

The Innate Health Assessment Tool



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Dog and Cat: Risk assessment

Risk assessment is the systematic evaluation of how a particular physical conformation may increase the probability, severity, duration and/or breadth of adverse welfare outcomes in an animal.

Key questions for EFSA to consider:

- ✧ What is the purpose of the tool?
- ✧ Which conformational criteria to include?
- ✧ What thresholds to set for excessive conformation?
- ✧ Format of final discrimination?
- ✧ Who will carry out the assessment?
- ✧ Who will oversee the assessment?

WHO (2026) *Risk assessment*, available: <https://www.who.int/emergencies/risk-assessment>

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Risk assessment for excessive conformation

Innate Health

All animals, regardless of type and breed, should be capable of performing all the typical activities necessary for their wellbeing within the anatomical, physiological and behavioural evolutionary norms for the species and the animal's stage of life .

Dan O'Neill, RVC



<https://www.ukbwg.org.uk/wp-content/uploads/2022/05/220512-BWG-Innate-health-in-dog-populations.pdf>

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‘INNATE HEALTH’: high risk of detrimental effects on the welfare when capacity for these natural activities are frustrated

E.g.

- ✧ **Breathe freely** and oxygenate fully without effort at rest and with exercise.
- ✧ **Maintain body temperature** within a normal physiological range for the species.
- ✧ **Move freely** without conformation-related impediment.
- ✧ **Eat and drink effectively** and without constraints or frustration.
- ✧ **Hear, smell, see, blink, self-groom and sleep** effectively.
- ✧ **Ability to reproduce** (breeding animals).
- ✧ **Communicate effectively** with other dogs by using species-specific auditory and physical cues (tail, ears, grimace and other facial cues, stance, etc.)

Innate Health Excessive Conformation Risk Assessment:

e.g. Breathe freely and oxygenate fully without effort at rest and with exercise:

Brachycephaly

1. Probability
2. Severity
3. Duration
4. Breadth

of adverse welfare outcomes



Poor Innate Health

???

???

Threshold???

???

Good Innate Health

Zero

Facio-Cranial Ratio

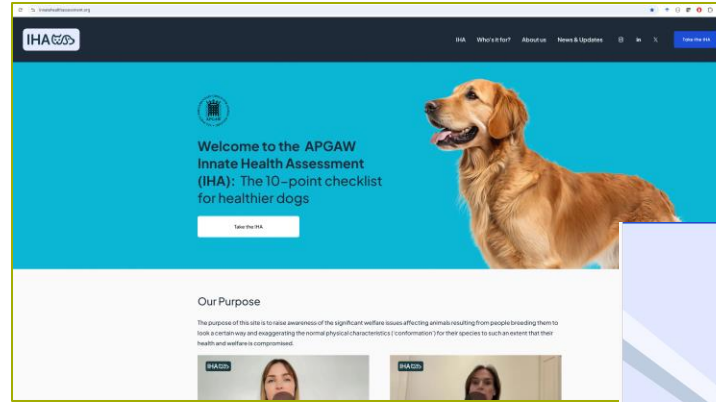
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Design aims: Innate Health Assessment



- ✧ Simple in design
- ✧ Easy and quick to complete
- ✧ Offer pass/fail criteria
- ✧ All dogs and types
- ✧ Evidence-based
- ✧ High-impact criteria
- ✧ Criteria aligned with current legislation
- ✧ Usable by all
- ✧ Free to use
- ✧ A 'living' tool
- ✧ Promotes sustainable futures for breeds
- ✧ Supports individual dog welfare but also humans.



<https://www.innatehealthassessment.org/>



The power of joined-up working



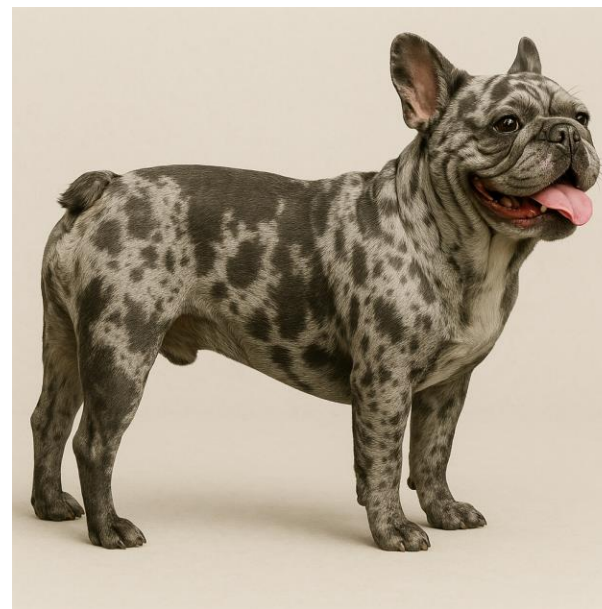
www.innatehealthassessment.org

1. No evidence of merle colouration

Innate health: Good



Innate health: Poor



Updated post-release to offer option for merle genetic testing



Royal Kennel Club

Some welfare concerns:

