

Defining “excessive” conformational traits



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- ✧ 20 years in general practice & 15 years in academia
- ✧ Senior lead on RVC VetCompass
- ✧ 200 peer-reviewed papers & 3 books

- ✧ RVC Brachycephalic Research Team
- ✧ UK Brachycephalic Working Group (**BWG**)
- ✧ UK Legal Advisory Group on Extreme Conformation in Dogs (**LAGECDogs**)
- ✧ UK Dog Breeding Reform Group (**DBRG**)
- ✧ International Collaboration on Extreme Conformation in Dogs (**ICECDogs**)
- ✧ Royal Canin 'Choose Health Coalition'

Excessive Conformation: Key messages

- ✧ History matters – how invention of dog and cat breeds promoted excessive conformation
- ✧ What is an extreme conformation vs an excessive conformation
- ✧ How to define a threshold for being an excessive conformation



Evolution of the domestic dog

10 million years ago

Today



Almost 10 million years:
Nature's evolution
towards survival based on health



10-15 thousand
years ago

150 years ago:
Invention of **Breed**



Frans Snyders (1579-1657)



Mølle and Johnny, ~ 1916-

Your Knowledge Hub

Domestic dog

1. Most phenotypically **diverse** mammalian species on earth – Between breeds
2. Yet aimed to be the most phenotypically and genetically **uniform** - Within breeds



RKC: 227 breeds
FCI: 356 dog breeds
VetCompass: 1328 breeds

The 3 Phases to exiting the Extreme Conformation crisis

✧ Risk assessment:

1. Which conformational exaggerations can be **'extreme'**
 2. When do these become **'excessive'**
- Science underpinning assessment
 - Assessment tools

✧ Risk management: ~~How to move from the science to real-world actions~~



'Extreme conformation'



International Collaborative on
Extreme Conformations in Dogs

Extreme conformation describes a physical appearance that has been so significantly altered by humankind away from the ancestral natural 'species' appearance that affected animals commonly suffer from poor health and welfare, with negative impacts on their quality and quantity of life.

International Collaboration for Extreme Conformation in Dogs



Extreme conformation: biological/welfare phenomenon.



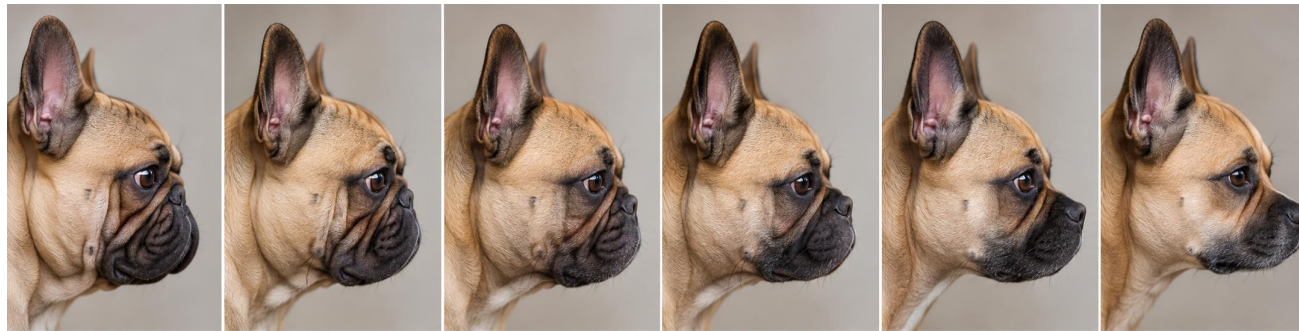
‘Excessive conformation’: Dogs and Cats

Excessive conformation: “traits leading to a high risk of detrimental effects on the welfare of dogs or cats, or their offspring ”

- **A judgement phenomenon:**
 - That the trait has crossed a **welfare-relevant threshold**
 - The judgement should be **based on science and evidence**

Operators shall not use dogs or cats with excessive conformational traits

1. For reproduction
2. In aesthetic shows, exhibitions and competitions



European Union (2026) 'REGULATION (EU) 2026/1818 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 June 2026 on the welfare of dogs and cats and their traceability'.

