer Spaniels with PRA that do not test "affected."

The USA study implies that the likelihood of developing PRA is approximately 20 times higher for English Springer Spaniels testing "affected" than it is for other English Springer Spaniels. This is strong evidence that testing "affected" is a major risk factor for PRA in English Springer Spaniels and indicates that the prevalence of English Springer Spaniel PRA can be reduced by breeding programmes that select away from the mutant gene. This can be accomplished by giving highest preference to breeding stock that test "normal," intermediate preference to dogs that test "carrier" and lowest preference to dogs that test "affected."

Recommendations to English Springer Spaniel Breeders: Although we believe that English Springer Spaniel breeders should make efforts to reduce PRA in future generations of their line, we also believe that if the mutation is so common in the Breed, overly aggressive elimination of dogs testing affected or carrier from breeding consideration could have an overall detrimental effect on the Breed and could devastate successful breeding programmes.

A realistic approach when considering which English Springer Spaniels to select for breeding would be to consider dogs with the mutation to have a fault just as lack of working ability, poor top line, or imperfect gait would be considered faults.

Dogs that test “affected” with two mutant copies of the PRA gene should be considered to have a worse fault than “carriers” with only one mutant copy. English Springer Spaniel breeders could then continue to do what conscientious breeders have always done: make their selections for breeding stock in light of all of the dogs’ good points and all of the dogs’ faults. Using this approach over several generations should substantially reduce the prevalence of PRA while continuing to maintain or improve those qualities that have made English Springer Spaniels so popular.

Ongoing research: One problem with this approach is that the clinical consequences of testing “affected” are, as yet, poorly defined. Thus, it is hard for breeders of English Springer Spaniels to determine how much priority should be given to selecting away from the mutation. To better understand the clinical consequences, we will continue to assess clinical eye examinations (BVA/ECVO & AHT) and other relevant medical records of the dogs that are tested.
When the results of these studies become available, they will be posted at this Website.

Testing your English Springer Spaniels:

- A DNA test for PRA in the English Springer Spaniel is now available at the Animal Health Trust.

- The AHT will require **cheek swabs** for the DNA test.

- The cost of each test is £50 (including VAT). This includes the cost of the cheek swab sampling kit. A 20% discount is offered if 20 or more samples are sent in together in a single batch for testing.

- Animal Health Trust **DNA Testing Form** can be downloaded from the AHT website at www.aht.org.uk. Kits for taking cheek swabs are available by phoning 08700 509144 or via email to swab.request@aht.org.uk.

- Further information can be obtained by emailing dna.testing@aht.org.uk.

- Samples should be sent together with a completed DNA Testing Form and payment for each sample to:

  Genetic Services, Animal Health Trust,
  Lanwades Park,
  Kentford,
  Newmarket,
  Suffolk CB8 7UU.

- For most tests offered by the AHT, 100 – 200 samples are routinely handled per month and turnaround time is usually a few weeks. However, this may take longer during very busy periods.

- Owners of all samples that the AHT has actively used in the research that has led to the development of this DNA test will be entitled to the genetic results of those samples free of charge in an email. The AHT will make a charge of £5.00 if the owner would like a certificate.
  For samples to have been used in the research, they must be from affected dogs, or closely related to affected dogs.
  All the samples that have been sent previously to the AHT will not have all been used, if they do not fall into the above categories.

Dr Gary Johnson
Dr Cathryn Mellersh

PLEASE NOTE:

- For a detailed explanation of how this form of genetic inheritance is passed down, please refer to our document “Genetic Inheritance” at this Website.

- All the UK ESS Breed Clubs will be consulted to agree a Code of Ethics and Guidance in order to help ESS breeders understand, assess and minimise the risks to their future breeding programmes, whilst still breeding for quality, type and temperament.

UK ESS Breed Clubs – Joint Health Co-Ordinators:

Lesley Bloomfield lesley@fernlin.free-online.co.uk
Louise Scott louise@goldcliffe1.freeserve.co.uk