

IMPROVING THE HEALTH OF THE NORFOLK TERRIER

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*Photo by Ann Gordon,
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Purpose and overview:

Cute, loyal, feisty, fearless, alert, fun-loving, sturdy, and adventuresome are all terms used to describe the Norfolk Terrier. Unfortunately, the next one could be "AKC Rare Breed." Mounting evidence strongly suggests that a significant and steady rise in a variety of health issues has begun to cast a shadow on the Norfolk that may well lead to a decline in a breed that already has a limited breeding pool. Heart, eye, hip, and patella problems demand that breeders begin taking long overdue steps to understand these conditions, to improve the database documenting relevant traits in our dogs, and to adopt breeding practices that decrease the incidence of these characteristics in Norfolk. The good news is that the resources to accomplish this already exist.

We wrote this article because, like all of you, we have always wanted to breed the best and healthiest Norfolk Terriers we can, and we didn't have enough information any longer to do that. We've spent hours reading, interviewing others, and considering the dilemma, and we decided we were probably not the only people having this issue.

The objectives of this article are to:

1. Make Norfolk breeders aware of the Norfolk health issues;
2. Educate Norfolk Breeders on the use of the Canine Health Information Center (formerly known as OFA) Data Base and important tools it gives breeders to manage and improve Norfolk health;
3. Eliminate the negative stigma of revealing abnormal health reports while encouraging sharing of health results in an open and supportive atmosphere;
4. Encourage the use of *continuous* health testing of hearts and eyes, not one-time CHIC (Canine Health Information Certification) qualification testing;
5. Encourage the sharing of good genes in our Norfolk pool;
6. Make recommendations that support improving health in the Norfolk Terrier.

The Problems and the Processes:

From the OFA Website Norfolk Terrier Statistics Evaluation through December 2017, our Norfolk Terrier breed had the dubious distinction of ranking #1 in heart problems, #15 in eye problems, #18 in hip problems, and #30 in patella problems. If for no other reason, the Norfolk breed's number one ranking in heart disease should be enough to encourage all breeders of Norfolk to stand up and pay attention to Norfolk hearts.

At first ANTA (American Norfolk Terrier Association) and then the Norfolk and Norwich Terrier Club (NNTC), followed by the Norfolk Terrier Club (NTC), decided to study heart disease in Norfolk Terriers. Studies were funded and completed. The result and a report of the Heart Study is on the NTC website under Health. As a direct result of a high degree of *myxomatous mitral valve disease* (MMVD) with a high degree of silent MMVD in Norfolk, the NTC established the requirement that members submit their Norfolk for the following tests to receive a CHIC Number.

1. A heart exam by color echo doppler conducted by a board-certified veterinary cardiologist
2. An OFA patella exam by a veterinarian
3. CERF (Canine Eye Registration Foundation) exam performed by a board-certified veterinary ophthalmologist

Each member of the NTC is required to sign a Code of Ethics which includes a requirement to health test your breeding Norfolk. The Code is found on the NTC Website under The Club, drop down NTC Code of Ethics. The Code of Ethics also requires hip testing.

As it relates to the current OFA Cardiac Statistics, only dogs whose owners voluntarily submitted OFA reports were covered in the data. If those owners initialed their OFA forms to release abnormal results, those abnormal results show up under the dog's AKC Number. If the owner did not initial the form to release abnormal results but submitted them, the data is in the cardiac data base. Abnormal data not submitted by owners to the OFA data base are not in the data base prior of April 1, 2016. According to the collected data of the 564 Norfolk evaluations done through December 2017, 5.3% of our Norfolk were abnormal, 89.9% were normal and 4.8% were equivocal. Breeders only released abnormal information on nine dogs of a potential 30 dogs (564 X 5.3%) and another potential 27 that were found to be equivocal.

If you have done health exams recently, you will notice that there exists a greatly improved form called Advance Cardiac Exam and the new data base will be called the Advanced Cardiac Database (ACA). Released April 1, 2016, the Advanced Cardiac Exam became the new standard for cardiac exams. A Release letter and explanation of the new protocol can be found on the OFA website at https://www.ofa.org/pdf/ACA_Announcement.pdf

