

## Brachycephaly & other conformational disorders

- The domestic dog has evolved from wolves (Figure 1) around 18,000 to 32,000 years ago and has undergone human selection for breed specific traits and appearances.
- An animal's conformation - their overall structure and appearance - is highly varied between domestic dog breeds.
- Certain conformations may involve anatomical changes which are harmful.

Figure 1:  
**Canis lupus**

The wolf, the progenitor dog, has evolved over millions of years based on its fitness to survive.



**Brachycephaly** is a term applied to dogs and cats with short noses which may result in obstruction of the upper airway, a clinical syndrome called Brachycephalic Obstructive Airway Syndrome (BOAS) and many owners are unaware this is a medical problem (see p15). Brachycephaly is also often associated with difficulty in giving birth (dystocia) as the puppies head is relatively large compared to the mothers pelvis.

Up to 27% of brachycephalic breeds suffer from an obstructive airway problem and up to 92% of some breeds are unable to give birth naturally (see p6, 8).

Popular breed nose length:  
i) Pug, ii) British Bulldog, iii) Boxer

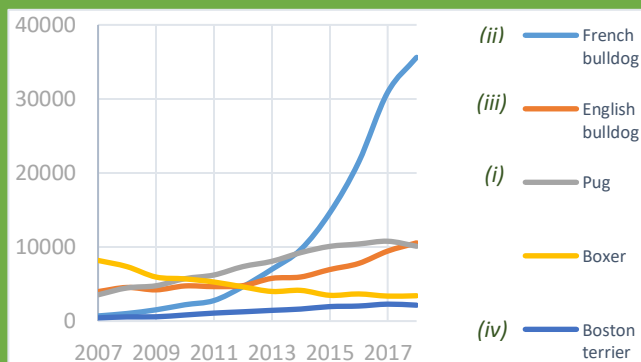


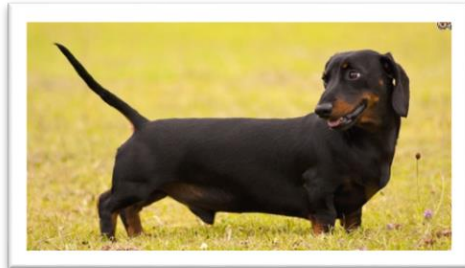
Images: [The Happy Puppy Site](http://TheHappyPuppySite.com); [Adopt-a-Pet.com](http://Adopt-a-Pet.com)

### UK brachycephalic breed registrations to UK Kennel Club are increasing

The French Bulldog is now the UK's most popular breed (see p4). Some popular brachycephalic breeds are shown above and described in the legend (i-iv).

Kennel Club registrations: 2007- 2018





Miniature breeds such as the Chihuahua (left) or Yorkshire Terrier (right) can suffer from a collapsing wind pipe.



Dachshunds (above) are increasing in popularity with Kennel Club registrations of miniature Dachshunds increasing from 4,902 in 2007, to 7,165 in 2016. The breed is prone to spinal problems.

Image: [Pets4Homes](#)



Image: [Omlet](#)

Dogs such as the Shar Pei (above) have been bred for excessive skin folds but often suffer chronic skin inflammation and infections.



Conformational genetic disorders can also affect some cat breeds. The Scottish Fold Cat has been selected for its folded ear. This feature is a genetic defect leading to improper cartilage and bone development (osteochondrodysplasia) and painful conditions such as arthritis from an early age (see page 14). This breed is no longer recognised by UK or World Breed Societies.

## Breeding Selection

Genetic information alongside conformational features can be used in breeding strategies to help eliminate brachycephalic conformational -related disorders (p15).

## Responsible use of animals in advertising

The British Veterinary Association have published guidelines on best practice *“to avoid ... using animal imagery in advertising [with] depictions of animals in pain or at risk of disease and suffering... images of certain pets with hereditary defects or surgically altered characteristics have the potential to normalise suffering and exacerbate problems through driving demand for specific breed types.”*

**Legislation:** In 2018, The Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018, a statutory instrument to the Animal Welfare Act 2006, was passed<sup>1</sup> to protect the welfare and health of breeding bitches and their of offspring.

**‘No dog may be kept for breeding if it can reasonably be expected, on the basis of its genotype, phenotype, or state of health that breeding from it could have a detrimental effect on its health or welfare or the health or welfare of its offspring’.**

At the time of writing this report, is yet to be enforced (p16).



## VPRF FACT FILE:

# Brachycephaly & other conformational disorders

*Last updated March 2019*

### **About the Veterinary Policy Research Foundation (VPRF) and author declarations**

The VPRF is a not-for-profit organisation set up by Lord Trees with the purpose of employing a veterinary surgeon as an intern/researcher to facilitate Lord Trees' activities in the House of Lords. The Parliamentary Veterinary Internship (PVI) is funded by The Veterinary Policy Research Foundation that receives sponsorship from several veterinary organisations, professional bodies and universities. Further information on the VPRF can be found on our website: <https://vprf.wordpress.com/>.

### **Declarations by the authors**

The authors are veterinary surgeons or biomedical scientists and support actions that promote the health and welfare of both humans and animals.

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## Aims and Objectives

This report provides data and information on some of the more significant conformational related diseases of dogs and cats. The authors aim to update this report as new relevant information becomes available. The date of the latest update is displayed on the cover page. The authors welcome any constructive feedback on additional data to include or ways to further improve this document. These will be considered in future updates.