Increased risk of deafness & blindness

Suggested unacceptably poor innate health:

Evidence of merle colouration

AVEL, S. & SOMBÉ, P. 2020. Are dogs with congenital hearing and/or vision impairments so different from sensory normal dogs? A survey of demographics, morphology, health, behaviour, communication, and activities. *PLoS One*, 15, e0230651.

STRAIN, G. M., CLARK, L. A., WAHL, J. M., TURNER, A. E. & MURPHY, K. E. 2009. Prevalence of Deafness in Dogs Heterozygous or Homozygous for the Merle Allele. *Journal of Veterinary Internal Medicine*, 23, 282–286.

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2. Flat skin on head, body, legs and tail-base

Innate health: Good



Innate health: Poor



Some welfare concerns:

Painful infected smelly skin fold dermatitis

Suggested unacceptably poor innate health:

Skin folds on head, body, legs or around the base of the tail

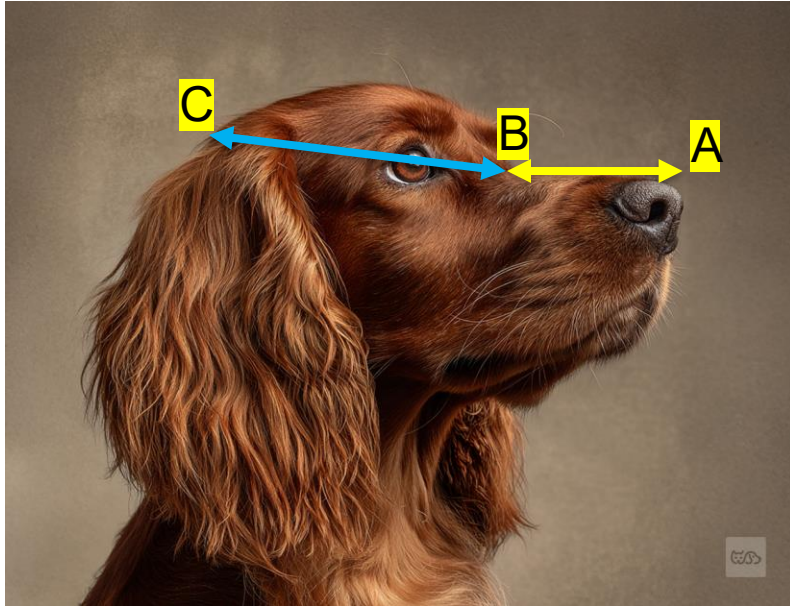
O'NEILL, D. G., ROWE, D., BRODBELT, D. C., PEGRAM, C. & HENDRICKS, A. 2022. Ironing out the wrinkles and folds in the epidemiology of skin fold dermatitis in dog breeds in the UK. *Scientific Reports*, 12, 10553.

SCOTT, D. W., MILLER, W. H., GRIFFIN, C. E. & MULLER, G. H. 2001. *Muller & Kirk's Small Animal Dermatology*, Philadelphia, Saunders.

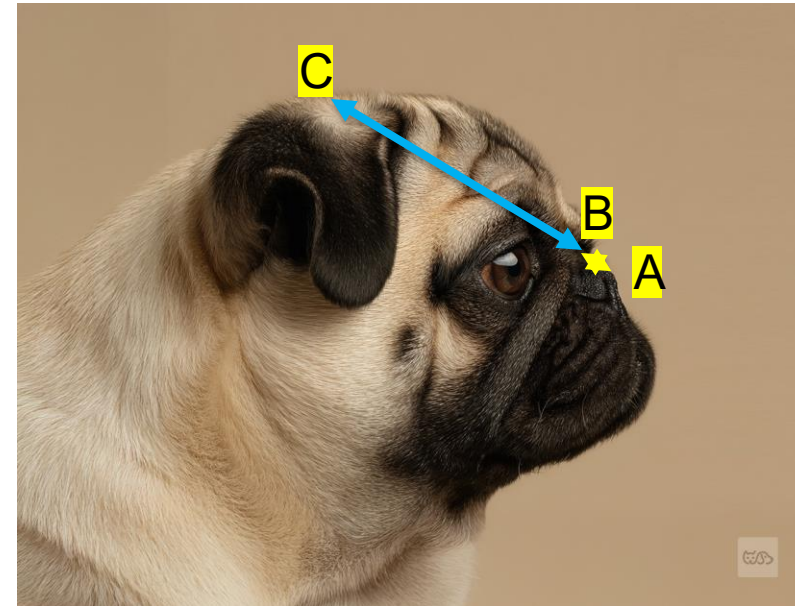
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3. Facio-cranial ratio: Muzzle length