This year, the new Advanced Cardiac Database(ACA) form cannot be downloaded from the OFA website. It is modeled after CERF tests and will be disseminated by cardiologists. The examining cardiologist will submit one copy of the form to the OFA. The results contained on the cardiologist-submitted copy will remain confidential. The cardiologist-submitted copy will only be used to record all results on cardiac disease prevalence and progression data by breed in the purebred dog, one of the major purposes of the enhancements. For official CHIC and OFA certification, each owner should submit a copy of the completed and signed form to the OFA, along with the required fee, and an OFA number for normal dogs will be issued and included in their CHIC program results and be included on the dog's OFA Pedigree Data Base information. Abnormal reports submitted by an owner to OFA and authorized with the owner's initials will be posted as Abnormal to the dog's Health Data Base under the dog's name and registration number free of charge, with no rating for mild, moderate, or severe. The owner's enhanced report grades the valve leakage as "Mild," "Moderate," and "Severe" and indicates which valve is affected. Successive testing will reveal the progression or regression of the MMVD. It has been our experience that some Norfolk showing trivial or mild leakage early in life did not exhibit disease progression in later testing.

There were 19 ACA evaluations submitted to OFA up to December 2017. In Norfolk, the abnormal was **10.5%**, normal 84.2%, and equivocal 5.3%. A year and a half of data is not enough to forecast a trend in new Advance Cardiac Test methodology, but it already indicates a higher incidence of MMVD with data being submitted confidentially by examining cardiologists. The NTC has repeatedly stressed successive testing to reveal the onset of the disease, the progression of the disease, or a lack of progression of the disease.

The Norfolk Terrier Club needs to give clear direction on heart health assessment, such as testing every other year in a bitch's life starting before first breeding (18 months) and throughout her life with the breeder. Testing a bitch after her breeding years is also desirable but not always possible. Testing older bitches will give us a data base of those Norfolk with stronger hearts, as well as data on age of onset for those that are ACA Abnormal. For a male Norfolk, we believe that the NTC should consider a standard

of every other year throughout the dog's life starting before his first use at stud. Though stud dogs only have a potential breeding life of eight to ten years, with the use of frozen semen, that breeding lifetime can be substantially extended. A young, heart healthy male dog with a sire and grandsire with Normal ACA exams past age of 5 or 6 years that is accessible to the general population of Norfolk, would be a tremendous asset to the breed, helping to improve the heart health of Norfolk with a Mild Abnormal ACA. A stud dog with strong heart lines on both the dog and bitch ancestors would be outstanding. Our recommendation is based on the "Breeding Guidelines and Cardiac Health Criteria" discussed in "Breeding Restrictions Decrease the Prevalence of Myxomatous Mitral Valve Disease in Cavalier King Charles Spaniels over an 8- to 10- Year Period" published in the Journal of Veterinary Internal Medicine (JVIM) 2016;30:63-68. The breeding guidelines allowed breeding of low levels of MMVD within defined criteria to heart healthy dogs, and the results reflected a 73% decrease in risk of MMVD after ten years of age.

Testing a Norfolk one time at an early age to obtain CHIC certification is not productive to properly diagnosing heart issues or eye issues. It is not health testing; it is CHIC qualification testing. A quick sort of the OFA heart database for Norfolk Terriers has revealed that a high number of dogs tested at a young age for CHIC qualification had no further heart testing submitted. You cannot call yourself a responsible breeder or claim you are doing health testing if there is only one test at a young age. If you have additional tests and just haven't submitted them, you are not benefitting the breed. Data is needed to determine the age of onset of MMVD. A male dog that is heart clear at age five or six, that has mild MMVD in one or more valves at age nine or ten, is not considered a high risk to the gene pool. To identify the lines with strong hearts so that we can tap into those genes, we need to submit all testing data to develop longevity records, understanding that no stigma should exist to owning a Norfolk of any age with MMVD.

The #18 ranking in hip problems should be setting off alarms among Norfolk breeders as well. The OFA site provides a trend report showing no Norfolk with excellent hips. The trend for number of Norfolk having hip x-ray tests has decreased, but the trend for those dogs tested dysplastic has increased 26%. This means that, of the dogs tested and reported, there is a 26% increase in the number of Norfolk with dysplastic hips. Before 1990, 35% of Norfolk were found dysplastic; from 1991 to 2000, 22.35%; from 2001 to 2010, 38.5%, and for the period 2011 to 2015, a whopping 44.1%

In comparison, while Norfolk hips are getting worse, the sister breed, Norwich has more dogs being tested. There are many Norwich with excellent hips, and their trend is down 36%. The data indicates that, of those Norwich tested and for which test data were submitted, there is a 36% improvement in hip results since 1990. The Norwich breed requires hip exams as a part of CHIC certification. Based on the negative trend among Norfolk, Norfolk breeders should give strong consideration to making this a requirement for Norfolk CHIC certification.

