Recommended OFA Tests for Alaskan Malamutes

A Comparison of Costs, Incidence, and Results

The Orthopedic Foundation for Animals (OFA) is a non-profit organization that provides health testing and certification for various canine diseases and conditions. OFA tests can help breeders and owners identify and prevent the spread of genetic disorders in dogs. The recommended tests that are relevant for Alaskan Malamutes are listed below, along with the cost to submit to OFA, the median cost for doing the test, the incidence of abnormal results in Alaskan Malamutes, and the total number of results submitted for each test as of August 4, 2024.

The Health Committee (HC) is in favor of testing for important and prevalent breed-relevant conditions that can be screened prior to using a dog in a breeding program. However, not all tests that can be done have a prevalence in the breed that warrants requiring testing at this time. The HC recommends screening for hip dysplasia and eye disease due to the prevalence of these conditions in the breed per OFA statistics. We note the incidence of abnormal thyroid results, but also that the total number of dogs tested is low and suspect that this proportion is likely due to owners testing symptomatic dogs rather than reflecting an overall breed prevalence. It may be worth investing in a future study to examine the prevalence in a random sample of Malamutes in the breeding population, particularly prior to making this a required test.

It could be argued that including elbows in the list of requirements makes some sense since the additional costs and sedation required over and above screening for hip dysplasia is rather small. Inclusion of this category in the “recommended” screening category was done at the suggestion of Dr. Jerold Bell as he felt a freighting working breed should at least be tracking these statistics. At this time we recommend keeping elbow screening in the recommended category and continuing to monitor this prevalence.

The HC also recommends that breeders use DNA profiling to evaluate the status for the AM-specific conditions: CD, PCD & PN even though the prevalence is very low. The screening is easy and enables carriers to be bred to clear dogs thus not diminishing the gene pool, without requiring sedation or anesthesia. The costs of these tests are also low. At this time, while encouraging all breeders to use a comprehensive DNA profile prior to breeding, we recommend that these should all be listed in the recommended category. In the age of continued and constant development of testing for genetic conditions, it is not practical to continually add requirements for testing of individual genes at low prevalence.

Regarding cardiac screening, the basic examination is rudimentary and recommended to be performed on an annual basis. For the advanced cardiac database, the examination is more involved with ECG and careful evaluation of valve function. A routine health check by a veterinarian should be able to distinguish a heart murmur and all dogs should undergo regular veterinary health examinations. Should a heart murmur or other evidence of a cardiac issue arise, a referral to cardiac specialist should be encouraged with subsequent submission of results to OFA. In this way, the club would be able to follow the prevalence of heart disease in the breed in a more focused way. As a result, the HC does not believe that mandating, or even recommending, systematic cardiac evaluations and submissions at this time serves any useful purpose regarding the health of the breed. It is also notable that in dogs tested and born since 2015, no dogs submitted to the database have tested positive for cardiac issues.

The only tests that require OFA evaluation to get a “score” are the hip and elbow x-rays. Every other test can be performed and assessed by the specialist or lab and provide results to the breeder/owner without needing to submit to OFA. Many folks do not spend the extra $$ to submit their results and rely on personal records & proof of testing. Adding mandatory test submission to OFA is unlikely to increase the number of people submitting their results and may even decrease result submission to by making the requirements too expensive. In addition, we are cognizant that veterinary care costs have skyrocketed in recent years, and many of our AMCA members are either no longer breeding or have greatly reduced the frequency as a result of financial and age considerations. While we need to set guidelines for the breeding of healthy dogs, we also need to provide a supportive and encouraging environment for breeders to make decisions that are appropriate for their lines and the history behind their specific dogs. AMCA should focus efforts with these critical issues in mind.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Test | Cost to Submit to OFA | Median Cost for Doing the Test | Total Number of Results Submitted to OFA | Incidence of Normal Results | Incidence of Equivocal or Carrier Results | Incidence of Abnormal Results | Current status with OFA for CHIC certification | HC Recommendation: |
| Hip Dysplasia | $45^ | $300^ | 15,913 | 87.2% | 1.0% | 11.8% | Required | Required |
| Eyes | $15 | $45 | 2,627 | 91.2% | 0% | 8.8% | Required (annually) | Required |
| PN DNA test | $15\* | $65# | 408 | 98.0% | 2.0% | 0% | Required | Recommended |
| Elbows | $45^ | $200^ | 1887 | 95.9% | 0% | 4.1% | Recommended | Recommended |
| Thyroid | $15 | $250 | 342 | 86.0% | 9.1% | 5.0% | Recommended | Recommended |
| PCD DNA test | $15\* | $65# | 137 | 96.4% | 3.6% | 0% | - | Recommended |
| CD DNA test | $15\* | $65# | 110 | 100% | 0% | 0% | - | Recommended |
| Basic Cardiac | $15 | $60 | 93 | 100% | 0% | 0% | - | - |
| Advanced Cardiac | $15 | $300 | 93 | 96.8% | 2.2% (2) | 1.1% (1) | - | - |
| Congenital Cardiac | Not stated | Depends on test | 364 | 99.5% | 0% | 0.8% | - | - |

\* $10 when submitting 3 or more tests. $10 per test reimbursed by AMCA

^ Total is $50 for both hips and elbows submitted together; will often get discount for doing both hips and elbows together at vets.

# Bundled testing available that includes multiple DNA tests as well as traits (Embark, Wisdom, AKC DNA Health). Various costs for each bundle.