Innate health: Good



Innate health: Poor



$$[A-B / B-C] > 0.33$$

Some welfare concerns:

Breathing, Thermoregulation, Eating

Suggested unacceptably poor innate health:

Faciocranial ratio shorter than 0.33.

TOMLINSON, F., LIU, N.-C., SARGAN, D.R. AND LADLOW, J.F. (2026) 'A cross-sectional study into the prevalence and conformational risk factors of BOAS across fourteen brachycephalic dog breeds', *PLoS One*, 21(2), e0340604

PACKER, R. M. A., HENDRICKS, A., TIVERS, M. S. & BURN, C. C. 2015. Impact of facial conformation on canine health: Brachycephalic Obstructive Airway Syndrome. *PLoS ONE*, 10, e0137496.

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4. Eyelid sits normally against the eyeball

Innate health: Good



Innate health: Poor



Some welfare concerns:

Corneal ulceration, Conjunctivitis, Dry eye

Suggested unacceptably poor innate health:

Entropion: Eyelid(s) turned-in

Ectropion: Eyelid(s) turned-out

O'NEILL, D. G., MUSTIKKA, M. P., BRODBELT, D. C., CHURCH, D. B. & VAATTOVAARA, V. 2025. Conformational eyelid disorders in dogs under primary veterinary care in the UK - Epidemiology and clinical management. *PLOS ONE*, 20, e0326526.

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5. Eyeballs sitting deeply within their sockets

Innate health: Good



Innate health: Poor



Some welfare concerns:

Corneal ulceration, Incomplete blink, Dry eye, Eyeball trauma

Suggested unacceptably poor innate health:

Whites of the eyes (sclera) visible when the animal is looking straight ahead

O'NEILL, D., LEE, M. M., BRODBELT, D. C., CHURCH, D. B. & SANCHEZ, R. F. 2017. Corneal ulcerative disease in dogs under primary veterinary care in England: epidemiology and clinical management. *Canine Genetics and Epidemiology*, 4, 5.

PACKER, R. M., HENDRICKS, A. & BURN, C. C. 2015. Impact of facial conformation on canine health: corneal ulceration. *PloS one*, 10, e0123827.

6. Mouth closes with upper teeth just in front of lower

Innate health: Good



Innate health: Poor



Some welfare concerns:

Difficulty prehending and chewing food, Increased acquired dental disease

Suggested unacceptably poor innate health:

Teeth on the lower jaw close either in front of (overshot lower jaw) or very far behind (undershot lower jaw) the teeth on the upper jaw

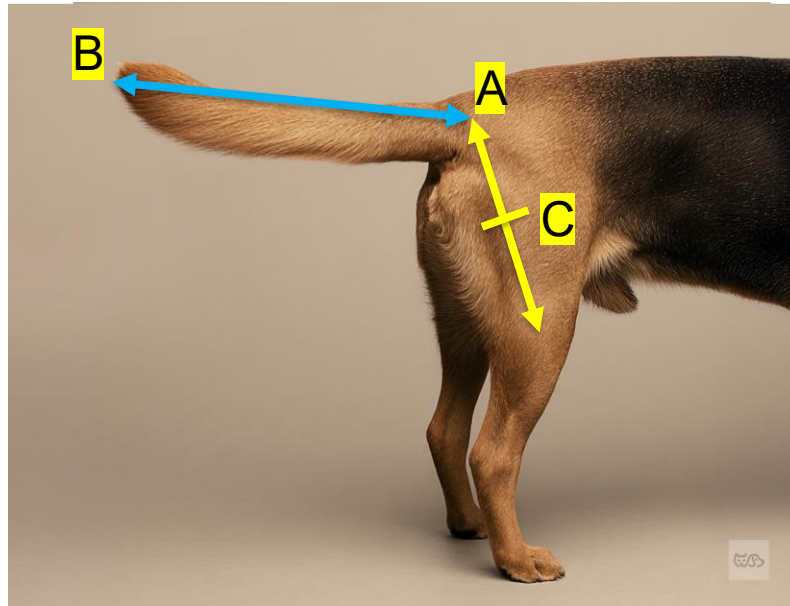
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NIEMIEC, B. A. 2021. *Breed predispositions to dental and oral disease in dogs*, Chichester, Wiley Blackwell.