We currently seem to have old ways of thinking about testing hips, but this negative trend report requires that we take this seriously or pay the consequences of crippling dysplasia down the line. I have heard the rationale: "My dog was graded mildly dysplastic; he will never be lame from this" or "small breed dogs are graded the same as large breed dogs, but hips aren't that important." Both views may be partly true. But why not breed a mildly dysplastic bitch to a dog that has fair or good hips? The probability of improving the hips is well known and proven in studies too numerous to mention. In the Norfolk Terrier Club Yearbook from 2014-2015, the article "Spay -Neuter Considerations in Light of Recent Evidence: One Veterinarian's Opinion" by Chris Zink, DVM, PhD, is there were a number of orthopedic considerations directly related to the age of spaying and neutering dogs. As a direct result of

the information disclosed in this article, the authors of this article have completely changed our puppy contracts related to spaying and neutering of puppies, changing that recommendation from six months to two years of age. Both of us now have a long discussion with each potential puppy buyer on hip dysplasia, cancer, and autoimmune diseases and provide the buyer with documentation, rationale and articles on why we have that requirement in our contracts. Solid healthy hips should be of extreme importance to performance dogs. We need more information to assess whether this negative hip dysplasia trend in Norfolk is going to continue to deteriorate Norfolk health; that means testing and reporting results to the OFA data base. We should strongly consider making a hip certification a part of CHIC, not just a mention in the Code of Ethics.

Are trends important? Absolutely. A recent article in the January 2018 [AKC Gazette](#) called "Breeding by the Numbers" Jerold S Bell, DVM, says of small breed populations: "Small-population breeds have added issues because each mating has a much greater influence on the entire gene pool. If a breed has a particular hereditary disorder at a higher frequency, mates should be selected that can minimize or lower the risk of producing these disorders. A quality higher-risk dog (closely related to an affected dog) can be bred to a lower risk dog and replaced with a lower-risk offspring. As this process is repeated, the carrier risk and deleterious gene frequency will diminish in the population. As most disorders are complexly inherited and have no tests for carriers, carrier risk must be based on knowledge of phenotypic pedigree depth (parents and grandparents) and breadth (littermates of parents).

Some breeders in small population breeds are afraid to breed and possibly cause more disease. However, if no breeding is going on, the breed will certainly become extinct. Mates must be selected to reduce the risk of producing genetic disorders. Breeders need to do their best to select for health and quality and then see what they produce."

Conclusion: How can we, as breeders, select for health and quality? The OFA Health Data Base allows us to access information submitted by the owner on each dog. It is a tremendous tool, and if you haven't visited the site recently, you should. For each dog in the data base, you have access to all information submitted on that dog. This includes AKC Number, sex, DOB, DNA profile, and all test results submitted (unfortunately, not the owner's name). You can view any tests done on relatives by clicking on the relative's registered names. CHIC certification is clearly delineated by the symbol behind each dog's name. We found this OFA Data Base very valuable while researching potential breeding partners with the desired health traits and we have attached a step by step guide to assist you in learning to use the OFA Data Base and Norfolk Terrier Pedigree Base (on the Norfolk Terrier Club Website). We hope as you refine this process, you will share with us what you learn. (Attachment: Building a Norfolk Terrier Health Pedigree.)

As Norfolk breeders, we **have** done a good job of reducing Ichthyosis from our lines by using gene testing and selective breeding. Judging from the poor rankings of our breed on the OFA Data Base, we need to pay greater attention to hearts, hips, eyes and patella.

The eye issues were addressed in the Article "Inherited Eye Problems in the Norfolk Terrier" by Nancy M Bromberg, VMD, MS, DACVO, published in The Norfolk Terrier Club Year Book 2014-2015. We now know that we cannot continue to do one CERF health exam at 18 or 24 months and know we have healthy eyes. Dr Bromberg stressed continued testing. A CERF test is only valid for one year.

MMVD is more and more prevalent, and since it is a "Polysomnal Genetic Issue" (that is, involving many genes, how they turn on and off, environmental issues, and even diet), we just have not had enough

information to slow or stop the progression of this problem. Only by providing transparency regarding heart disease and using selective breeding can we recover the robustness of our own breed.

All of us are moved and inspired by a typey, well-moving, and happy Norfolk Terrier. We all aspire to have our dogs conform more and more to the standard, place well at Specialties, and, best of all, win a Specialty Best of Breed, but the number of health issues challenge us to go beyond having mere “beauty pageants.” Norfolk Breeders across the United States need to start researching the health histories of their gorgeous specimens and openly reporting the test results so that we can breed to eradicate MMVD, hip dysplasia, eye issues, and patella issues, as well as soft toplines, light eyes, high liver bile acid numbers, bad bites, and missing teeth. Now that we are aware of these health issues, we feel it is time to stop testing for CHIC qualification and start doing Health Certification testing to improve our Norfolk Breed. Our puppy buyers would heartily approve of health testing and are already paying for it with today’s high cost of a Norfolk companion puppy. The number one cause of death that breeders regularly hear from repeat buyers wanting to add a Norfolk for companion or show is, “My Norfolk died of heart problems.”

