GERMAN SHEPHERD DOG CLUB OF AMERICA

HEALTH AWARD OF MERIT ~~ OFA TERMS & TEST EXPLANATIONS

(These terms and explanations are excerpted directly from the OFA and GSDCA public websites, August 18, 2018.
Please refer to those websites for additional references and current details)

The OFA created the Canine Health Information Center (CHIC) by partnering with participating parent clubs to research and maintain information on the health issues prevalent in specific breeds. OFA has established a recommended protocol for breed-specific health screenings. Dogs tested in accordance with that protocol are recognized with a CHIC number and certification. OFA recognizes that the more information stored and accessible in these databases, the better it will be for every breed. And so they encourage all breeders to attain CHIC certification if their breed participates in the CHIC program. A dog achieves CHIC certification if it has been screened for every disease recommended by the parent club for that breed and those results are publicly available in the database.

The GSDCA requires hip and elbow *screening* and submission of Temperament Test (TT) *results* for a CHIC number.

GSDCA Standard – Temperament: After the introduction, the first quality noted in the breed standard is Temperament; it is of utmost importance to the health of the breed. *"The breed has a distinct personality marked by direct and fearless, but not hostile, expression, self-confidence and a certain aloofness that does not lend itself to immediate and indiscriminate friendships. The dog must be approachable, quietly standing its ground and showing confidence and willingness to meet overtures without itself making them. It is poised, but when the occasion demands, eager and alert; both fit and willing to serve in its capacity as companion, watchdog, blind leader, herding dog, or guardian, whichever the circumstances may demand. The dog must not be timid, shrinking behind its master or handler; it should not be nervous, looking about or upward with anxious expression or showing nervous reactions, such as tucking of tail, to strange sounds or sights. Lack of confidence under any surroundings is not typical of good character. Any of the above deficiencies in character which indicate shyness must be penalized as very* serious faults *and any dog exhibiting pronounced indications of these must be excused from the ring. It must be possible for the judge to observe the teeth and to determine that both testicles are descended. Any dog that attempts to bite the judge must be* disqualified. *The ideal dog is a working animal with an incorruptible character combined with body and gait suitable for the arduous work that constitutes its primary purpose."*

Dogs must be at least one year old for ***Temperament Test (TT)*** *certification*.
The GSDCA TT evaluates a dog's reaction to and recovery from the following stimuli:
Behavior toward Strangers: objective to measure the dog's reaction to strangers in a non-threatening situation.
Reaction to Aural Stimuli (Noise): objective to measure alertness to aural stimuli and the degree of investigative behavior toward the stimuli.
Reaction To Visual Stimuli: objective to measure the dog's reaction to sudden visual stimuli, degree of investigative behavior and startle recovery.
Footing Test: objective to measure the dog's reaction to unusual footing.
Aggressive Stranger: objective to measure the dog's capacity to recognize and react in a positive, guarding manner to a potentially threatening situation and, in the event of a threat, to react in an aggressive, confident manner.

Hip/Elbow Dysplasia Database: The dysplasia control database of the OFA is a voluntary program established to evaluate images and to identify films showing no evidence of dysplasia or other orthopedic problems. All images submitted that are of acceptable diagnostic quality will be reviewed by qualified veterinary radiologists and a consensus report will be returned to the owner of record and referring veterinarian. *Only animals that are 24 months of age or older to the day at the time of radiography, with no radiographic evidence of dysplasia, will be assigned a breed OFA number*. Normal hip results are defined as consensus evaluations of Excellent, Good, or Fair, and normal elbow results are defined as consensus evaluations of Normal. Abnormal hip and/or elbow results (including Borderline results) will not be released to the public unless authorized. Results for animals under 24 months will only be released and published if all the criteria described on the application have been met. The OFA does offer a consultation service for those under 24 months of age.

Hip Dysplasia typically develops because of an abnormally developed hip joint, but can also be caused by cartilage damage from a traumatic fracture. With cartilage damage or a hip joint that isn't formed properly, over time the existing cartilage will lose its thickness and elasticity. This breakdown of the cartilage will eventually result in pain with any joint movement.