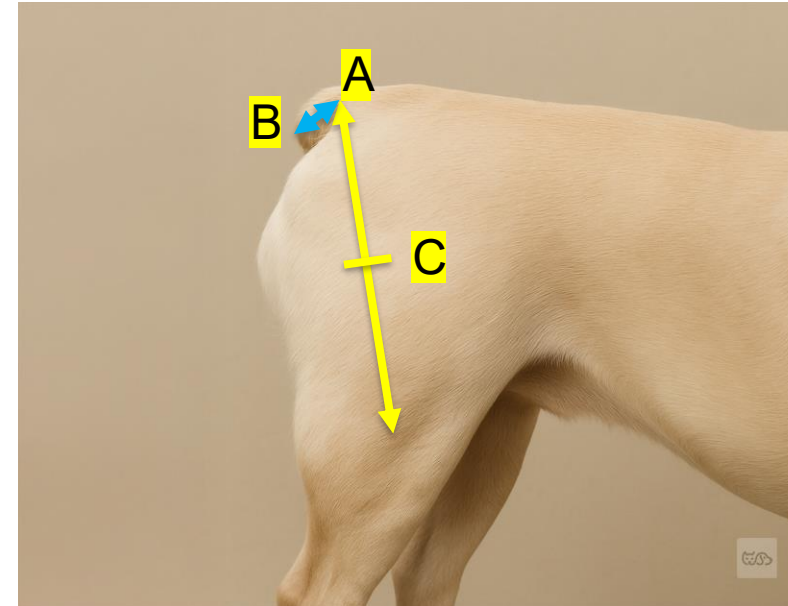
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7. Tail length

Innate health: Good



Innate health: Poor



$A-B > A-C$

Some welfare concerns:

Spinal abnormalities, Communication, In-utero deaths

Suggested unacceptably poor innate health:

Tail length shorter than half of the distance from the tail base to the level of the stifle (knee)

BRADSHAW, J. W. & ROONEY, N. 2016. Dog social behavior and communication. *In: SERPELL, J. (ed.) The Domestic Dog: Its Evolution, Behaviour and Interactions with People*. 2nd ed. Cambridge, UK: Cambridge University Press.

HYTÖNEN, M. K., GRALL, A., HÉDAN, B., DRÉANO, S., SEGUIN, S. J., DELATTRE, D., THOMAS, A., GALIBERT, F., PAULIN, L., LOHI, H., SAINIO, K. & ANDRÉ, C. 2009. Ancestral T-Box mutation is present in many, but not all, short-tailed dog breeds. *Journal of Heredity*, 100, 236–240.

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8. Straight legs

Innate health: Good



Innate health: Poor



Some welfare concerns:

Exercise capacity, Osteoarthritis

Suggested unacceptably poor innate health:

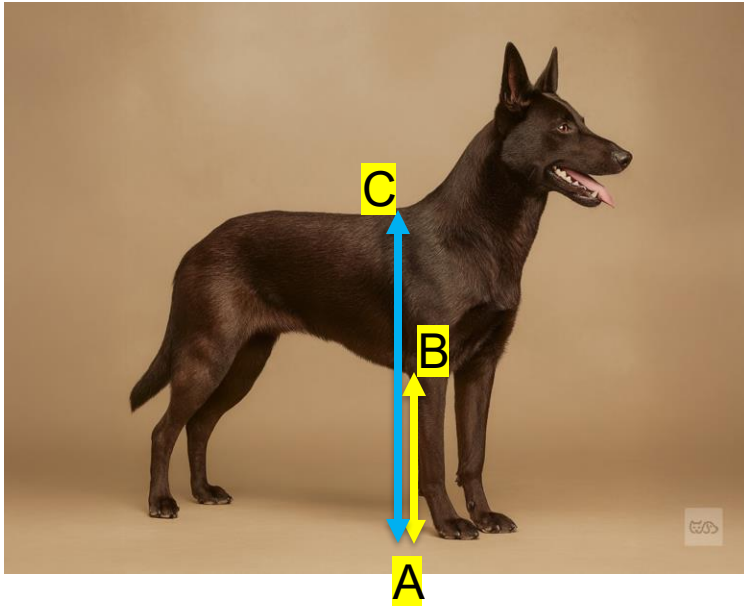
Front and/or back legs are bowed

LAPPALAINEN, A. K., PULKKINEN, H. S. M., MÖLSÄ, S., JUNNILA, J., HYYTIÄINEN, H. K. & LAITINEN-VAPAAVUORI, O. 2022. Breed-typical front limb angular deformity is associated with clinical findings in three chondrodysplastic dog breeds. *Front Vet Sci*, 9, 1099903.
 REUSING, M., BROCARD, M., WEBER, S. & VILLANOVA JR, J. 2020. Goniometric evaluation and passive range of joint motion in chondrodysplastic and non-chondrodysplastic dogs of different sizes. *VCOT Open*, 3, e66–e71.

