

# **STATEMENTS AND PROPOSALS REGARDING RESPIRATORY HEALTH IN BRACHYCEPHALIC DOGS**

*Prepared by a working group appointed by the Nordic Kennel  
Union*

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# **SUMMARY**

## **STATEMENTS**

**The prevalence of health problems related to BOAS is a serious welfare problem.**

**BOAS is a complex problem which calls for collaboration between several stakeholders.**

**The manifestation of BOAS varies and calls for various strategies.**

**Dogs clinically affected by BOAS or operated for BOAS should never be bred from.**

**To decrease the prevalence of BOAS, selection for less exaggerated anatomical features is needed.**

## **PROPOSED ACTIONS**

**Increase education of show judges, breeders and puppy buyers.**

**Develop and implement methods to examine breeding animals regarding respiratory function and temperature regulation.**

**Promote central registration of dogs diagnosed and operated for BOAS.**

**Work internationally towards breed standards with non-exaggerated text that consider the importance of health.**

**Actions suggested for authorities: investigate possibilities to set up breeding programs aiming for better health also to unregistered dogs.**

**Make an inventory of dogs 3-6 years of age, free from clinical signs of BOAS and with anatomical features compatible with a decreased risk for BOAS.**

**Construct a Nordic BOAS health survey.**

**Produce a guideline to how clubs are to organize and execute lectures/seminars.**

**Evaluate the progress.**

## **PRIORITIES**

**The situation in the pilot breeds (the English Bulldog, the French Bulldog and the Pug) call for immediate actions.**

## INTRODUCTION AND AIMS

The Nordic Kennel Clubs (Sweden, Norway, Finland and Denmark) in co-operation, i.e. members of the Nordic Kennel Union (NKU) have appointed a working group (WG; Enclosure 12) to propose statements and actions to be taken to improve health related to brachycephalic obstructive airway syndrome (BOAS, Enclosure 1a) in brachycephalic dogs.

Each NKU member has already taken national actions regarding BOAS. Information on these actions and the initial documents regarding the work of the WG are included in the Enclosure 1b.

**The aim of the WG is to review the current situation, suggest steps to rectify the effects of BOAS and propose ways forward.**

1. Define the breeds that are in the need of an immediate action.
2. Define the necessary procedures.
3. Collect existing data from member countries.

***The main focus is BOAS, including hyperthermia.***

## PILOT BREEDS

**The WG will start its work with the following three pilot breeds: the English Bulldog, the French Bulldog and the Pug.**

These are the three breeds with the most extensive scientific data on BOAS as well as other problems following brachycephalic construction. Selecting these three breeds does not exclude, nor neglect similar problems in other breeds. Other breed societies are suggested to gather relevant information regards their brachycephalic breeds.

The populations of the pilot breeds in the Nordic countries are comparably small in numbers, but they are well defined and represented by well-organized national breed clubs (one per country). This makes them well suited for monitoring and for evaluation of various interventions.

## DOG BREEDING IN THE NORDIC COUNTRIES

**General feature of the Nordic dog populations is that registered pedigree dogs constitute a very large share of the total dog population.**

Total number of dog registrations in 2015 were 46 856 (Finland), 50 234 (Sweden), 25 537 (Norway), and 20 431 (Denmark).

The popularity of the pilot breeds has been increasing for the last ten years in all the Nordic countries (Enclosures 3a and 3b).

It is a common experience from the countries with mandatory chip marking of all dogs, that when a breed becomes a “fashion breed”, registration numbers increase far more rapidly outside the organized kennel club systems than within. Thus, the kennel clubs’ share of the population decreases (Enclosure 3a). A fair share of the brachycephalic dogs outside the kennel clubs come from countries in Eastern Europe where some of

them are produced by reckless breeders and puppy mills. This constitutes a serious challenge in improving the general health of the dogs.

Together with other stakeholders, both FCI and the national kennel clubs worldwide will - by setting "standards" - indirectly also have an influence of the public perception of any dog claimed to be of a certain breed. This makes the education of the public very important.

Dog breeding in the Nordic countries has high focus on health issues and breeder education. Traditionally, Nordic animal breeding in general is based on the health and wellbeing of the stock. Thus, Nordic dog breeders commonly use health tests for their breeding stock, even when it is not mandatory.

## **STATEMENTS OF THE WG**

The following statements and proposed actions are not static: they are intended to be complimented, revised and refined along with extended knowledge and activities. They are prepared with a Nordic perspective but may serve as incitements for an extension to be endorsed globally and by various stakeholders.

### **The prevalence of health problems related to BOAS is a serious welfare problem.**

*By the impact on health of individual dogs and the increasing number of dogs in affected breeds, BOAS is a serious welfare problem globally.*

Population based epidemiological data (breed surveys as well as insurance claim data) have shown that a significant proportion of individuals in some of the brachycephalic breeds are affected by BOAS. Owner perceived breathing problems and cases of surgical interventions show this.