Elbow dysplasia is a general term used to identify an inherited polygenic disease in the elbow. Three specific etiologies make up this disease and they can occur independently or in conjunction with one another. These etiologies include:

- Pathology involving the medial coronoid of the ulna (FCP)
- Osteochondritis of the medial humeral condyle in the elbow joint (OCD)
- Ununited anconeal process (UAP)

Studies have shown the inherited polygenic traits causing these etiologies are independent of one another. Clinical signs involve lameness which may remain subtle for long periods of time. No one can predict at what age lameness will occur in a dog. Subtle changes in gait may be characterized by excessive inward deviation of the paw which raises the outside of the paw so that it receives less weight and distributes more mechanical weight on the outside (lateral) aspect of the elbow joint away from the lesions located on the inside of the joint. Range of motion in the elbow is also decreased.

To date, there are no long-term studies for preliminary elbow examinations like there are for hips; however, preliminary screening for elbows along with hips can also provide valuable information to the breeder.

Grade I Elbow Dysplasia: Minimal bone change along anconeal process of ulna (less than 2mm).
Grade II Elbow Dysplasia: Additional bone proliferation along anconeal process (2-5 mm) and subchondral bone changes (trochlear notch sclerosis).
Grade III Elbow Dysplasia: Well developed degenerative joint disease with bone proliferation along anconeal process being greater than 5 mm.

Cardiac Database: Purpose: To gather data regarding heart diseases in dogs, and to identify dogs which are phenotypically normal prior to use in a breeding program. For the purposes of the registry, a phenotypically normal dog is defined as:

- One without a cardiac murmur.
- One with an innocent heart murmur that is found to be otherwise normal by virtue of an echocardiographic examination which includes Doppler studies. The OFA maintains two separate and distinct cardiac databases: The **Congenital Cardiac Database** and the **Advanced Cardiac Database**.

Exams on animals under 12 months of age are considered preliminary evaluations and are not eligible for OFA numbers. The arterial and venous pulses, mucous membranes, and precordium should be evaluated. Heart rate should be obtained. The clinical examination should be performed by an individual with advanced training in cardiac diagnosis. Board certification by the American College of Veterinary Internal Medicine, Specialty of Cardiology is considered by the American Veterinary Medical Association as the benchmark of clinical proficiency for veterinarians in clinical cardiology, and examination by a Diplomate of this specialty board is recommended. However, any licensed veterinarian may be able to perform this examination by auscultation.

Congenital Cardiac Database: Congenital heart disease in dogs is a malformation of the heart or great vessels. The lesions characterizing congenital heart defects are present at birth and may develop more fully during perinatal and growth periods. Many congenital heart defects are thought to be genetically transmitted from parents to offspring; however, the exact modes of inheritance have not been precisely determined for all cardiovascular malformations. The most common congenital cardiovascular defects can be grouped into several anatomic categories. These anatomic diagnoses include:

- Malformation of the atrioventricular valves
- Malformation of the ventricular outflow leading to obstruction of blood flow
- Defects of the cardiac septa (shunts)
- Abnormal develop of the great vessels or other vascular structures
- Complex, multiple, or other congenital disorders of the heart, pericardium, or blood vessels

Advanced Cardiac Database: The Advanced Cardiac Database results in a two-tiered clearance for normal dogs: congenital cardiac disease and adult-onset cardiac disease. Adult-onset or developmental cardiac diseases develop later in life and include for example; hypertrophic, arrhythmogenic and dilatative cardiomyopathies. Many congenital and adult-onset or developmental cardiac diseases may have a genetic component, however the exact modes of inheritance have not been precisely determined for all cardiovascular malformations.

The congenital clearances are considered permanent. The adult-onset clearances are valid for one year from the date of the exam. In order for an adult-onset clearance to remain current, exams must be repeated periodically. The exam must include auscultation at a minimum. The veterinarian and owner are encouraged to submit all evaluations, whether normal or abnormal, to help assure accuracy of the database and to assist in the analysis of patterns of inheritance in important canine congenital and adult-onset heart disease. Abnormal information will not be released into the public domain unless the owner gives permission for this release by initialing the appropriate line on the application form.

