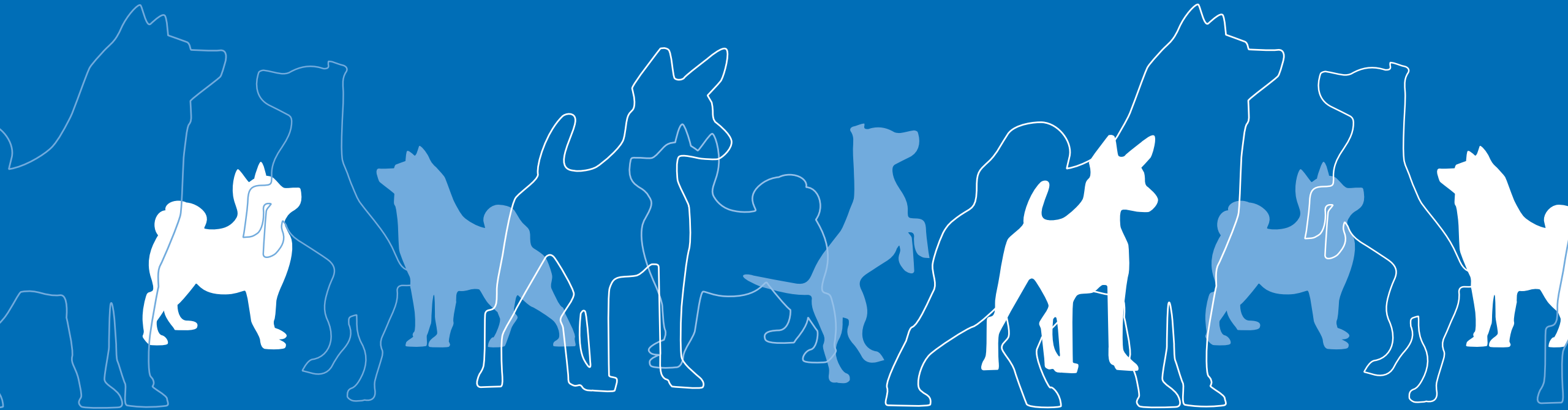


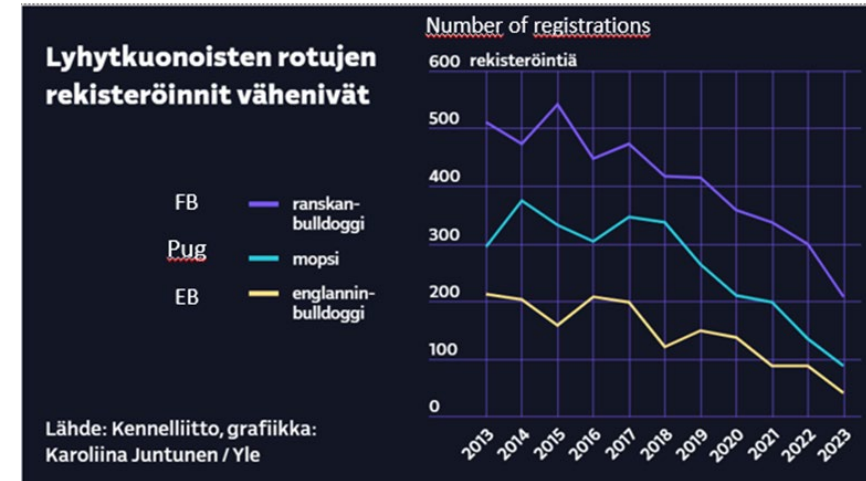
# Actions against extreme conformation in Finland

Liisa Lilja-Maula DVM, PhD, Docent, Finnish Kennel Club and University of Helsinki,  
Finland  
16.4.2026



# Dog population in Finland

- There are approximately 800 000 dogs in Finland of which ~60-70% are pedigree dogs
  - ➔ Unique opportunity for the Finnish Kennel Club (FKC) to guide dog breeding and health
- No stray dogs
- Popularity of dogs with extreme conformation
  - A clear decline in brachycephalic dog registrations (from 3,6% of all registrations in 2017 to 2,1% in 2022). French bulldog, Boston terrier, Pug and English bulldog registrations currently around 50-200 dogs per breed/year.
  - Short-limbed dogs such as Dachshunds (around 1500 registrations/year all dachshunds) and Havanese (around 460 registrations/year) are very popular.



# Legislative actions Finland

- A new Animal Welfare Act (693/2023) took effect 1.1.2024
  - An animal shall not be used for breeding if the breeding combination is likely to cause diseases or other characteristics in the offspring that significantly harm the animal's welfare. An animal that cannot breed naturally due to a hereditary characteristic or illness shall not be used for breeding.