### **BOAS is a complex problem which calls for collaboration between several stakeholders.**

*The shortened forehead results from a discrete mutation - however, the different issues around it are complex. As such, the problems associated with BOAS need several different approaches by several stakeholders.*

All involved - breeders, judges, veterinarians and welfare authorities - must collaborate to successfully achieve an effect on the prevalence and severity of BOAS related problems.

### **The manifestation of BOAS varies and calls for various strategies.**

*There are no single and simple solutions to the problems associated with BOAS. The manifestation of BOAS varies and calls for breed specific strategies.*

Current scientific evidence shows that the shorter the muzzle, the narrower the nostrils and the thicker the neck – the greater the BOAS problem (Packer et al., 2015). There is very compelling evidence that dogs with a craniofacial ratio (CFR = length of muzzle : length of skull) of less than 0.5 are at risk of developing BOAS, and that a CFR of less than 0.2 implies an extremely high risk.

There are, however, breed differences, both with regards to BOAS and with regards to other health problems in the breeds. Although the BOAS problems are strictly connected to the CFR (Packer et al., 2015), each breed needs to have an individual breeding strategy. We may have basic instructions for fitness tests etc., but specific features of the test might be breed-specific.

**Dogs clinically affected by BOAS, as well as dogs operated for BOAS should never be bred from.**

*It is never compatible with Nordic animal welfare laws nor with breeding rules by the Nordic Kennel Clubs to breed from animals clinically affected by or operated for BOAS.*

**To decrease the prevalence of BOAS also selection for less exaggerated anatomical features is needed.**

*A breeding stock with less exaggerated anatomical features should be promoted.*

Anatomical features include width of nostrils; length, width and depth of muzzle; space of throat and firmness of palate; length of neck; volume of chest; and length of sternum and ribs.

## **PROPOSED ACTIONS**

### **Education of show judges: arranging judges' conferences.**

The NKU kennel clubs educate this profession on a high level. However good the breed standard or training is, there is always room for improvement. In the case of exaggerated breed features which cause BOAS, the time for improvement is now. The WG proposes that NKU Kennel Clubs will provide means for additional judges' education with focus on the BOAS problem (Enclosures 9a and 9b). This education would be carried out in a form of conferences, open to NKU judges passed for the breeds in question, as well as ditto learners and students.

Educational material to be produced: *Educational illustrated breed compendiums*, videos and power points to be the foundation of the theoretical lectures (Enclosure 4d). Education should include also evaluation of BOAS-free and BOAS-affected dogs, in co-operation and supervision of breed clubs, veterinarians, and 1-2 breed judges with long experience of breeding any of the pilot breeds.

### **Education of breeders**

The WG proposes that NKU kennel clubs, in co-operation with breed clubs, will provide breeder education with focus on the BOAS problem. This education would be carried out in a form of lectures/seminars.

The educational material proposed for judges' conferences are equally suited for lectures for breeders as also the videos and power points. Education of breeders would be focused on how to assess dogs' suitability for breeding regarding the parameters affecting breathability.

## **Education of puppy buyers**

The educational material proposed for judges' conferences could also be used on the websites of breed clubs, to inform puppy buyers on what to look out for in a healthy, typical puppy:

- What does the puppy buyer need to know when purchasing a dog of these breeds. To buy a registered puppy increases chances of getting a healthy puppy but is not a guarantee of health per se.
- How to recognize the BOAS problem.

## **Actions lead by veterinarians**

- **Develop and implement methods to examine breeding animals regarding respiratory function and temperature regulation.**

Based on ongoing international research and studies in each of the Nordic countries, develop a common examination scheme to be used, i.e., to evaluate potential breeding stock regarding BOAS and thermoregulation.

This examination should initially be voluntary and descriptive, but with the potential for each kennel club to make it discriminating and mandatory for breeding.

An example from Finland in the Enclosures 10a and 10b: a walking test, based on research in English Bulldogs (Lilja-Maula et al. 2017) and Pugs.

- **Promote central registration of dogs diagnosed and operated for BOAS.**

Based on current epidemiological data regarding the dogs operated because of BOAS, more specific information is needed. This means numbers and reasons (diagnoses) for operations and deaths, performed by attending veterinarian on the request/consent by the owner. Information should be gathered:

- at individual level, in case owner requests/approves
- at statistical level.

The WG proposes that a central Nordic registration system for BOAS diagnoses will be adopted.

## **Work internationally towards breed standards with non-exaggerated text that consider the importance of health.**

The WG proposes that the Standards Commissions within the NKU countries together study the standards of brachycephalic breeds and, in case of suggestions to revise, consult the country of origin of said breed for further actions (Enclosures 11a and 11b). Standards for several brachycephalic breeds have been revised recently, but some of them might still leave room for misinterpretation and thus need re-phrasing, hence the suggestion to an international co-operation on re-viewing standards.