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Assessing excessive conformation: 'high risk of detrimental effects on welfare'

1. **Probability:** How likely is a detrimental outcome?
2. **Severity:** How serious is the potential harm?
3. **Duration:** Is the effect transient, recurrent or lifelong?
4. **Breadth:** Does the characteristic affect one function or several aspects of health and welfare?

Individual animal level



RESEARCH ARTICLE

Open Access

Health-related welfare prioritisation of canine disorders using electronic health records in primary care practice in the UK

Jennifer F. Summers^{1*}, Dan G. O'Neill¹, David Church¹, Lisa Collins², David Sargan³ and David C. Brodbelt¹

Abstract

Background: Evidence-based comparison of the disorder-specific welfare burdens of major canine conditions could better inform targeting of stakeholder resources, to maximise improvement of health-related welfare in UK dogs. Population-level disease related welfare impact offers a quantitative, welfare-centred framework for objective disorder prioritisation, but practical applications have been limited to date due to sparse reliable evidence on disorder-specific prevalence, severity and duration across the canine disease spectrum. The VetCompass[™] Programme collects de-identified electronic health record data from dogs attending primary-care clinics UK-wide, and is well placed to fill these information gaps.

Results: The eight common, breed-related conditions assessed were anal sac disorder, conjunctivitis, dental disease, dermatitis, overweight/obese, lipoma, osteoarthritis and otitis externa. Annual prevalence estimates (based on confirming 250 cases from total potential cases identified from 455,557 dogs) were highest for dental disorder (9.6%), overweight/obese (8.5%), conjunctivitis (4.5%). Dental disorder (76% of study year), osteoarthritis (76%) and conjunctivitis (76%) had highest duration scores. Osteoarthritis (1.67/3.00) had highest overall severity scores. Dental disease (1.67/3.00) had highest

Dogs: Major anatomical domains of potential excessive conformation

Domain	Examples of extreme conformation
1. Face/skull	Brachycephaly, Broad/massive skull, Cranial doming, Nostril aperture
2. Eyes/eyelids/ears	Bulging eyes, Entropion/ectropion, Ear size relative to head
3. Skin/soft tissue	Facial/body skin folds, Excessive loose skin
4. Jaw/mouth	Severe underbite/overbite, Crowded teeth
5. Body proportions	Long spine-to-height ratio, Deep chest
6. Limbs	Short legs, Angular limb deformity
7. Spine/back	Sloping back, Kyphosis/lordosis, Vertebral anomalies, Dorsal ridge
8. Tail	Congenital taillessness/short tail, Screw tail
9. Coat/hair	Excessive coat, Hairlessness, Merle, Piebaldism
10. Overall size	Giantism, Miniaturisation

