



Preamble to Health Recommendations

The first two statements of the Cairn Terrier Club of Canada Code of Ethics read as follows:

The Cairn Terrier Club of Canada sets forth below certain standards of conduct to be followed by its members:

1. Strive to conform to the CKC Breed Standard to improve progeny and to reduce conformation faults. *Give equal consideration to type, temperament, soundness, and health.*
2. Should make a conscientious effort to learn about and keep up to date on genetic health problems and to register serious anomalies with the appropriate registries. Breeders should discuss and disclose known problems to a potential breeding partner (bitch/stud owner). Controlled test breeding may be appropriate, as more information about genetic defects become known (DNA markers, modes of inheritance, etc.). Members are encouraged to *regularly test for health and genetic problems.*

The fact that these statements are given positions of prominence in the Code of Ethics reflects the importance of working proactively to maintain and improve the health of our breed. This is not simply important to the health of individual dogs – the survival of our breed hinges on a robust approach to promoting health and genetic diversity. In 2022, for the first time, breeds have been banned for health reasons at a national level as Norway introduced breed bans on Bulldogs and Cavalier King Charles Spaniels.¹ Other countries are currently looking to follow suit with proposed bans on Pugs, French Bulldogs and Boston Terriers in Australia.² Animal rights groups are only too ready to work hard to keep the momentum going and to expand bans and limitations to other breeds. While we may believe our breed is relatively healthy, we must acknowledge health issues in our breed and work diligently to improve breed health and be seen to do so publicly.

Objectives:

1. To improve the health of Cairn Terriers
2. To assist breeders in making robust, evidence-based testing and breeding decisions

Foundational principles:

1. These recommendations are intended to promote the overall health of the breed and, as much as possible, to avoid producing affected puppies.
2. Recommendations made by the committee are meant to inform and advise but are not 'rules'. There may be situations where the risk of breeding is outweighed by potential benefits. Carefully considered 'test breedings' may be important to our understanding of various conditions. However, as genetic testing improves, the role for 'test breedings' diminishes. Where genetics are well defined and testing is available, test breedings are obsolete.
3. The focus of these recommendations is **educational** rather than mandatory. A significant role of the committee is to educate and inform, not just regarding the recommendations, but also of the process of developing recommendations and the data in support of the recommendations. We hope that breeders will see the relevance of the recommendations and voluntarily apply them in breeding.

4. Key considerations in making recommendations were severity (morbidity and lethality) of disease, gene frequency, cost and availability of testing, cost to owners of care for affected dogs, risk to long term genetic diversity of the breed, and quality of evidence.
5. Testing and breeding recommendations are not a 'once and done' activity. Regular, scheduled reviews to incorporate new information and revise recommendations is necessary, as well as unscheduled updates when new research provides relevant information. The electronic 'evergreen' version of the document posted on the website should be consulted to ensure the most current iteration of the document is used.
6. Supplemental documents (as available) should be considered alongside the recommendations. These documents will be posted in the members section of the website when they are available.
 - a. The **Detailed Health Recommendations** document should be consulted to provide more details on specific decisions.
 - b. **Briefing Documents** for each condition are available for those who wish an in depth understanding of how the committee reached its conclusions.
 - c. **Strategies for strengthening genetic diversity**
 - d. **Recommendations for the timing of Spay and Neuter** / Alternatives to conventional desexing procedures

The importance of maintaining Genetic Diversity

Genetic diversity is a key issue in maintaining the long-term health of any breed. One risk in focusing on the prevention of individual disorders in a breed is that the focus becomes so strong on eliminating disease risk that we cause significant reductions in genetic diversity. Based on Embark data, the genetic COI for Cairn Terriers ranges from 8% to 52% with the diversity curve being centered around 18%, which is a higher than desirable degree of inbreeding. Greater degrees of inbreeding are associated with lower fertility, smaller litters, and shorter life spans.

While seeking to reduce the risk of health disorders in our breed we must also maintain a strong focus on genetic diversity. If testing and breeding recommendations are applied without an eye to maintaining genetic diversity, we can cause harm to the overall health of the breed. These recommendations should be considered in the context of our document on Genetic Diversity.