## **Information and suggestions for authorities**

Welfare authorities, media and the public should be informed that the NKU Kennel Clubs make strong efforts to keep the breeders within their regulated system to improve the welfare of the dogs. However, kennel clubs are able to implement rules and regulations only on the kennel club registered dogs. If they lay down harsh restrictions on the organized breeders, the "production" may move to less conscientious breeders to fulfill the demands of the puppy buyers. The authorities should investigate possibilities to set up breeding programs aiming for better health also to unregistered dogs.

## **Further proposals**

- **Make an inventory** on the amount of phenotypic variation in the Scandinavian populations of the pilot breeds. The Nordic Kennel Clubs should encourage their breed clubs for the English Bulldog, the French Bulldog and the Pug:
  - To make an inventory of dogs 3-6 years of age that are free from clinical signs of BOAS and with anatomical features compatible with a decreased risk for BOAS
  - To evaluate these dogs also for general health, and, if sound, also from other perspectives and promote them for breeding (Procedure to be described). This inventory and evaluation could be done by arranging inspections/inventories for family dogs out of the entire populations.
  - Obtaining blood or cheek samples from these individuals to measure genetic variation should also be considered.
  - To monitor the outcome regarding BOAS in the progeny and compared to the entire population.
- **Construct** a Nordic BOAS health survey, which could be targeted to all brachycephalic breeds and translated to respective NKU languages.
- **Produce** a guideline to how clubs are to organize and execute lectures/seminars.

## **Evaluate the progress**

To be able to monitor the effects of various actions, it is essential to prospectively gather population-based data (breed surveys, insurance data, etc.). This data should allow comparing birth cohorts, to reveal the effects and the possible genetic improvement in the breeds.

It is proposed that a group will be formed to continue and follow up the proposed actions suggested by the WG. The group should be able to gather above mentioned data and evaluate the progress. The progress would be reported in the breed specific breeding programs. The proposed group should include also representatives from the breed clubs and the NKU Brachycephalic Media Group, as well as judges.

# **PRIORITIES**

## **The situation in the pilot breeds call for immediate actions.**

Pilot breeds are the English Bulldog, the French Bulldog and the Pug.

## **The following actions should be implemented with priority:**

- Education on several levels regarding BOAS - show judges with conferences, ditto for breeders, veterinarians, welfare authorities, the public, etc.
- Examinations of breeding stock in the pilot breeds regarding clinical signs of BOAS.
- Study the standards of brachycephalic breeds and, in case of suggestions to revise, consult the country of origin of said breed for further actions.

# COMMUNICATION AND TIME PLAN

Once the NKU/AU has approved this document, a short version of it will be distributed by the Media Group to Dogwellnet.com, the NKU website, and all kennel clubs within the FCI, as well as the kennel clubs in the UK, USA, Australia, New Zealand and Canada.

The complete version of the document will be sent to all breed clubs for brachycephalic breeds within the NKU.

**The document will be distributed and discussed also in the IPFD 3<sup>rd</sup> International Dog Health Workshop in Paris, April 2017.**

**Please NOTE: Enclosures and References not available at this time. Further information will be available after the Paris workshop.**

## REFERENCES

A list of references is included as Enclosure 13.

## LIST OF ENCLOSURES

The listing includes all the enclosures mentioned either in this main document or in some of its' enclosures.

Enclosure 1a. Brachycephalic syndrome (BOAS)

Enclosure 1b. Actions taken by the NKU & European countries

Enclosure 2. Animal welfare legislation in the Nordic countries

Enclosures 3a & 3b. Registrations of the pilot breeds

3a. Number of registrations within the NKU for the pilot breeds (text)

3b. Number of registrations worldwide and within the NKU for the pilot breeds (figures)

Enclosures 4a-4e. Health surveys

4a. Swedish health survey for Pugs in 2016

4b1. Swedish health survey for English Bulldogs in 2013

4b2. Swedish health survey for English Bulldogs during 2005-2006

4c. Health survey of the Finnish Kennel Club

4d. Summary of breed club work in Norway

4e. Danish health survey for bulldogs.

Enclosures 5a-5e. Agria breed profiles for the pilot breeds.

Enclosure 6. Presentation by Brenda Bonnett: Agria breed profiles for the pilot breeds

Enclosure 7. Clinical data

Enclosure 8. Basic education of championship show judges

Enclosures 9a & 9b. Proposed judges' education regarding the BOAS affected pilot breeds

Enclosures 10a & 10b. Finnish Kennel Club walking test

Enclosures 11a & 11b. Breed standards

11a. Information on revising breed standards

11b. FCI model standard

Enclosure 12. Presentation of the working group members.

Enclosure 13. Reference list.