Thyroid Database: Some abnormal signs of thyroid issues include: Dermatologic, Reproductive, Lethargy, and Obesity. Based on the results of the thyroid profile which includes free T4 dialysis, canine thyroid stimulating hormone and thyroglobulin autoantibodies the animal is considered as: ►Normal ►Positive autoimmune thyroiditis ► Positive compensative autoimmune thyroiditis ► Idiopathically reduced thyroid function ► Equivocal—the OFA recommends that this animal be retested in 3 to 6 months—status uncertain for breeding. The registry data can be used by breeders in determining which dogs are best for their breeding program. Knowing the status of the dog and the status of the dogs' lineage, breeders and genetic counselors can decide which mates are most appropriate for reducing the incidence of autoimmune thyroiditis in the offspring.

With Hypothyroidism, the thyroid gland is not making enough of a hormone called thyroxine that controls metabolism (the process of turning food into fuel). Hypothyroidism causes a wide variety of symptoms, but is often suspected in dogs that have trouble with weight gain or obesity and suffer from hair loss and skin problems. The good news is this disease isn't life-threatening, it's easy to diagnose with a blood test, and it's fairly easy and inexpensive to treat. Treatment is typically a thyroid supplement taken daily. Autoimmune thyroiditis is the most common cause of primary hypothyroidism in dogs. The disease has variable onset, but tends to clinically manifest itself at 2 to 5 years of age. Dogs may be clinically normal for years, only to become hypothyroid at a later date. The marker for autoimmune thyroiditis, thyroglobulin autoantibody formation, usually occurs prior to the occurrence of clinical signs. Therefore, periodic retesting is recommended.

The majority of dogs that develop autoantibodies have them by 3 to 4 years of age. Development of autoantibodies at any time in the dog's life is an indication that the dog most likely has the genetic form of the disease. Using today's technology only a small fraction of false positive tests occur. As a result of the variable onset of the presence of autoantibodies, periodic testing will be necessary. Dogs that are negative at 1 year of age may become positive at 6 years of age. Dogs should be tested every year or two in order to be certain they have not developed the condition. Since the majority of affected dogs will have autoantibodies by 4 years of age, annual testing for the first 4 years is recommended. After that, testing every other year should suffice. Unfortunately, a negative at any one time will not guarantee that the dog will not develop thyroiditis.

Degenerative Myelopathy (DM) Database: DM is a debilitating disease that causes gradual paralysis in many dog breeds. It is caused by a degeneration of the spinal cord that onsets typically between 8 and 14 years of age. It presents first with the loss of coordination of the hind legs. It will typically worsen over six months to a year, resulting in paralysis of the hind legs. If signs progress for a longer period of time, loss of urinary and fecal continence may occur and eventually, weakness will develop in the front limbs. An important feature of Degenerative Myelopathy is that it is not a painful disease.

Explanation of DM Test Results

Normal - this dog is homozygous N/N for the mutation that is the most common cause of Degenerative Myelopathy, with two normal copies of the gene. Among the hundreds of dogs studied so far at the University of Missouri, only two dogs with test results of N/N (Normal) have been confirmed to have DM. The N/N (Normal) dog can only transmit the normal counterpart of the common mutation to its offspring, and it is unlikely that this dog or its offspring will ever develop DM.

Carrier (A/N): This dog is heterozygous A/N, with one mutated copy of the gene and one normal copy of the gene, and is classified as a carrier. Carriers are far less likely to develop DM, but we have confirmed DM in a few carrier dogs. They may be used carefully in breeding programs to keep their good qualities while reducing the risk of DM in future generations.

At-Risk (A/A): This dog is homozygous A/A, with two mutated copies of the gene, and is at risk of developing Degenerative Myelopathy (DM). Although almost all dogs in the research study with confirmed DM have had A/A DNA test results, recent evidence suggests that there are other causes of DM in some breeds. In addition, not all dogs testing as A/A have shown clinical signs of DM. DM is typically a late-onset disease, and dogs testing as A/A that are clinically normal may still begin to show signs of the disease as they age. Some dogs testing A/A did not begin to show clinical signs of DM until they were 15 years of age. Research is ongoing to estimate what percentage of dogs testing as A/A will develop DM within their lifespan. At this point, the mutation can only be interpreted as being at risk of developing DM within the animal's life. For dogs showing clinical signs with a presumptive diagnosis of DM, affected (A/A) test results can be used as an additional tool to aid in the diagnosis of DM. Dogs testing At-Risk (A/A) can only pass the mutated gene on to their offspring.