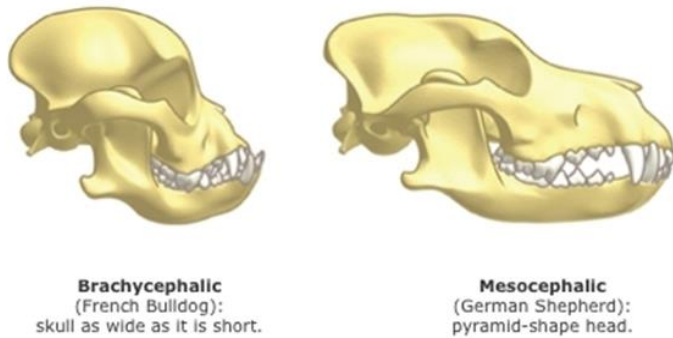
## 1. Introduction

The conformation of an animal – meaning their overall structure and appearance, is hugely varied between breeds. Certain conformations are increasingly popular because of their appearance but within some breeds these exaggerated conformational characteristics and the associated genetic variants are causing increasing health problems.<sup>1</sup>

Due to the rapid increase in popularity of brachycephalic breeds in the UK, the related disorders for these breeds are discussed in most detail in this report.

## 2. Short face (brachycephaly)

Brachycephaly is a term applied to dogs and cats with short heads (popular breeds shown in Figure 3 overleaf). Through selective breeding the skeletal muzzle length has been reduced (Figure 1 & 2)<sup>2</sup> but the size of the soft tissue in the skull is not proportionally reduced, resulting in compression of the nasal cavity, partial obstruction of the pharynx and larynx and in some cases compression of the brain and base of the spinal cord. In cats, brachycephaly is found in breeds such as the Persian. The British Veterinary Association has issued advice on brachycephaly in cats and is urging people to move away from breeding flat faced cats. The rest of this report focuses on the syndrome in dogs however some of the conditions described occur in both cats and dogs.



**Figure 1.**

*Canine skulls showing different domestic dog head types, highlighting the difference in muzzle length relative to cranium length for French Bulldog (left) and German Shepherd.*



**Figure 2.** *Brachycephalic canine head showing differences in muzzle length (B to C) relative to cranium length (A to C) for from left to right; Pug, English Bulldog, Boxer.*

The images in figure 2 show the variation in muzzle length relative to cranium length in popular brachycephalic dog breeds. These images illustrate why brachycephalic animals may suffer from primary respiratory and thermoregulation difficulties due to the limited size of their nasal cavity, mouth and throat space.

## 2.1 Brachycephalic dog breeds

There are many brachycephalic dog breeds in the UK. This list was published in a declaration by corporate group CVS of brachycephalic breeds suffering conformation-related disorders and thereby not to be used in their marketing material<sup>3</sup> :

- Affenpinscher
- American Staffordshire terrier
- American Bulldog
- Boston terrier
- Boxer
- Brussels griffon
- English Bulldog
- Bullmastiff
- Cane Corso
- Chihuahua
- Chow Chow
- Dogo Argentino
- Dogue de Bordeaux
- English Mastiff
- French Bulldog
- Japanese Chin
- King Charles spaniel
- Neapolitan mastiff
- Newfoundland
- Pekingese
- Presa Canario
- Pug
- Shar Pei
- Tibetan Special



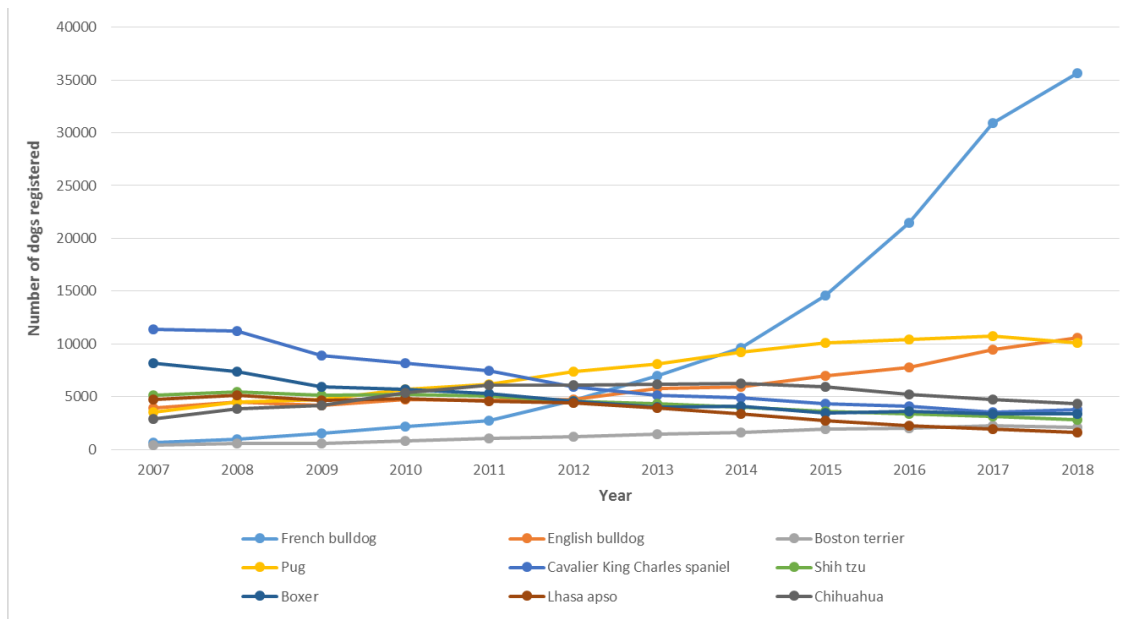
Images: [The Happy Puppy Site](#); [Adopt-a-Pet.com](#)

**Figure 3.**

*Popular brachycephalic dog breeds in UK i) Pug, ii) French Bulldog, iii) British bulldog, iv) Boston Terrier*

## 2.2 Increasing popularity of brachycephalic breeds

French Bulldogs are currently (2019) the most popular brachycephalic breed in the UK, overtaking both the Cocker Spaniel and the Labrador retriever. French Bulldog registrations with the Kennel Club have increased by over 3000% in the last 10 years (Figure 4) and next most popular brachycephalic breeds are the Pug and English Bulldog.<sup>4</sup>



**Figure 4:** Most popular brachycephalic dog breed registrations with the Kennel Club 2007-2018. Excludes any breed with less than 2000 registrations per year and any crossbred dogs. Kennel Club registration is voluntary and 2018 figures are estimated based on data from the first three quarters of the year.

