

### **Studies of Renal Dysplasia in the Cairn Terrier**

The aim of this research project has been to investigate the heritability of renal dysplasia in the Cairn terrier breed. We have also sought out the degree to which genetics influence the severity of disease - whether it is mild, moderate, or severe – and the degree of relatedness between renal dysplasia and aplasia. Upon examination of several pedigrees, we have assessed the familial ties of over 2000 individuals, 1572 of which could be represented on a single pedigree. Within the population of dogs involved in the study, there are 34 Cairns that have ultrasonographic changes of the kidney that are consistent with renal dysplasia. 23 of the 31 affected animals have been directly linked to a single common ancestor. Parentage information has not yet been provided for 7 of the 8 remaining affected individuals; therefore, their relation to the aforementioned common ancestor has not yet been evaluated.

Scans have been performed at the University of Pennsylvania, Ontario (Canada), Texas, Virginia, Maryland, at the Montgomery County Dog Show and at many others. A review of the data shows clearly that the number of even mildly affected dogs has decreased to the point at which we only see one or two a year. This is largely due to the fact that the breeders affiliated with the CTCA take testing seriously. This not only helps the individual breeding programs but also our research to discover the genes causing renal dysplasia.

Lastly, our research has shown that it is important to wait until the puppies are at least 12 weeks old for their kidney scans, as younger dogs have less developed kidneys, which may lead to erroneous results. The research has also shown that mild speckling seen in some of the kidneys is not correlated with future clinical signs, but we know that it is linked to renal dysplasia. However, if there is moderate speckling, we do recommend placing such dogs on renal diets to avoid any unneeded stress on the kidneys. Yearly blood rechecks to assess kidney values are recommended.

What do we need to move forward? We need more DNA samples, - that means we need more blood from dogs with scan results, i.e. need as much ultrasound data as possible, even if it is normal. We will be sending out a request soon, and to make it easy, we will create a confidential website to collect data. We will request to have a link posted on the CTCA's website.

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\*Accurate number pending information from the AKC