## OFA statistics by birth year

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| %: Trend by BIRTH year (not test year) | | | | | | | | |
|  | <=1990 | 1991-1995 | 1996-2000 | 2001-2005 | 2006-2010 | 2011-2015 | 2016-2020 | >=2021 |
| HIPS – Exc/Good/Fair | 85.6% | 87.0% | 89.2% | 90.1% | 89.7% | 88.7% | 88.9% | 87.2% |
| *HIPS - Dysplastic* | *13.5%* | *11.2%* | *9.3%* | *9.5%* | *9.5%* | *10.8%* | *10.1%* | *8.5%* |
| EYES - Normal | - | - | 100% | 84.2% | 92.0% | 91.1% | 91.4% | 90.0% |
| ELBOW - Normal | - | - | 94.9% | 97.5% | 97.5% | 95.2% | 95.0% | 96.4% |
| *ELBOW - Dysplastic* | *-* | *-* | *5.1%* | *2.5%* | *2.5%* | *4.8%* | *5.0%* | *3.6%* |
| THYROID - normal | - | 85.7% | 71.9% | 78.4% | 92.1% | 95.5% | 89.5% | 50.0% |
| POLYNEUROPATHY – Non-carrier\* | - | - | 100% | 100% | 96.6% | 96.8% | 98.9% | 98.1% |
| PRIMARY CILIARY DYSKINESIA – Non-carrier\* | - | - | 100% | - | 100% | 91.3% | 98.7% | 93.3% |
| CONE DEGENERATION – Non-carrier | - | - | 100% | - | 100% | 100% | 100% | 100% |
| DEGENERATIVE MYELOPATHY – Non-carrier | - | - | 66.7% | 85.7% | 85.2% | 81.5% | 100% | 100% |
| ADVANCED CARDIAC - Normal | - | - | - | - | 100% | 93.6% | 100% | 100% |
| BASIC CARDIAC - Normal | - | - | - | - | - | 100% | 100% | 100% |

\* NO affected animals, remaining were all carriers

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| --- | --- | --- | --- | --- | --- |
| OFA Test | For OFA submission requirement | Against OFA submission requirement | Cost | Prevalence | Utility |
| Cardiac Disease | Can detect congenital heart defects that may affect the health and lifespan of the animal. | Requires a veterinary cardiologist to perform the exam, which may be costly or unavailable in some areas.  Heredity of diseases detected in Alaskan Malamutes is not known.  Does not require OFA submission to get results of cardiac function tests. | High | Very low (0% in screened dogs born after 2015) | Routine veterinary exam can detect animals requiring further assessment. Not considered worth the cost/benefit to make even recommended. |
| Elbow dysplasia | Can identify elbow abnormalities that may cause lameness, pain, or arthritis in the animal. Can screen out affected dogs from breeding pool or enable informed decisions based on knowledge of lines and prevalence. | Requires radiographs to be taken by a veterinarian and evaluated by OFA. | High as stand-alone. Much lower if add-on to HD screening | ~5% in dogs submitted; submission rates low. | More prevalent than perhaps expected and screening could decrease prevalence if affected dogs are identified. Keep as recommended (i.e., optional/recommended) but not mandatory. |
| Thyroid | Prevalence of thyroid dysfunction in AM is ~10% per OFA database. AM is known to have thyroid problems that manifest over time and this evaluation can help determine how prevalent the condition really is. It could also help determine subclinical cases prior to breeding to help reduce the prevalence over time. | Precise heredity of AIT is not understood. Thyroid disease is easy to treat with cheap medication. | High for OFA- accepted lab results. | Moderate, low number of dogs tested overall likely reflects the results of symptomatic dogs being tested rather than breed prevalence. | Testing dogs at 2+ years of age can detect early cases and help to make informed decisions regarding breeding practices. |
| Polyneuropathy DNA | Easy to take DNA to test for status. AMCA has reimbursement for submission to OFA | Prevalence is very low and low uptake of reimbursement implies this is not a test that folks wish to submit to OFA | Bundled DNA screening ~$120 | Very low | Easy to DNA test and keep prevalence low. Enables use of carriers in breeding pool. |
| Cone degeneration DNA | Easy to take DNA to test for status. AMCA has reimbursement for submission to OFA | Prevalence is very low and low uptake of reimbursement implies this is not a test that folks wish to submit to OFA | Bundled DNA screening ~$120 | Very low | Easy to DNA test and keep prevalence low. Enables use of carriers in breeding pool. |
| Primary ciliary dyskinesia DNA | Easy to take DNA to test for status. AMCA has reimbursement for submission to OFA | Prevalence is very low and low uptake of reimbursement implies this is not a test that folks wish to submit to OFA | Bundled DNA screening ~$120 | Very low | Easy to DNA test and keep prevalence low. Enables use of carriers in breeding pool. |

Companies offering genetic testing (note: More and more companies are developing tests, and costs change regularly!)  
  
Embark: <https://embarkvet.com/> (contact [breedclubs@embarkvet.com](mailto:breedclubs@embarkvet.com) and mention AMCA to receive a discount on tests)  
Orivet: <https://www.orivet.com/>

Laboklin (UK): <https://www.laboklin.co.uk/laboklin/>

Wisdom: <https://www.wisdompanel.com/en-us>

AKC: <https://www.akc.org/breeder-programs/dna/dna-resource-center/akc-dna-health/>