Equivocal: An Equivocal test result indicates that the test results were inconclusive. This is typically the result of poor sample collection. When the test yields an equivocal result, a second punch will be taken from the FTA card and the test rerun. If the second test is still equivocal, the owner will be contacted and asked to submit a new sample.

Breed Testing - Although any dog can be tested for Degenerative Myelopathy, it is possible that the genetic background that predominates in some breeds prevents the development of symptoms even in dogs testing affected (at risk). At this time we are reluctant to recommend testing for members of breeds where the University of Missouri has not yet proven susceptibility to DM through microscopic examination of spinal cords from deceased dogs that exhibited symptoms of the disease. The required evidence of association between the genetic mutation and actual spinal cord evaluations has been proven in GSDs and 16 other breeds.

Guidelines for Breeding Dogs Who Are Carriers or At-Risk for Degenerative Myelopathy (DM):

Owners with dogs testing as Carriers (A/N), or At-Risk (A/A) are strongly encouraged to share these results with their attending veterinarian and seek genetic counseling when making breeding decisions.

The "A" (mutated) allele appears to be very common in some breeds. In these breeds, an overly aggressive breeding program to eliminate dogs testing A/A or A/N might be devastating to the breed as a whole because it would eliminate a large fraction of the high-quality dogs that would otherwise contribute desirable qualities to the breed. Nonetheless, DM should be taken seriously. It is a fatal disease with devastating consequences for the dog and can be a trying experience for the owners that care for them.

A realistic approach when considering which dogs to select for breeding would be to treat the test results as one would treat any other undesirable trait or fault. Dogs testing At-Risk (A/A) should be considered to have a more serious fault than those testing as Carriers (A/N). Incorporating this information into their selection criteria, breeders can then proceed as conscientious breeders have always done: make their breeding selections based on all the dog's strengths and all the dog's faults. Using this approach and factoring the DM test results into the breeding decisions should reduce the prevalence of Degenerative Myelopathy in the subsequent generations while continuing to maintain and improve upon positive, sought-after traits.

OFA recommends that breeders take into consideration the DM test results as they plan their breeding programs; however, they should not over-emphasize the test results. Instead, the test result should be one factor among many in a balanced breeding program.

Dentition Database *Adult teeth must be fully erupted for evaluation.*

Veterinarian Dentition Examination Results include: Full dentition with all adult (permanent) teeth fully erupted; Persistent (retained) deciduous teeth noted with a "P" on the dental chart; Missing teeth noted with an "M" on the dental chart and Other (as specified).

The German Shepherd standard has a strongly worded section on the dog's strong muzzle and mouth: *"… The lips are firmly fitted. Jaws are strongly developed. Teeth --42 in total --20 upper and 22 lower-- are strongly developed and meet in a scissors bite in which part of the inner surface of the upper incisors meet and engage part of the outer surface of the lower incisors. An overshot jaw or a level bite is undesirable. An undershot jaw is a disqualifying fault. Complete dentition is to be preferred. Any missing tooth other than first premolars is a serious fault."*

Breeders are encouraged to select for for strong, healthy dental conditions in their effort to uphold the breed standards and pass along these healthy qualities.

Companion Animal Eye Registry (CAER) OVERVIEW

The purpose of the OFA Companion Animal Eye Registry (CAER) is to provide breeders with information regarding canine eye diseases so that they may make informed breeding decisions in an effort to produce healthier dogs. CAER certifications will be performed by board certified (ACVO) veterinary ophthalmologists. Regardless of whether owners submit their CAER exam forms to the OFA for "certification," all CAER exam data is collected for aggregate statistical purposes to provide information on trends in eye disease and breed susceptibility. Clinicians and students of ophthalmology as well as interested breed clubs, individual breeders and owners of specific breeds will find this useful.

There are currently ten disorders for which there is an unequivocal recommendation against breeding in all breeds. These diagnoses are ineligible for OFA Eye Registry certifications. These are conditions which frequently result in blindness and for which there is definite evidence of heritability in one or more breeds. ***Note:** The prudent approach to these disorders is to assume they are hereditary except in cases specifically known to be associated with trauma, other causes of ocular inflammation, specific metabolic diseases or nutritional deficiencies.*