



Cancer Genetics Branch  
National Human Genome Research Institute  
National Institutes of Health  
50 South Drive, Bldg. 50, Room 5347  
Bethesda, Maryland 20892-8000  
Phone: (301) 451-9390  
Fax: (301) 594-0023

## Digital Squamous Cell Carcinoma in the Giant Schnauzer

By: Elaine A. Ostrander Ph.D. and Dana Mosher B.S.

The Ostrander Lab at the National Human Genome Research Institutes of Health at NIH would like to update the Giant Schnauzer Club of America on our research into the genetic cause of Squamous Cell Carcinoma of the Digit (SCC) in the Giant Schnauzer breed.

Digital SCC is a malignant tumor that starts in the nail bed and usually requires the removal of a toe or multiple toes as treatment. This is a disease with genetic underpinnings and our ultimate goal is to identify the genetic variants responsible for susceptibility to this disease. Our work is currently focusing on two breeds at increased risk for Digital SCC, the Giant Schnauzer and the Standard Poodle.

At this time we have blood samples from 13 Giant Schnauzers diagnosed with Digital SCC and from 11 age-matched, unrelated, healthy Giant Schnauzers to be used as controls. To determine the genetic component of the SCC, researchers at the Ostrander Lab have designed a whole genome association study which is now entering a critical stage. In order for a sample to be analyzed the DNA must first be extracted from the blood. Our task is then to interrogate each chromosome with a set of DNA based markers to determine what portions of the genome affected dogs share that unaffected dogs do not. To do this we are using a new technology, the Affymetrix Canine Gene Chip. The Gene Chip will allow researchers to generate data on 127,000 DNA markers for each dog in as little as four days.

We can not emphasize enough that at this time we are still in need of more samples from dogs that have been diagnosed with Digital SCC as well as healthy dogs that are 6 years old or older. Our results are based on only a small set of samples and a larger sample set is needed to establish the statistical significance of the result in preparation for publication.

If your dog meets one of these criteria, please contact **Dana Mosher, Ostrander Lab Samples Manager, for a sampling kit by phone (301-451-9390) or email (mosherd@mail.nih.gov)**. Each kit contains a one page consent form, a pair of vials for collecting 5-10 cc of blood at your veterinarian's office, and instructions for handling the blood. The collection kit comes in a small cardboard mailer tube that protects the blood vials. A return address label is included so that the forms and blood can be sent back to the lab conveniently. Blood can be mailed at room temperature without cold packs.

All genetic and contact information collected for each dog will remain confidential. Specifically, your participation in the study, your dog's pedigree, health information you provide, and any data we get from your dog's DNA sample will not be disclosed to any breeders, Club personnel, the AKC, or the AKC Canine Health Foundation.

In advance, we thank you all for your participation as we continue our work to understand Digital SCC in the Giant Schnauzer. This research would not be possible without your dedication to this wonderful breed and its health. Only when the genetic cause of Digital SCC is determined can steps be taken toward the development of better treatments and the ultimate prevention of the disease. Thank you.