In the conclusions of the JVIM article previously quoted, “Conclusion and Clinical Importance: A mandatory breeding scheme based on auscultation and echocardiography findings significantly decreases the prevalence of MMVD over the 8- to 10- year period, finding conclusively that their breeding scheme works, therefore is recommended for Cavalier King Charles Spaniels (CKCS).” That study was done by the Danish Kennel Club. We aren’t veterinarians, but it gives our breed hope that if we develop a breeding scheme using ACA testing and heart clear Norfolk, even with mates with mild MMVD, we can decrease the incidence of MMVD in our Norfolk Breed. There are fewer Norfolk (bordering now on an AKC rare breed) than CKCS, which means that now is the time to start paying attention to Norfolk health issues.

Another option is to import older (six to eight years of age), heart-clear, hip-tested, and eye-tested Norfolk stud dogs to introduce to the breeding pool. That is completely contrary to the current trend of introducing Norfolk imports at a young age based solely on conformation, with no health testing from countries that don’t test. The biggest problems we see are finding breeders overseas who test or will test and getting them to sell/lease their quality dogs. With the collection of frozen semen, the foreign breeder would still have access to their sold stud dog’s genes. Still, a new import would have the same problem as a young import, no health history, and the dog would need to have to complete all testing here in the United States.

Norfolk Terriers continue to be a rare breed. “Health-conscious selection through breed-appropriate genetic screening of prospective breeding individuals is the most important aspect of improving and maintaining the genetic health of any breed, regardless of its population size,” according to Dr. Jerold S Bell, DVM, in the article previously quoted. Our community of breeders must, therefore, include the entire US, even though many of us are isolated due to such issues as geography, illness, family issues, careers, etc. Mentoring between breeders regarding contracts, testing protocols, and matching pedigrees and health pedigrees, is currently all done by the alliance of a few breeders if it is done at all. The Norfolk Terrier Club is the keeper of the standard and one of its purposes is to protect and promote the welfare of the breed. We suggest increasing the CHIC qualifications to include hip X-rays and that our code of ethics set a standard on continued testing and enforcement of ethics violations.

What we need is a structure that allows for the free dissemination of data so that we can all benefit and so that the health of the Norfolk breed stabilizes. The OFA Data Base gives us that structure. The OFA Data Base, in conjunction with the Norfolk Terrier Pedigree Data Base (thank you Dr. Andrew Kramer), will only get better with time when Norfolk breeders realize the importance of submitting all reports for

release (both normal and abnormal), of being open and fearless when talking about weakness in our lines, of eliminating the stigma attached to an abnormal report, of bringing compassion rather than judgment, and of putting as much emphasis on health as on the “beauty contest.” Only then can we improve our Norfolk. It will only get better when people with great healthy dogs share their Norfolk genes based on what is best for the breed and not based on Best of Breed. It might mean owners sharing healthy dogs’ genes in spite of knowing they will be competing against their own genes in the ring in two years, or sharing their dogs’ genes with everyone with a qualified bitch, not just with friends. We need every Norfolk Terrier Club member to participate.

We welcome constructive feedback and suggestions on implementing health testing, as well as ideas on how to recognize those Norfolk Breeders that contribute to the health of our breed. Our goal should always be the betterment of the Norfolk Terrier breed. Please let us know your ideas for encouraging more breeders to participate while we still have the chance for our breed to recover. You can contact Julie Gleeson at gleesonj@aol.com or Tina Dennis at regencynorfolks@aol.com. If you require confidentially and are just seeking help with a health issue, we will do our utmost to preserve that confidentially and to help.

Improving the health of the Norfolk breed promises a win-win-win outcome; it will be good for our dogs, good for us, and good for future buyers. Success, however, depends on our diligence in reporting and recording all relevant data and conscientiously using those data to mitigate, even eliminate, the conditions that negatively affect Norfolk. If we work together to improve and use the resources already available to us, “AKC Rare Breed” will never describe our Norfolk.

References:

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2. Chris Zink, DVM, Spay-Neuter Consideration in Light of Recent Evidence: One Veterinarian’s Opinion, *Norfolk Terrier Club Yearbook 2014-2015*.
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