# Legislative actions Finland

- In addition, from 1.1.2028 veterinarians are obligated to make a notification to the official dog register, if they diagnose a hereditary defect or disease that is listed as **restricted for breeding** (Section 12 of the Act on Practicing the Veterinary Profession (29/2000))
  - A working group consisting of multiple stakeholders has been established to help in preparing the decree and list of defects/diseases
  - Diseases and defects caused by extreme conformation are included (such as signs related to brachycephaly and screw tailed dogs)



# Nordic Kennel Union (NKU) guidance to show judges on extreme conformation

- In 2014 NKU launched first Breed-Specific Instructions (BSI) regarding exaggerations in pedigree dogs aimed to show judges to pay attention to extreme conformation and report it.
- Areas of risk include skull, muzzle, nose, eyes, skin wrinkles, toy and giant size, chondrodysplasia (i.e. inadequate ground clearance) etc.
- According to the breeding strategy of the FKC, these guidelines must also be taken into account when choosing breeding dogs.
- Guidelines concern all dog shows in Finland
- Reports are sent to FKC → to breed clubs
- Most reports concern teeth, jaw and eyes

<https://www.kennelliitto.fi/en/forms/breed-specific-instructions-bsi>  
<https://www.kennelliitto.fi/en/forms/report-form-show-judges-observations-areas-risk-bsi-listed-breeds>

## BREED SPECIFIC INSTRUCTIONS (BSI)

regarding exaggerations in pedigree dogs



By the Nordic Kennel Clubs 2023 Applicable from 2024



# Finnish Kennel Club health testing; several tests are linked to **extreme conformation**

- Yearly around 90 000 different health test results are recorded to FKC public breeding database
  - Radiographic screening
    - hip dysplasia (HD)
    - elbow dysplasia (ED)
    - **elbow incongruity**
    - shoulder osteochondrosis
    - spondylosis, **vertebral anomaly**, transitional lumbar vertebrae and **intervertebral disc calcifications**
  - eye examinations
  - patellar luxation
  - heart examinations
  - liver results
  - **syringomyelia**
  - hearing test (BAER)
  - Brachycephalic obstructive airway syndrome test results (**BOAS**)
  - **DNA-tests** (currently 64 different genetic tests)



# Finnish Kennel Club health testing; several tests are linked to extreme conformation

- A new test to assess front leg extrenal rotation (ROT) and carpal valgus (VALG-M) will be implemented in 2026/2027 for chondrodysplastic dogs

## Thoracic Limb Angular Deformity in Chondrodystrophic Dogs: Repeatability of Goniometric Measurement of External Rotation and Carpal Valgus

Hanna S.M. Pulkkinen<sup>1</sup> Anu K. Lappalainen<sup>1</sup> Jouni J.T. Junnila<sup>2,3</sup> Outi M. Laitinen-Vapaavuori<sup>1</sup>  
Heli K. Hyytiäinen<sup>1</sup>

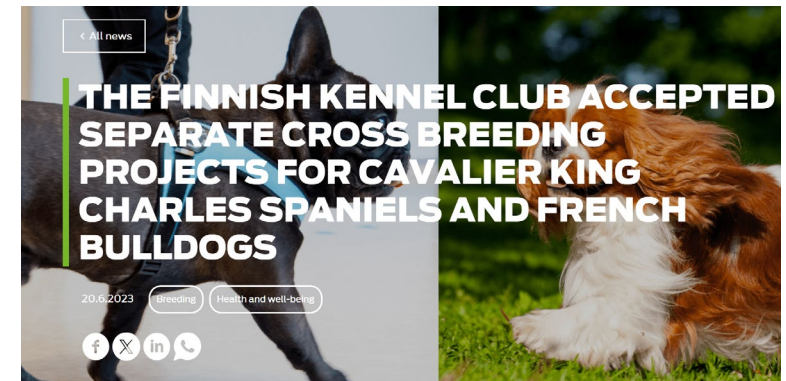
Breed-typical front limb angular deformity is associated with clinical findings in three chondrodysplastic dog breeds

Anu K. Lappalainen<sup>1\*</sup>, Hanna S. M. Pulkkinen<sup>1†</sup>, Sari Mölsä<sup>1</sup>,  
Jouni Junnila<sup>2</sup>, Heli K. Hyytiäinen<sup>1</sup> and Outi Laitinen-Vapaavuori<sup>1</sup>



