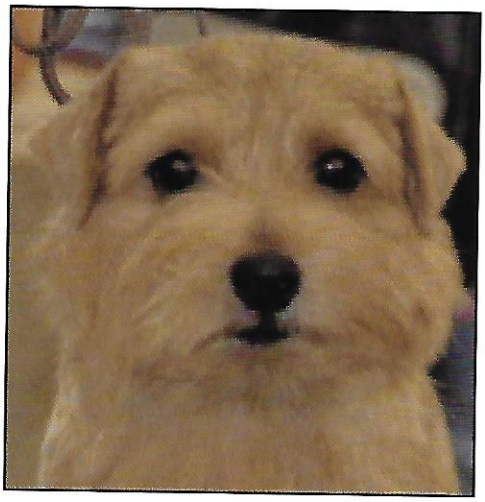
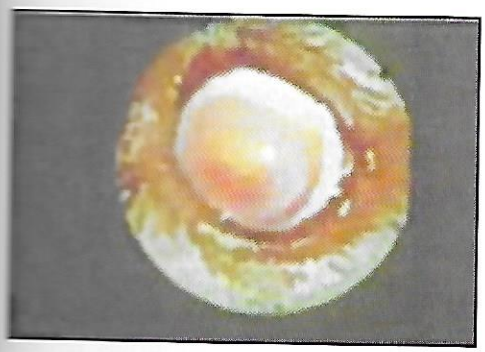
INHERITED EYE PROBLEMS IN THE NORFOLK TERRIER

by Nancy M. Bromberg, VMD, MS, DACVO

Several eye problems have been identified in the Norfolk Terrier during CERF/OFA exams. Eye problems suspected to be inherited are divided into those considered "Breeder Option" and those that are "No" for breeding advice. Problems considered to be breed-related but not vision threatening are "Breeder option". Those problems with the possibility of being vision threatening are "No" for breeding.



CORNEAL DYSTROPHY - epithelial/stromal: Subepithelial corneal cholesterol dystrophy is a condition where predominantly cholesterol is deposited just under the cor-



neal epithelium {surface layer of the cornea).It usually appears as a cloudy, sometimes almost shiny, area in the cornea. It rarely has any association with the amount of cholesterol in the food or levels in the blood, but an inability of the corneal cells to metabolize it. Corneal dystrophy rarely causes any vision deficits or discomfort.

PERSISTENT PUPILLARY MEMBRANES: During development of the eye, there is a membrane over what will become the pupil. This membrane breaks down prior to birth. Occasionally some strands of the membrane are left behind: persistent pupillary membranes (PPM).Usually these strands are iris to iris: meaning they go from one part of the iris to another, sometimes going across the pupil itself, but not touching any other ocular structure. They can, however, go back from the iris to the lens capsule or forward to the corneal endothelium (inner most layer of the cornea).In these cases, they can cause opacities at the point of attachment. Sometimes small tags of the

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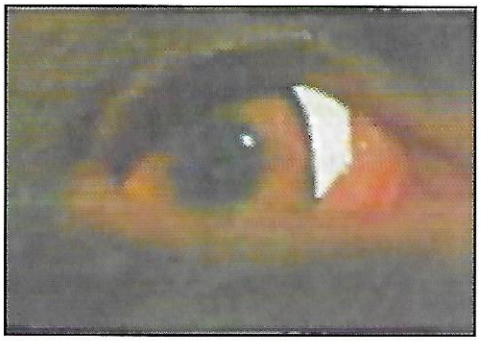
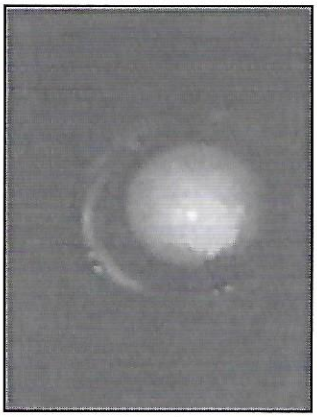


Iris to cornea PPM

membranes are present without the actual membrane. On very rare occasions, large sheets of the membranes remain. Iris to iris membranes, or tags on the lens capsule, are breeder option. All other forms of mem-



Mature Cataract

branes are "NO" for breeding advice. Iris to iris PPM are the most commonly identified problem in The Norfolk Terrier.

CATARACTS: cataracts are an opacity of the lens. There are different types of cataracts. Punctate cataracts are small opacities, similar to an imperfection in a diamond. Most punctate cataracts are usually marked as punctate in whatever part of the lens it has been identified in, and in addition the box for "probably not inherited" is marked. In this case the dog is a Breeder option for breeding. More advanced opacities may be marked, in which case the breeding advise is "No". Sometimes lens opacities can occur due to trauma or inflammation. Usually these would also be marked as probably not inherited. The exact inheritance of cataracts in most breeds has not been determined, so it is better not to breed an affected dog rather than perpetuate the problem.

OPTIC NERVE HYPOPLASIA vs MICROPAPILLA: Optic nerve hypoplasia suggests abnormal development of the optic nerve, so information from the retina is not transmitted. Micropapilla is when the optic disk is smaller than normal, but functions normally. It can sometimes be difficult to differentiate the two just on retinal examination. The main difference is that with micropapilla the vision is normal, so it is a "breeder option", and with hypoplasia of the disk the vision is abnormal, or absent, so it is a "No" for breeding advice.

Fortunately, the incidence of ophthalmic problems considered to be vision threatening are not commonly identified on CERF/OFA examinations. Unfortunately, only a small population of Norfolk Terriers are brought to veterinary ophthalmologists for these exams! From 2000-2009 773 Norfolks were examined. From 2010-2013 the number dropped to 329, and in 2014 only 56 were examined! The importance of the CERF/OFA clearance can't be stressed enough in maintaining healthy vision in the Norfolk Terrier! •

MITRAL V
NORF

DEAR FELLOW NORFOLK ENTHUSIASTS,

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nearly 100 Norfolks for a st
if a gene mutation could be
that would link to dogs affected w
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affected based on the ultrasou
samples were collected for DNA
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Unfortunately no individual gene
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sion that the disease has multiple g
are inherited to express the disease.

DR. OYAMA'S REPORT ....

*The study's primary objective wa
tify a putative autosomal domin
with a high likelihood to be associ
myxomatous mitral valve disease
in Norfolk Terriers. The Norfol
Club of Northern California initi
project in partnership with the A
As such, the current project was c
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