

This year, the Old English Sheepdog world is celebrating an incredible gift – a test for Cerebellar Degeneration which, if used faithfully and correctly, can eliminate this disease from the OES gene pool!

Here are some questions, answers, and updates!

## Cerebellar Degeneration (CA) Testing for Old English Sheepdogs

### Frequently Asked Questions

Owners and breeders of Old English Sheepdogs have a new test immediately available to genotype dogs for the disease of cerebellar degeneration, also referred to as cerebellar ataxia & cerebellar abiotrophy. With universal use of this test, it is now possible to eradicate the disease from the breed.

1. Where can I find information on the disease and the research leading to this test?
  - a. **For a basic understanding of the disease, read Dr. Jerold Bells' article, "CA in the OES."**  
You can access this material by going to the OESCA web site. Choose "Health" from the left-hand column. On the "Health" section home page, choose "CA Information Center", then "CA in the OES".
  - b. **To view the announcement of test availability for cerebellar ataxia in the Old English Sheepdog, in the "CA Info Center Contents", marked "New!"** at the bottom of the list, is the official announcement of the identification of the mutation responsible for CA. This can also be accessed from the information streaming at the bottom of the OESCA home page.
  - c. **For a review of research leading to the breakthrough and identification of the test by the lead researcher, Dr. Natasha Olby, go to the Members' Area of the OESCA web site for access to "The Cerebellar Saga",** Dr. Olby's presentation at the 2012 National Specialty.
  
2. **If you would like to find out whether Dr. Olby's laboratory has genotyped your dog using DNA from the OFA CHIC DNA Bank, please click on the link below,** print, and mail or fax, following the instructions on the form.  
[http://www.oldenglishsheepdogclubofamerica.org/pdfs/health/PDFv1\\_OES\\_CA\\_Genotype\\_Request\\_Form.pdf](http://www.oldenglishsheepdogclubofamerica.org/pdfs/health/PDFv1_OES_CA_Genotype_Request_Form.pdf)

3. What steps do I follow to have a dog tested?
  - a. Go to [www.cvm.ncsu.edu/vhc/csds/vcgl](http://www.cvm.ncsu.edu/vhc/csds/vcgl) . That is the “Veterinary Genetics Laboratory” page. Scroll down the page. On the right hand side of the page it will say "Old English Sheepdogs". Click on it and it will open the form titled "Cerebellar Degeneration in Old English Sheepdogs and Gordon Setters". This contains complete instructions and the submission form.
  - b. You will also find, on the VGL page, directions for requesting swab kits if you prefer to use that method instead of submitting blood.
  
4. Should I test all of my dogs?
  - a. **To eliminate the condition from our gene pool, the only dogs that must be tested are the prospective sire and dam of a proposed litter.** Of course any and all can be tested if you wish to know more about the genetics of your dogs, but only the immediate sires and dams are responsible for the OES’s genetic future.
  - b. **Since this is an autosomal recessive gene, the only thing that determines the risk of a potential breeding is the status of the parents.** If both are affected (C/C) then all offspring will be affected. If both parents are carriers (C/c and C/c) then 1/4 will be affected, 1/2 will be carriers and 1/4 will be normal. If a clear dog is bred to a carrier, 1/4 of the puppies will be carriers. If both parents are clear, then all offspring will be clear.
  - c. **Once you have established that both parents are clear, you will not need to test the off spring since neither parent will be a source of the CA gene.**
  - d. **If you breed a clear parent to a carrier parent, you will need to test the puppies to establish which are clear and which ones might be carriers.**
  - e. An important part of the good news is that we can now safely use CA carriers in a responsible and safe manner and ensure that their positive qualities are passed to future generations. **It is important that a superior dog remain in a breeding program and not be excluded because he/she is a carrier.**
  - f. **To summarize:**
    - i. A clear dog can be bred to another clear or to a carrier.
    - ii. A carrier must be bred to a clear.
    - iii. If a carrier is bred to another carrier, the inherent risk is the possibility of having an **affected** puppy, a carrier puppy, and a clear puppy in the same litter.
  