# Cross breeding to battle extreme conformation; FKC actions

- In 2023 FKC has accepted:
  - A cross-breeding program for Cavalier King Charles Spaniels, main focus on heart disease and syringomyelia
  - A cross-breeding program for French bulldogs, main focus on BOAS and 12-*FGF4* retrogene (early degeneration of intervertebral discs)



<https://www.kennelliitto.fi/en/about-us/news/finnish-kennel-club-accepted-separate-cross-breeding-projects-cavalier-king-charles-spaniels-and-french-bulldogs>



# Cross breeding to battle extreme conformation; FKC actions

- Litters born from French Bulldog and Cavalier cross breeding programs:

Year	Parents	Number of puppies
2023	Cavalier x Beagle	3
2025	Cavalier x Tibetan Terrier	5
2023	French Bulldog x Danish-Swedish Farmdog	2
2023	French Bulldog + Papillon	4
2025	French Bulldog + Mittelspitz	4



# Cross breeding to battle extreme conformation; FKC actions

- Skeletal x-ray screening results from French Bulldog cross-bred litters

Year	Puppies born	ED	HD	VA	SP	LTV	IDD
2023	1. Danish-Swedish Farmdog x French Bulldog	0/0	C/C	VA0	SP0	LTV0	IDD0
2023	2. Danish-Swedish Farmdog x French Bulldog	0/0	C/C	VA0	SP0	LTV0	IDD0
2023	1. Papillon x French Bulldog	0/0	A/A	VA0	SP0	LTV0	IDD1
2023	2. Papillon x French Bulldog	0/0	C/C	VA0	SP0	LTV0	IDD0
2023	3. Papillon x French Bulldog	0/0	B/B	VA0	SP0	LTV0	IDD1
2023	4. Papillon x French Bulldog	0/0	A/A	VA0	SP0	LTV0	IDD0



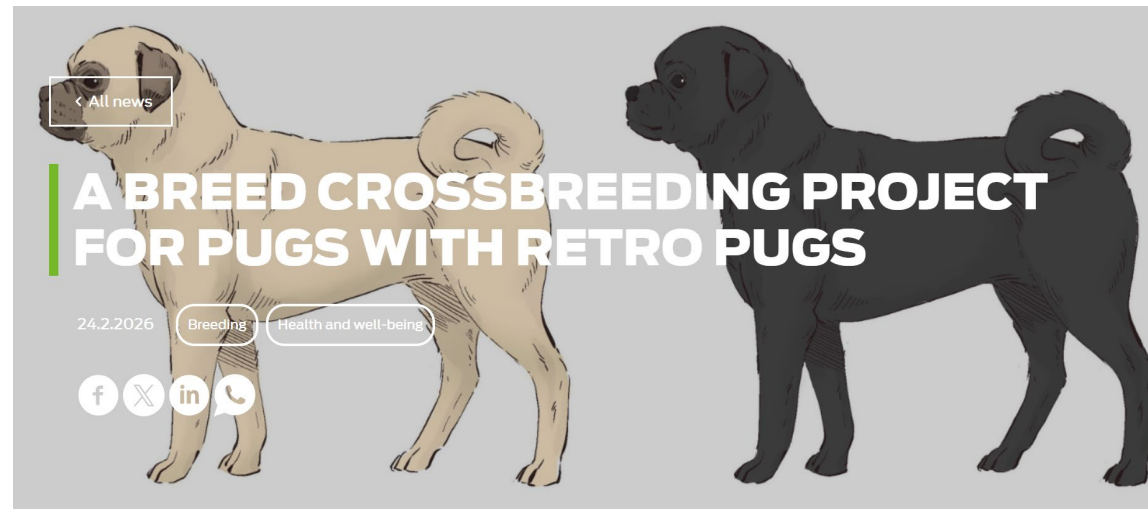
<https://www.kennelliitto.fi/en/about-us/news/finnish-kennel-club-accepted-separate-cross-breeding-projects-cavalier-king-charles-spaniels-and-french-bulldogs>

8.4.2026

10

# Cross breeding to battle extreme conformation; FKC actions

- In 2026 FKC has accepted:
  - A crossbreeding program for Pugs with “Retro Pugs”, main focus on brachycephalic features



<https://www.kennelliitto.fi/en/about-us/news/breed-crossbreeding-project-pugs-retro-pugs>



# FKC BOAS testing

- BOAS testing implemented in 2017 for 11 brachycephalic breeds (French bulldog, Pug, Boston terrier, English bulldog, Griffons, Shih tzu, Japanese chin, King Charles spaniel, Affenpinschers, Pekingese, Continental bulldog)
- Currently 10 trained veterinarians act as supervisors for the test
- Altogether, (until 01/2026), 1612 BOAS tests have been recorded