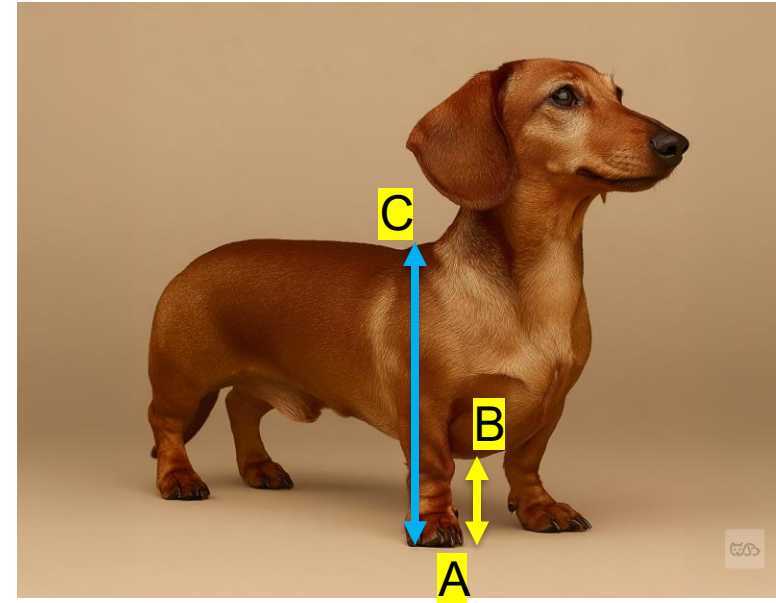
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9. Ground clearance

Innate health: Good



Innate health: Poor



Some welfare concerns:

Mobility, Exercise limitations, Spinal problems

Suggested unacceptably poor innate health:

Height from ground to the lowest part of the chest
less than 0.33 of height from ground to the shoulder

$$[A-B / A-C] > 0.33$$

BANNASCH, D., BATCHER, K., LEUTHARD, F., BANNASCH, M., HUG, P., MARCELLIN-LITTLE, D. J., DICKINSON, P. J., DRÖGEMÜLLER, M., DRÖGEMÜLLER, C. & LEEB, T. 2022. The Effects of FGF4 Retrogenes on Canine Morphology. *Genes*, 13, 325.
PACKER, R. M. A., HENDRICKS, A., VOLK, H. A., SHIHAB, N. K. & BURN, C. C. 2013. How long and low can you go? Effect of conformation on the risk of thoracolumbar intervertebral disc extrusion in domestic dogs. *PLoS ONE*, 8, e69650.

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10. Spinal flexibility

Innate health: Good



Innate health: Poor



IHA 

Some welfare concerns:

Mobility, Spinal problems, Intractable frustration, Reproductive issues

Suggested unacceptably poor innate health:

Dog's head and neck cannot be flexed around so the muzzle can touch the flank, thigh or hip area

BERTRAM, S., TER HAAR, G. & DE DECKER, S. 2019. Congenital malformations of the lumbosacral vertebral column are common in neurologically normal French Bulldogs, English Bulldogs, and Pugs, with breed-specific differences. *Veterinary Radiology & Ultrasound*, 60, 400–408.

WYATT, S. E., LAFUENTE, P., TER HAAR, G., PACKER, R. M. A., SMITH, H. & DE DECKER, S. 2019. Gait analysis in French bulldogs with and without vertebral kyphosis. *The Veterinary Journal*, 244, 45–50.

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Innate Health Assessment (IHA): Next developments



- ✧ **AI automated assessment** of images of dogs and cats
- ✧ **International uptake**
- ✧ **Cat IHA:** Likely criteria
 - ✧ Folded ears
 - ✧ Dwarfism/short legs
 - ✧ Hairlessness
 - ✧ Congenital taillessness/short tail
 - ✧ Brachycephaly

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

Acknowledgements

VetCompass™ Vet practices

Prof Dan O'Neill
Prof Dave Brodbelt
Prof David Church
Noel Kennedy
Dr Rowena Packer

APGAW

Marisa Heath
Vanessa Barnes

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www.rvc.ac.uk/VetCompass

<https://www.innatehealthassessment.org/>



International Collaborative on
Extreme Conformations in Dogs



THE IVO TRUST



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