Process:

These recommendations are based on:

1. Review of the scientific literature focusing on:
 - a. understanding the incidence / prevalence of the disease in Cairn Terriers
 - b. understanding the current state of knowledge about the etiology and genetics of individual conditions
 - c. identifying the accuracy of testing options
2. Review of our briefing documents by content experts where possible
3. Discussion and consensus at the Health Committee
4. Approval by the Board of Directors
5. Ongoing / periodic review of recommendations to maintain and evergreen document

The committee welcomes feedback from club members. Feedback should be directed to the Chair of the Health Committee

Conditions are divided into those effectively identified through **genetic testing** and those that are diagnosed through **phenotypic (clinical) testing** (physical examination, x-rays, ultrasound, blood tests etc.) This distinction does not mean the genetic factors are not in play for the latter. In fact, it is likely that most chronic health conditions have some degree of genetic influence in play. However, in many of

these conditions, the genetic basis is highly complex involving many different genes, and often associated with nongenetic factors. Genetic testing for these conditions is far in the future – if ever.

It is also important to note that several conditions listed in our health recommendations and identified through genetic testing do not appear to be relevant in Cairn Terriers. These conditions are included for the information of members because some genetic testing companies have recommended testing for be done for Cairn Terriers despite the lack of clinical utility. We recommend against targeted testing for conditions not shown to be relevant in our breed.

Disorders have been prioritized into High / Moderate and Low priority. This should not be taken to imply that we are not concerned about low priority conditions. In terms of addressing health issues in our breed, it is essential to **set priorities**. High priority items are those that are severe in terms of morbidity and mortality, definitively shown to be of increased risk in Cairn Terriers, +/- believed to be amenable through testing and breeding recommendations. Low priority conditions are, for the most part, chronic manageable, genetically complex disorders that lack predictive testing options or testing to identify carriers.

Embark Partnership

The Cairn Terrier Club of Canada has a breed club partnership with Embark. We endorse the use of panel genetic testing given the lower cost and additional information provided, however it is important to keep in mind that except where mutations are known to be relevant in Cairn Terriers, the information must be interpreted with caution. Panel tests will include information that is not accurate in Cairn Terriers or is not relevant for Cairn Terriers. Our genetic testing section will help readers identify which conditions are relevant. In addition to tests for genetic conditions known to be relevant in Cairns, users should pay attention the genetic Co-efficient of inbreeding which is included in the Embark report under the “Inbreeding and Diversity” section. We encourage preferential use of Embark for panel genetic testing as our club partnership provides the club with research opportunities and information and individual users with a discount. However, members are free to use any reputable genetic testing company. In selecting a testing company, it is important to ensure that all important genetic conditions for the breed are included in the panel.

To access the Embark / CTCC portal, go to <http://embarkvet.com/CTCC> and use the password cairncanada123. This may be used by non-club members – but ONLY for purebred Cairn Terriers. Be sure to select the option to share the information with the club so that it can be included in our database. If you have previously tested dogs through Embark or purchase your test elsewhere you can still choose to share the information in the club data base by selecting the option to share. We encourage sharing your dog’s genetic information as that will allow us to develop a more robust data base from which we can learn more about genetic disease in Cairn Terriers and target key conditions for intervention. It will also open up the availability of the breed matchmaker tool which allows breeders to do virtual test matings.

What about contrary information?

A perusal of websites that address breed health, will quickly show that there are some discrepancies with our recommendations and conclusions. Much of the breed health information on lay websites and veterinary clinic websites is derived from ‘information brokers’ that produce material for such sites to use ‘as is’. These are rarely, if ever, referenced, dated, or attributed to an author who can be contacted with questions about the source of information. It is unclear how often these resources are updated as new information becomes available. Often inclusion of Cairn terriers as a breed at higher risk for a particular condition is based on a single report – even while other reports provide contrary information. Sometimes Cairns are listed as high risk because the condition occurs in related breeds, without evidence of it being a significant risk for Cairn Terriers. While the committee looked at these sites to

ascertain what conditions are raised as concerns in Cairn Terriers, we did not use them in any data gathering or decision-making process. Our information on disease prevalence is derived from research papers supplemented by personal communications with authors, where appropriate. We have reviewed as many primary sources as possible to derive the best understanding of the significance of conditions in Cairn Terriers. **Generic breed health information available widely on the internet should be NOT be relied on as accurate without supporting evidence.**

References

1. <https://nypost.com/2022/02/02/norway-bans-breeding-cavalier-king-charles-spaniels-bulldogs/>
2. <https://www.dailymail.co.uk/news/article-10475455/Call-BAN-French-Bulldogs-Pugs-Australia.html>

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