### Reasons for increase in popularity

A recent study carried out by the Royal Veterinary College and Plymouth University<sup>5</sup> asked owners why they would purchase a brachycephalic dog. Appearance was found to be the most common reason, with their baby-like features often quoted as being attractive. It was also found that owners of brachycephalic dogs were more likely to live in apartments, and therefore the small size of the breeds was said to be a factor. Owners of these breeds are also younger, and the authors suggest that the media may have been influential with brachycephalic breeds being used more frequently in advertising.

## 2.3 Common health problems associated with brachycephaly

Different breeds may be more or less affected by brachycephaly, and different associated conditions may be present in some breeds and not others. Below is a detailed summary of the conditions affecting breeds which are both popular in the UK and affected with brachycephalic conditions.



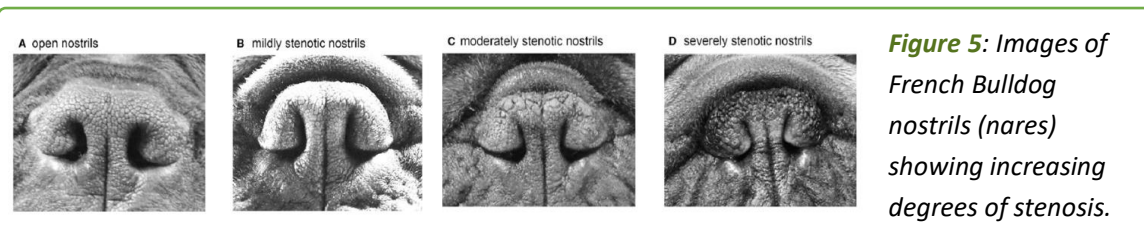
### 2.3.1 Upper Respiratory Tract and Brachycephalic Obstructive Airway Syndrome (BOAS)

Brachycephalic dogs frequently present with signs of upper airway obstruction due to structural deformities in the upper airway. These include an elongated soft palate, stenotic nares (narrowed nostrils, Figure 5), enlarged tonsils, everted laryngeal sacculles alongside tracheal hypoplasia these can result in difficulty breathing, snoring, panting, over-heating and exercise intolerance.<sup>6</sup>

Individually and in combination, these deformities make breathing and control of body temperature (thermoregulation) difficult for the dog and result in a syndrome referred to as Brachycephalic Obstructive Airway Syndrome (BOAS). Muzzle length can be variable (Figure 2 above) but the risk of BOAS increases sharply as muzzle length reduces to less than 50% of cranial length.<sup>2</sup>

**Exercise intolerance** increases as breathing difficulties increase. Severe breathing difficulties and an increased body temperature, due to a decreased ability to thermoregulate<sup>7</sup>, are observed during exercise in animals with severe BOAS and milder clinical signs are observed in dogs with milder initial presentation during exercise<sup>8</sup>. Dogs rely on the dissipation of metabolic heat via their respiratory tract and the anatomy of the brachycephalic dogs' upper airway hampers this dissipation.

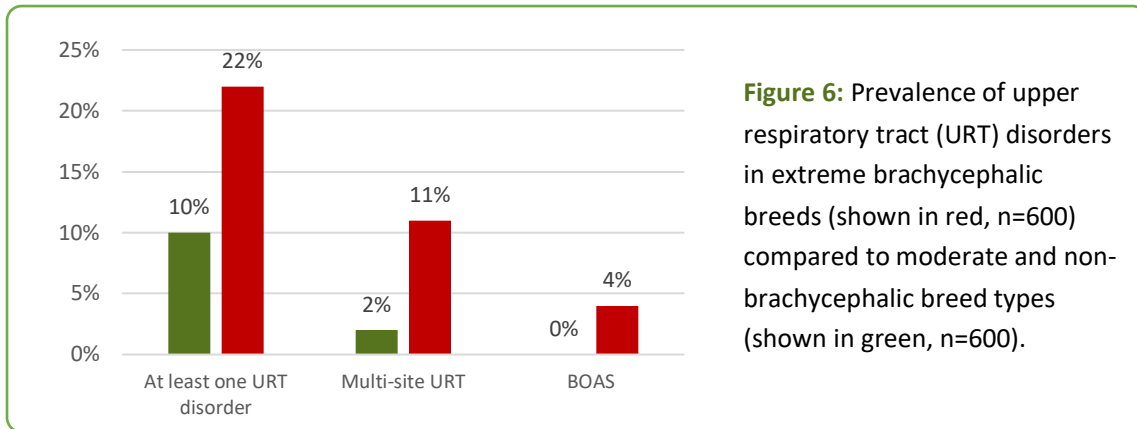
Conformational abnormalities can also result in an increased inspiratory (in-breath) effort and negative airway pressures which lead to swelling (oedema), stretching of the soft tissues of the airway and eventually collapse of the cartilage of the larynx and death by asphyxiation.



