Cerebellar Abiotrophy

Cerebellar Abiotrophy (CA) is a rare neurological condition in which the cerebellum, which is the area of the brain which sits on top of the spinal column and controls movement, develops in the usual way, but neurons in its cortex die prematurely resulting in an increasing inability to move normally. These neurons are responsible for coordinating precise movement, for fine motor control. It is important to stress that this condition is extremely rare.

Dogs suffering from CA may exhibit exaggerated movement. The first signs an owner may be aware of is a dog's difficulty in climbing steps or turning around. Puppies may repeatedly fall over, or also develop a tremor when concentrating on something like eating. At 12 weeks many puppies can be a bit clumsy, but if your dog is displaying signs of ataxia (poor muscle control), it's advisable to make an appointment with your Vet to find out why this is happening.

Such symptoms are collectively known as Cerebellar Ataxia, and can have several causes, not all of them Cerebellar Abiotrophy (CA). Dogs, however, which are affected by CA usually deteriorate over time (sometimes quite rapidly) and euthanasia may become the kindest option for all concerned. Different breeds start to show symptoms at different ages. In the case of Lagotto, CA has been identified in puppies as young as 12 – 16 weeks. However, in one recent case the dog was euthanised at 16 months having shown symptoms at 3 months, plateaued and then deteriorated rapidly until finally his compromised quality of life made euthanasia the most appropriate option.

Your Vet may recommend a consultation with a Specialist Neurologist with the possibility of carrying out an MRI scan to establish what is going on. CA unfortunately can currently only be definitively diagnosed post-mortem by a veterinary pathologist.

CA occurs in a wide range of species and in a number of different breeds of dog, including the Lagotto. Currently, the specific cause of the condition in the Lagotto is not known. Researchers have had some success in developing DNA tests for CA for some breeds, but not yet for the Lagotto. However, researchers think there may be a genetic component, and work is presently underway at the Universities of Bern and Helsinki to try to identify the genetic variants responsible for the condition.
The crucial goal would be a simple DNA blood test, much like those we already have for Juvenile Epilepsy and Storage Disease, which would identify dogs at risk of either developing the condition or of passing it on to their offspring.

The research team at Bern is in the process of actively collecting blood samples from any Lagotto suspected as suffering from CA, and from as many of their close relatives (sire, dam, littermates) as possible whether or not these relatives are affected. If euthanasia is planned, it would be helpful for your Vet to contact the research team beforehand to establish precisely what other samples are needed. They may be able to recommend a UK Pathologist who is already working with the team.

At the time of writing (March 2024), it was our understanding that the in the past 10 years the research team at the University of Bern have only received samples from 14 affected dogs, none of which came from the UK. We have since received information that one UK-based Lagotto has been euthanized following a diagnosis of CA. We have been unable to discover whether samples were submitted for further research.

Caring for an initially normal puppy whose ability to coordinate movement is getting progressively worse is a very distressing experience for both the puppy and its owners. In the very unlikely event that your puppy is suspected of being CA affected, we would encourage you to participate in this very valuable research. Please contact the LRCGB Health Sub-Committee, whose details are listed on the LRCGB website, for further information, guidance and support.

Should any Lagotto owners/breeders, be invited to provide blood samples from the sire and dam of an affected puppy and unaffected littermates for CA research, we would urge them to respond in order to help provide important clues to the precise genetic variations which give rise to CA.

If you are contacted, please do help. It is vital that we all work together to help gather the required data, so that in the future we can use genetic testing to control or eliminate this disease in the breed.

LRCGB Health Committee
April 2025

For further information on CA:
https://lagottofoundation.org/wp-content/uploads/2023/03/CA-in-the-Lagotto-Information-3-7-23.pdf

Sample Submission Information: Cerebellar Abiotrophy in Lagotto Romagnolo Dogs
Research: Cerebellar Abiotrophy in Lagotto Romagnolo Dogs - Institute of Genetics

https://lagottofoundation.org/diseases/research/

Neuronal cytoplasmic inclusion bodies in the brain of Lagotto Romagnolo dogs: A qualitative and quantitative histologic evaluation - Sini Peura, Elina Kiiskinen, Tarja S. Jokinen, Anna-Maija K. Virtala, Pernilla Syrjä, 2024