<https://www.kennelliitto.fi/kasvatus-ja-terveys/koiran-terveys/koiran-terveystutkimukset/boas-testissa-arvioidaan-koiran-rasituksensietoa>  
<https://www.youtube.com/watch?v=9Sv4Apmujto>



# FKC BOAS testing

- BOAS testing consists of:
  - **Exercise part with recovery assessment and body T measurement** (1000m test; pass or not pass, Lilja-Maula et al. 2017, Aromaa et al 2019&2021)
  - Evaluation of respiratory signs before and after exercise i.e., **BOAS grading** (0,1,2,3; modified from respiratory function grading (RFG) scheme presented by Liu et al. 2015)
  - **Nostril stenosis assessment** and cranio-facial ratio (CFR) measurement
    - All results are reported in the test form, and BOAS grade, exercise test result and nostril stenosis are also reported in [public breeding data base](#)

KoiraNet Jalostustietojärjestelmä v2024.4.3 <small>Suomeksi   På svenska</small> <span style="float: right;">Kennelliitto <small>FINSKA KENNELKLUBBEN · THE FINNISH KENNEL CLUB</small></span>				
Health results				
Date	Object	Result	Valid	Additional information
18.5.2025	BOAS grade BOAS-test exercise tolerance nostril stenosis	0 - No symptoms Approved 2 - Moderate stenosis		

<https://jalostus.kennelliitto.fi/frmEtusivu.aspx?Lang=en&R=166.2>



# FKC BOAS test results evaluated

- Majority (77%) of dogs were BOAS- (no or mild signs)
- BOAS grade heritability estimates were moderate to high
  - Genetic improvement can be obtained and the severity of BOAS signs in offspring reduced by using clinical BOAS grading
- Exercise and recovery evaluation with temperature measurement should be included in BOAS testing
- Moderate to severe nostril stenosis was highly prevalent in several brachycephalic breeds
- Only few dogs had CFR >0,3



Lilja-Maula et al.  
*Acta Veterinaria Scandinavica* (2024) 66:35  
<https://doi.org/10.1186/s13028-024-00755-9>

Acta Veterinaria Scandinavica

RESEARCH

Open Access

## Evaluation of brachycephalic obstructive airway syndrome breeding test results in Finland from 2017 to 2022



Liisa Iiris Onerva Lilja-Maula<sup>1,2\*</sup> , Katariina Helena Mäki<sup>3</sup>, Mimma Kristiina Aromaa<sup>1</sup> and Minna Marjaana Rajamäki<sup>1</sup>

# Not only BOAS testing for brachycephalic dogs

- BOAS screened brachycephalic dog is not synonym for healthy brachycephalic dog
  - Eyes, skin, teeth, skeletal etc.
- In FKC, several health tests including skeletal x-ray screening are available for brachycephalic breeds
- DNA results such as CDDY results are also stored in FKC database and can be used to aid breeding in those **chondrodystrophic breeds** where 12-FGF4 retro gene is not fixed
- Late 2026/early 2027, **front leg carpal valgus and external rotation** with goniometry will be available for **chondrodysplastic breeds**, including several brachy breeds

Basic information					
Breed	Registration type	Date of birth	Date of registration	Sex	Colour
101 French Bulldog	litter registration	1.8.2019	17.9.2019	female	brindle, white markings

Health results			
Date	Object	Result	Valid
24.9.2024	chondrodystrophy (cddy)	CDDY/CDDY Two copies of the gene	
1.9.2023	cardiac health certificate auscultation examination auscultation examination - murmur eye examination patellar luxation	No, No symptoms no evidence of inherited eye diseases 0/0	1.9.2025 1.9.2025
19.11.2021	spine calcified intervertebral discs lumbosacral transitional vertebra spondylosis vertebral anomaly	IDD2 (Moderate), K-luku: K3 LTV0 (Normal) SP2 (Grade 2, evident) VA3 (Moderate), number of anomalies: 9	
16.11.2021	elbow joint hip joint	0/0 B/B	
1.8.2021	BOAS grade BOAS-test	1 - Mild signs Approved	



# In conclusion

- Actions against extreme conformation in Finland:
  - Animal Welfare Law (693/2023) and from 1.1.2028 new act that obligates veterinarians to make notification to the official dog register, if they diagnose a hereditary defect or disease that is listed as restricted for breeding
  - NKU Breed-specific instructions for show judges to report extreme conformation
  - Several health tests to guide breeding offered by Finnish Kennel Club including extreme conformation





# Thank you!

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