In one study<sup>9</sup> 90% of the French Bulldogs had at least a partial restriction of their airways.<sup>a</sup>

Three extremely brachycephalic breed types (English Bulldog, French Bulldog and Pug) were compared with one moderately brachycephalic breed (Yorkshire Terrier) and two non-brachycephalic breeds (Border Terrier and West Highland White Terrier)(Table 1 and Figure 6)<sup>10</sup>. 26.5% of pugs had at least one Upper Respiratory Tract (URT) disorder compared to just 7% West Highland White Terriers, less than half of that for the extremely brachycephalic breed types. No cases of BOAS were detected in the moderately or non-brachycephalic breeds.

<sup>a</sup> n=89 - 19 referred from Queen's Veterinary School Hospital for BOAS consultation and 70 volunteered by UK owners.



**Figure 6:** Prevalence of upper respiratory tract (URT) disorders in extreme brachycephalic breeds (shown in red, n=600) compared to moderate and non-brachycephalic breed types (shown in green, n=600).

**Table 1:** Prevalence of upper respiratory tract disorders among extremely (red), moderately (yellow) and non-brachycephalic dogs (green).

Variable	English Bulldog (n=200)	French Bulldog (n=200)	Pug (n=200)	Yorkshire Terrier (n=200)	Border Terrier (n=200)	West Highland White Terrier (n=200)
<b>At least one URT disorder</b>	<b>19.5%</b>	<b>20.0%</b>	<b>26.5%</b>	<b>13.0%</b>	<b>9.0%</b>	<b>7.0%</b>
Disorder of the nares/nasal cavity (Fig. 6)	7.5%	12.0%	14.5%	4.0%	4.0%	3.5%
Disorder of the hard and soft palate	2.5%	3.0%	4.0%	0.0%	0.0%	0.0%
Disorder of the pharynx	1.0%	1.0%	2.0%	0.5%	0.5%	1.0%
Disorder of the tonsil	0.0%	1.5%	0.0%	0.5%	0.0%	0.0%
Disorder of the larynx	0.5%	1.5%	1.5%	0.0%	0.5%	0.0%
Disorder of the Trachea	3.5%	6.0%	5.5%	10.0%	5.0%	4.0%
<b>BOAS</b>	<b>2.5%</b>	<b>1.5%</b>	<b>6.5%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Multi-site URT</b>	<b>10.5%</b>	<b>10.5%</b>	<b>13.0%</b>	<b>2.0%</b>	<b>2.5%</b>	<b>1.0%</b>

O'Neill *et al.* (2015), data collected as part of the VetCompass programme. Stratified random sampling was performed to select two hundred dogs from each of 6 breed types.

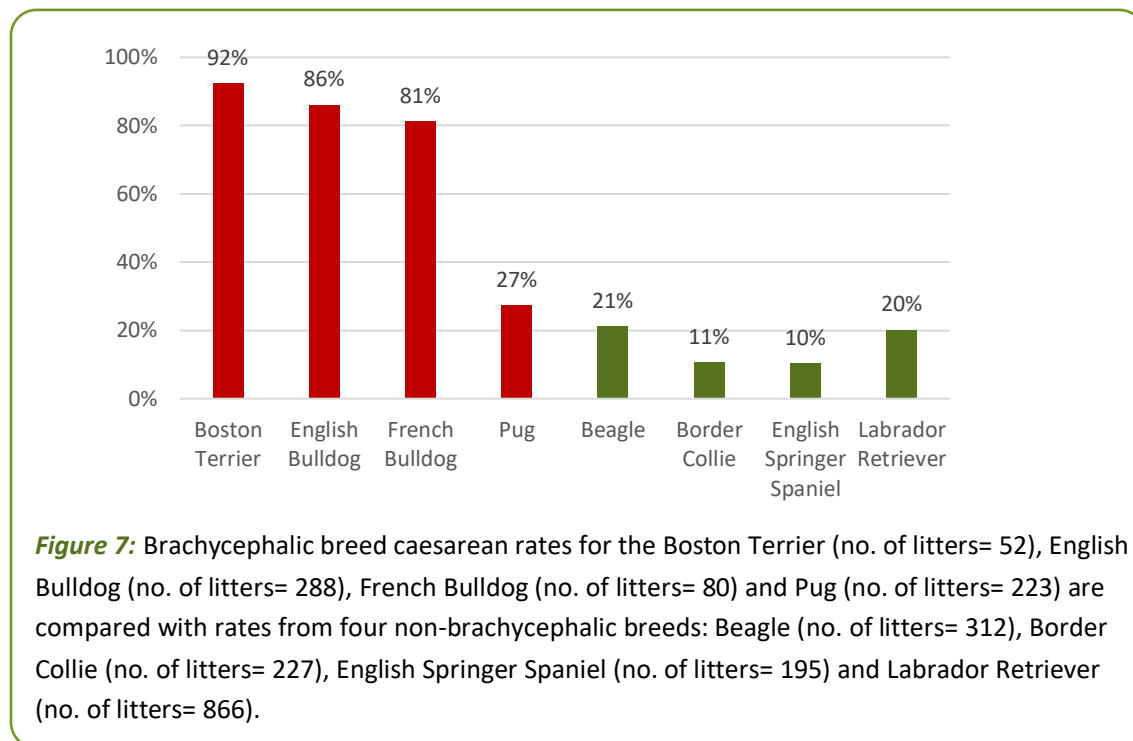
A separate study of 700 dogs from 97 breeds were recruited while visiting a Veterinary Hospital<sup>2</sup>, twelve of these breeds were found to be affected by BOAS<sup>b</sup>. The breeds most affected were Pugs at 88%, Boston Terrier 83%, French Bulldog 70% and English Bulldog 63%.