Dogs: Excessive conformational trait	Potential welfare consequences	Citations
Flat-faced (brachycephaly)	Difficulty breathing, sleeping and exercising, corneal ulceration, heat-related illness	(Packer et al., 2015b, O'Neill et al., 2017a, Hall et al., 2022)
Overshot (mandibular prognathism) or undershot (mandibular retrognathism) lower jaw	Reduced ability to eat and increased dental disease	(Freiche and German, 2021, Darcy et al., 2018, Niemiec, 2021)
Large and protruding eyes (proptosis)	Increased risk of eye damage and infection	(O'Neill et al., 2017a, Packer et al., 2015a)
Shortened legs (chondrodysplasia).	Affected dogs with excessively short legs and a disproportionately long body frequently suffer spinal problems e.g., intervertebral disc disease (IVDD)	(Packer et al., 2013, Bannasch et al., 2022)
Facial and body skin folds	Skin infections and pain	(Scott et al., 2001, O'Neill et al., 2022)
Bulging or domed skull	Brain diseases such as hydrocephalus and brain herniation (syringomyelia)	(Lewis et al., 2010, Przyborowska et al., 2013)
Eyelids turned-in (entropion) or turned-out (ectropion)	Lifelong, painful eye problems from eyelashes/hair rubbing on cornea or drooping eyelids that prevent corneal cleaning and moistening with each blink leading to infections and corneal ulceration	(O'Neill et al., 2025, Walter et al., 2023)
A sloped back with excessively low rear end and excessively flexed hind legs	Locomotion problems	(Humphries et al., 2020a, Humphries et al., 2020b)
Rigid, inflexible spine	Inability to flex spine and neck to reach their anus/genitals impeding self-cleaning, comfort and mobility	(Bertram et al., 2019, Wyatt et al., 2019)
Extremely small size	Increased fragility of bones and soft tissues, so that routine handling, jumps from furniture, or accidental collisions can result in fractures or other injuries, limiting normal play and exploration. Orthopaedic disorders including medial patellar luxation	(Planner et al., 2021, Brianza et al., 2006, Engdahl et al., 2023)
Extremely large size (gigantism)	Shortened life, osteosarcoma, musculoskeletal problems	(Ko and Shin, 2025, Edmunds et al., 2021, O'Neill et al., 2023a, Anderson et al., 2020)
Hairless / thin coat	Linked to other genetic defects in teeth, nails and sweat glands	(Parker et al., 2017)
Congenital taillessness, short tail or twisted tail	Impaired communication with other dogs. May be predisposed to spinal problems due to vertebral malformations. Lethal homozygous gene with 25% intrauterine deaths in some breeds	(Mansour et al., 2018, Bradshaw and Rooney, 2016, Hytönen et al., 2009, Bertram et al., 2019)
Disproportionately broad head and shoulders and a narrow pelvis	Inability to deliver puppies without surgical intervention	(O'Neill et al., 2017b)
Merle coat colouration (patchy or marbled colours with lighter and darker areas mixed together)	Dogs homozygous for the merle gene can be deaf (~15% bilaterally, ~10% unilaterally) and frequently have ocular abnormalities such as microphthalmia	(Savel and Sombé, 2020, Strain et al., 2009)

Cats: Major anatomical domains of potential excessive conformation

Domain	Examples of extreme conformation
1. Face/skull	Brachycephaly, Nostril aperture
2. Eyes/eyelids	Entropion/ectropion, Dominant blue eye
3. Ears	Large ears relative to head/body, Low-set ears, Folded ears
4. Skin/soft tissue	Nasal skin fold
5. Coat/hair	Excessive coat length/density, Hairlessness
6. Limbs	Dwarfism/short legs, Angular limb deformity, Polydactyly
7. Tail	Congenital taillessness/short tail, Bobtail
8. Overall size	Giantism, Miniaturisation

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Cats: Excessive conformational trait	Potential welfare consequences	Citations
Flat-faced (brachycephaly)	Respiratory difficulties, reduced exercise capacity, skull and brain abnormalities e.g., hydrocephalus, nasolacrimal duct disorders, dental disorders, entropion	(Schmidt et al., 2017, Schlueter et al., 2009, Farnworth et al., 2016, Sieslack et al., 2021, Demir, 2024)
Very long and thick haircoats	Makes grooming and self-care inherently more difficult	(O'Neill et al., 2019, Malik et al., 2009, Mestrinho et al., 2018)
Folded ears (osteochondrodysplasia)	Musculoskeletal abnormalities (e.g., osteoarthritis, exostoses in the feet, short, misshapen limbs and tails), impaired communication	(Malik et al., 2008, Takanosu and Hattori, 2020, Deputte et al., 2021, Takanosu, 2008)
Dwarfism	Musculoskeletal disorders	(Buckley et al., 2020, Lyons et al., 2019, Anderson et al., 2021, Graeme, 2000)
Congenitally tailless or short-tailed	Vertebral deformities, communication	(Deforest and Basrur, 1979, Martin, 1971, Deputte et al., 2021)
Hairless / thin coat	Malassezia skin infection	(Åhman and Bergström, 2009)



Conclusions

- ✧ The new EU regulations on excessive conformation offer a once in a decade opportunity to end the excessive conformation crisis in dogs and cats
- ✧ Several conformations in both dogs and cats may reach a EU legal threshold for being excessive
- ✧ The EU legal definition of 'excessive' traits should account for various elements such as the capacity for innate behavioural expression, functional impact, genetic basis, severity and duration, and association with health and welfare risks.
- ✧ Risk assessment for excessive conformation requires a combination of scientific evidence, measurable indicators and species-specific considerations to define meaningful thresholds that support effective risk management.

Thank you for caring about dogs and cats.... and their futures

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VetCompass™ Vet practices

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