5. Can testing be done on a dog’s frozen semen?
  - a. **Yes.** One straw (or pellet) is required. For details and instructions please contact:

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Veterinary Cardiac Genetics Laboratory  
North Carolina State University  
[lswiggin@ncsu.edu](mailto:lswiggin@ncsu.edu)  
(919) 513-3314

6. How does this test eliminate one of the risks in breeding decisions?
  - a. **Responsible breeding means making sure that the healthiest dogs and bitches are used to carry the breed forward.** We x-ray for orthopedic soundness, test eyes, hearing, and thyroid. The results of these tests are vital for our decision making, yet none of them assure us, 100%, that these problems can be eliminated from our gene pool or that the offspring of a breeding pair will not be affected by these conditions. With these kinds of testing we can reduce the level of risk, but offspring even of two normal parents may still be affected or carriers of the conditions we test for. We can still breed a pair that both have “Excellent” hip ratings, for example, and produce offspring with some degree of hip dysplasia.
  - b. **On the other hand, the DNA test for CA can assure us that, if a Clear is mated to a Clear, offspring will not be affected or carriers and do not need to be tested, and if a Clear is mated with a Carrier, none of the offspring will be Affected,** and testing the offspring will tell us, for certain, their genetic status so that they can be safely integrated into a breeding program and the gene pool. The CA risk can unequivocally be eliminated.
7. How can this test ensure the eradication of Cerebellar Degeneration from the breed and at the same time enlarge the breed’s gene pool?
  - a. Let’s look at the scientific, big picture. **Imagine that everyone tested every breeding pair for CA and applied the knowledge properly. There would be no more affected CA dogs in our breed.** We would eradicate the disease in Old English Sheepdogs. To accomplish this, the breeders need to know 2 test results, those of the sire & dam. It is that simple. We do not need to know the test results of the sire’s or dam’s siblings or the grandparents.
  - b. Ever since CA was identified in the OES, and seemed to be prevalent in a number of lines, there was often hesitation on the part of breeders to use some otherwise worthy dogs from those lines in their breeding programs. In addition, the risk of producing dogs with CA was seen as too high by some breeders; they stopped breeding and those lines were lost. This has further reduced our already declining gene pool.
  - c. **Before development of the DNA test, breeders had two options available to assist in breeding away from cerebellar ataxia.** Dr. Jerold Bell’s pedigree risk analysis predicted the percentage of offspring from a certain combination that might be affected or carriers, but there was no certainty. **Dr. Bell’s analysis could only be based on information breeders and other scientists shared with him.** Accuracy of those analyses depended on that sharing. **The second option was to have breeding stock evaluated by neurologists for clinical signs.** This option was helpful in identification of affected dogs, but could not evaluate carrier or clear dogs.
  - d. **With the CD (CA) Test, the situation has been reversed from one of fear and guessing to one of insight and solutions.** We know with certainty the status of the sires and dams. Breeders will have the information and confidence they need to incorporate good dogs from any lines without worrying about the sire and dam’s CA status or the status of their offspring. **Good dogs should no longer be eliminated because of questions about**

**their CA status.** Frozen semen can be genotyped and used. **Options are expanded and the health and size of the gene pool is increased.**

8. Where and how do I post my dog's CD test results.
  - a. Use the CHIC Registry by registering your dog with OFA.
    1. Go to [www.offa.org](http://www.offa.org)
    2. On the home page, click on "FORMS" at the top of the page.
    3. On the next page, in the "FORMS AND DOWNLOADS" box, click on "OFA Application Forms"
    4. On the next page, there is a list of Individual Application Forms. Click on "DNA Based Genetic Disease".
    5. Under "Specific Genetic Disease Test Requested", write "Cerebellar Degeneration" and follow directions on the form.
    6. The registration cost is \$15. You will receive a certificate from OFA documenting the your dog's test results for Cerebellar Degeneration.
9. The Health and Research Committee is presently developing a protocol for posting CD (CA) test results on the OESCA website. Watch the website for further information. The important thing is to get your dogs tested!
10. I sent blood samples years ago, before the CHIC DNA bank. What has happened to those samples?
  - a. **If Dr. Olby's lab does not have a sample from your dog but you believe a sample was sent to the University of Missouri, contact Liz Hansen at [Hansenl@missouri.edu](mailto:Hansenl@missouri.edu).**
  - b. **Dogs still alive probably should be tested from a new sample if possible rather than use up the stored DNA.** That DNA can be saved for future OES research. But those dogs who are deceased, and that people feel strongly that they want to know test results for can be tested from stored DNA.
11. To receive a CHIC number, will OES owners be required to submit CD (CA) test results?
  - a. **The test is included in the breed's list of CHIC clearances as a "recommend" test.** It is now listed in the CHIC Information Center under OES Breed Requirements as optional. It is, however, **highly** recommended for breeding pairs.

Additional updates will be posted in the "CA Information" section in the "Health" section of the OESCA web site.