<sup>b</sup> Pug (n= 32, 88%); French Bulldog (n=13, 70%); English Bulldog (n=16, 63%); Boston Terrier (n=6, 83%); Pekingese (n=3, 67%); Dogue de Bordeaux (n=6, 67%); Griffon Bruxellois (n=2, 50%); Boxer (n=13, 18%); Shih Tzu (n=13, 8%); Chihuahua (n=5, 40%); CKCS (n=26, 4%); Affenpinscher (n=1, 0%); Staffordshire Bull Terrier (n=16, 6%).

### 2.3.2 Dystocia

**Dystocia** is the term given to describe difficulties in giving birth. Dystocia is common in brachycephalic breeds due to the mismatch between large heads in puppies compared to the relatively narrow pelvis of the mother. A study<sup>11</sup> using records from 50 first-opinion practices in the UK found the odds of dystocia, in comparison to cross-bred dogs, were over 10 times higher in common brachycephalic breeds<sup>c</sup>

A Review<sup>12</sup> of 2004 Kennel Club Purebred Dog Health Survey<sup>13</sup> calculated the percentage of caesareans by number of litters registered for four brachycephalic breeds (shown in red) in comparison with four non-brachycephalic breeds (shown in green) (Figure 7). 64 out of 80 French Bulldogs had to give birth by caesarean section as did 247 of 288 English Bulldog bitches and 47 of the 52 litters registered as Boston Terriers.



<sup>c</sup> Odds of dystocia of brachycephalic breeds when compared to cross bred dogs: 15.9 times more likely in French Bulldogs, 12.9 Boston terriers, 11.3 pugs and 10.4 Chihuahuas.

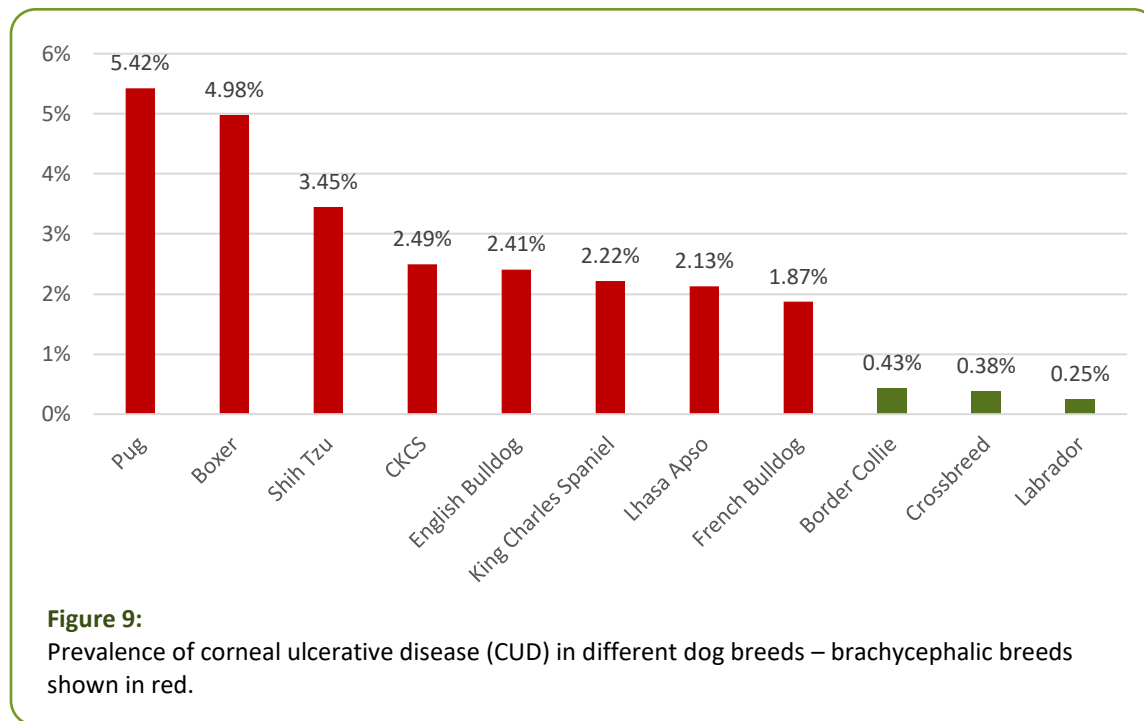
### 2.3.3 Brachycephalic Ocular Syndrome

**Brachycephalic Ocular Syndrome** is the term for the disease affecting brachycephalic animals which often combines lesions of the eyelid, conjunctiva and cornea (surface of the eye). Entropion and ectropion are eyelid disorders causing corneal irritation or preventing the eyelids from closing (Figure 8).

A study of 104, 233 dogs attending vets looked at the prevalence of corneal ulcerative disease (CUD) and found higher prevalence in brachycephalic breeds compared to other breeds (Figure 9)<sup>11</sup>. When compared with the prevalence in crossbred dogs, brachycephalic breeds (grouped including American Bulldog, Boston Terrier, Boxer, English Bulldog, French Bulldog, Pekingese, Pug and Shih Tzu) were 11 times more likely to suffer from CUD.



**Figure 8:** Corneal ulcer - a painful lesion on the surface of the dog's eye.



### 2.3.4 Skin fold dermatitis

Skin Fold Dermatitis is the irritation of the skin between folds commonly found on the faces of brachycephalic breeds, as the amount of skin which covers the shortened muzzle is not proportionally reduced as skull length decreases.

### 2.3.5 Gastric regurgitation

Gastrointestinal (GI) disorders are also associated with BOAS due to the negative intraabdominal pressure caused by chronic respiration difficulties.<sup>14</sup> The digestive disorders associated with BOAS include; oesophagitis, oesophageal stenosis, hiatal hernia, antral gastric mucosa hyperplasia due to chronic duodenal reflux.<sup>15,16</sup>

### 2.3.6 Chiari malformation and Syringomyelia

A small head size (Chiari malformation) in relation to the brain can cause the brain to protrude into the base of the spinal cord, leading to cysts (syringomyelia). Chiari-like malformation and secondary syringomyelia (associated with overcrowding of the cranial fossa) lead to the brain and base of the spinal cord being squashed which causes pain and neurological deficits.<sup>17, 18</sup> It is seen in the Cavalier King Charles Spaniel especially.<sup>19</sup>

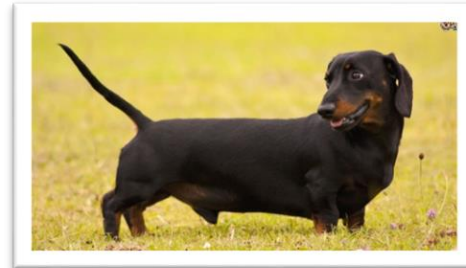
## Insurance premiums associated with brachycephalic breeds

**Given the potential for multiple severe health implications for brachycephalic dog breeds this is now being reflected in insurance premiums charged by pet insurance companies for these breeds. A survey completed by *Which?* showed the cheapest annual lifetime policy for a French Bulldog was £358 in comparison to a Labrador retriever at £182, Border collie at £134 and Jack Russell terrier at £133, reflecting the disparity in health and welfare of those breeds popular as pet dogs in the UK.**

## 3. Long back or neck

### 3.1 Intervertebral Disc Disease (IDD)

Intervertebral disc disease is an age-related, degenerative condition of the intervertebral discs. The degeneration results in reduced shock absorbance which causes disc herniation and spinal cord compression. This causes pain, and can eventually lead to the loss of the ability to walk. In severe cases dogs may experience paralysis, loss of bladder control and loss of pain sensations.



**Figure 10:** Dachshunds are prone to spinal problems. Image: Pets4Homes

#### Types of Intervertebral Disc Disease:

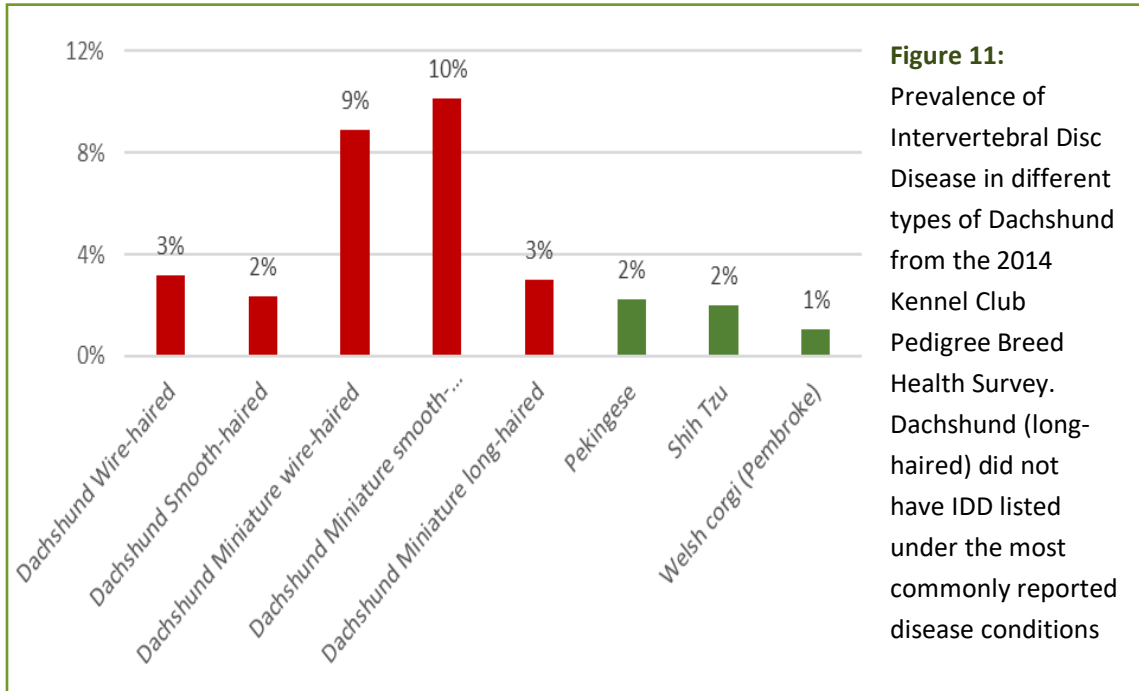
- Hansen type I disc degeneration occurs due to a loss of notochordal cells, which are responsible for producing proteoglycans which “hold water” in the disc. The inner contents of the intervertebral disc suffer an extrusion. This is the type which is most common in small breed dogs with disproportionately short limbs.<sup>20</sup>
- Hansen type II is more common in medium to large breed dogs and is more similar to that of a human disc disease. This occurs when the outer part of the disc bulges and protrudes.
- Hansen type III is an injury caused by a sudden trauma, and does not result in a progressive or on-going spinal cord compression and will likely recover with non-invasive treatments such as physiotherapy.

#### 3.1.1 IDD prevalence across breeds

The incidence of IDD for all breeds was calculated as 23 cases per 1000 dogs per year in a study of 13 North American Veterinary Schools, with the Dachshund (Figure 10), Pekingese, Beagle, Welsh Corgi, Lhasa Apso, and Shih Tzu at a significantly increased risk. The prevalence in Dachshunds is predicted to be around 19%.<sup>21</sup> Figure 11 shows the results of a 2014 Kennel Club survey<sup>22</sup> on the incidence of IDD in Dachshunds (red) and other longer-backed breeds (green).

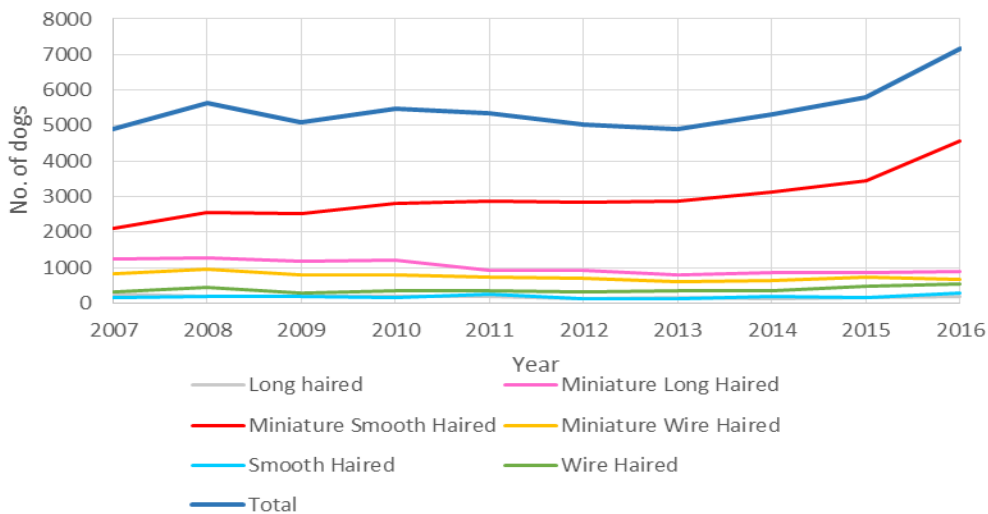
A study in Finland<sup>23</sup> found IDD in nearly a third (31%) of 193 Dachsund-type dogs(>10yrs old) radiographed for health screening purposes as per the Finnish Dachshund Club protocol.<sup>d</sup>

<sup>d</sup> The miniature wire-haired had the highest prevalence (50%, n=30) and the most popular UK Dachshund breed – the miniature smooth haired, had a prevalence of 33.3% (n=6). The breed type with the lowest prevalence was the Standard long-haired (13.3%, n=30).



### 3.1.2 Increase in Dachshund ('Sausage dog') popularity

The total number of Dachshund breed dogs registered with the Kennel Club has risen from 4,902 in 2007, to 7,165 in 2016 (Figure 12). This overall increase is largely due to the numbers of miniature smooth-haired Dachshunds increasing from 2,112 in 2007, to 4,576 in 2016.



**Figure 12:** Numbers of Dachshund dogs registered with the Kennel Club from 2007 to 2016. Separated by type with the total numbers given by the dark blue line.

## 4. Corkscrew tail

A corkscrew shaped tail (Figure 13) leads to abnormally shaped bones in the spine (hemivertebrae) and is often recognised in brachycephalic breeds, particularly the French Bulldog. This is because the breed standard has a coiled tail which requires selecting for hemivertebrae in the tail, predisposing the animal to having hemivertebrae elsewhere in the spine. This condition leads to instability of the spine and increased potential for compression of nerves or the spinal cord leading to; pain (which can be severe), ataxia (wobbliness), loss of hind leg function and incontinence. Hemivertebrae can be identified on radiograph, thus animals intended for breeding should be radiographed and only used if they are not likely to pass on this deformity to their offspring.<sup>24,25,26</sup>



**Figure 13:** A pug puppy with a corkscrew tail conformation.

## 5. Miniaturisation or short legs

Mini breeds can suffer from loose knee caps (patella luxation) in very small breeds due to a shallow patella groove, e.g. Yorkshire Terrier and Pomeranian.

Legg-Calve-Perthes Syndrome is seen in dogs with short legs; leading to spontaneous degeneration of the thigh bone (femur) when the dog is young (3-13 months). It is seen in Yorkshire Terriers and West Highland White terriers and the Manchester Terrier has a genetic trait leading to disease.<sup>27</sup>

Tracheal collapse is a chronic disease affecting the windpipe (trachea). Small breed dogs particularly Yorkshire terriers, Pomeranians, Poodles and Chihuahuas are most affected (Figure 14). Dogs that are overweight or that live in a household with smokers may be more at risk or at least more likely to show clinical signs.<sup>28</sup>



**Figure 14:** Miniature breeds such as the Chihuahua (left) or Yorkshire Terrier (right) can suffer from a collapsing wind pipe.



## 6. Folded ears

### 6.1 Osteochondrodysplasia in the Scottish Fold Cat

Cartilage is an essential feature of joint surfaces to enable pain free movement. Osteochondrodysplasia is a group of disorders which compromise cartilage and/or bone growth resulting in a deformed skeleton. This is what leads to the characteristic ear shape in Scottish fold cats (Figure 15), but also causes malformations in the distal limbs and tail. These malformations lead to pain on movement of joints and arthritis from an early age.



**Figure 15:** Scottish Fold Cat

**All folded-ear cats will develop osteochondrodysplasia to some degree, those with two copies of the gene**

**deteriorate at a young age.** The pattern of inheritance is incomplete dominant, so even heterozygous folded ear cats (those with only one copy of gene, should not be used for breeding.<sup>29,30</sup>

Literature is limited for this condition in Scottish fold cats but several small scale studies have examined the effect of the disease. Eleven Scottish fold cats brought to the Istanbul University Veterinary Faculty found the following clinical signs<sup>31</sup>:

- 8/11 cats (aged 5 months – 2 years) were reported by their owners to be reluctant to move and gave a pain response whilst being manipulated.
- The other three cats were not reported by their owner to have muscular complaints until several days prior to their appointments. Physical examination of the other 3 cats found difficulties in walking as well as bilateral, painful, hard masses but owners were unaware.
- 2/11 cases showed deformation of the forelegs and metacarpal bones
- All cases showed deformation and pain in the distal extremities

**Popularity:** The popularity of the breed may be due to their round faces and attractive expressions. There are also several celebrity owners, such as musicians Ed Sheeran and Taylor Swift who will share images on social media to their millions of fans, without any mention of their inevitable declining health. The owner of a Scottish fold cat in Japan, known as Maru, has videos on YouTube which have been watched more than 300 million times<sup>32</sup>.

#### 6.1.1 Breed Registration

It is because of these health concerns that the UK pedigree cat registry, the Governing Council of the Cat Fancy, stopped registering folds by 1971, only five years after it began accepting registrations again. The international Feline Federation will also not recognise this breed due to its health conditions. Due to the lack of registration, there is no accurate data on Scottish fold numbers, however numbers are reported to be increasing in the United States, Turkey and Japan.

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## 7. Responsible breeding, public awareness and UK Legislation

### 7.1 Owner awareness of health issues

**In a survey of brachycephalic dogs suffering from BOAS, over half (58%) of owners reported that their dogs had no breathing problems<sup>33</sup>.** This may be due to a perception of noisy breathing or other related symptoms being ‘normal’ for the breed. This failure of owners to recognise symptoms therefore means any studies using owner-reported data, such as the Kennel Club Pedigree Health Survey should be viewed with a degree of uncertainty.

### 7.2 Risk factors for brachycephaly-associated diseases and breeding selection

Conformational risk factors for Brachycephalic Obstructive Airway Syndrome include; Stenotic nares, neck to girth ratio and high body condition score<sup>34</sup>. These are valid and easily applicable measures thus breeders should know not to breed from animals with these characteristics which are easy to measure and observe. Breeders should be strongly discouraged from breeding any dogs with relatively short muzzles as they are selecting for deformities in the offspring which cause undue pain and suffering.

Beyond conformational risk factors, genetic studies have found the SMOC2 locus on the canine genome explains 36% of face length variation in dog<sup>35</sup> and the CFA1 locus for a brachycephalic head type.<sup>36</sup>

Genetic information alongside conformational features can be used in breeding strategies to help eliminate brachycephalic conformational-related disorders.

### 7.3 Responsible use of animals in advertising

Further good practice guidelines on what should be considered when using dogs for advertising have been published by the BVA and the Vet Record Journal does not accept marketing material which does not meet these standards<sup>e</sup>:

*“The power and reach of advertising can be harnessed to promote positive animal health and welfare and this document is intended to support advertisers in their decision making to achieve this...Perhaps the most obvious area to avoid when using animal imagery in advertising is depictions of animals in pain or at risk of disease and suffering. Yet, images of certain pets with hereditary defects or surgically altered characteristics have the potential to normalise suffering and exacerbate problems through driving demand for specific breed types.*

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<sup>e</sup> <https://www.bva.co.uk/workplace-guidance/ethical-guidance/advertising-guidelines/>

- **Images of ‘teacup’ animals** – these animals, often used to describe small dogs, can have a range of health issues related to their unnaturally small size.
- **Images of animals with a long back and short legs** – pets with long backs and short legs can suffer from back, hip and leg problems.
- **Images of animals with short muzzle or noses** – dogs, rabbits and cats with ‘flat faces’ experience health problems associated with their flattened face, including respiratory issues, skin infections, eye disease, dental problems and spinal disease.
- **Images of animals with bulging eyes** – this is a characteristic of some dog breeds that needs targeted care and management to prevent eye damage and infection.
- **Images of animals with visible skin folds anywhere on the body or head** – these folds can lead to skin health problems and restrictions in expression.
- **Images of animals with Drooping or ‘diamond’ eyes** – these can cause a range of eye health problems.”

## 7.4 Existing Legislation

In 2018, The Animal Welfare (Licensing of Activities Involving Animals) (England) Regulations 2018, a statutory instrument to the Animal Welfare Act 2006, was passed to add to regulations in section 61(2).<sup>37</sup>

Under Schedule 6 it states Specific conditions: Breeding dogs 6 - Protection from pain, suffering, injury and disease (5)

**‘No dog may be kept for breeding if it can reasonably be expected, on the basis of its genotype, phenotype, or state of health that breeding from it could have a detrimental effect on its health or welfare or the health or welfare of its offspring’.**

This legislation was passed in an effort to protect the welfare and health of breeding bitches and their of offspring. At the time of writing this report, is yet to be enforced.

## 7.5 Future legislation?

There is currently no breeding ban on the Scottish fold cat, but the Scottish government’s Cabinet Secretary for Environment, Climate Change and Land Reform, Roseanna Cunningham, made a statement which included a commitment to update regulations to combat the irresponsible breeding and sale of dogs, cats and rabbits.<sup>38</sup>

In a BVA article (11/05/2017) Gudrun Ravetz, British Veterinary Association President at the time, added,

“Animal welfare starts right at the beginning of a pet’s life, so the focus on pet licensing and breeding regulations is welcome. We know that a third of vets are seeing puppies they believe to have been illegally imported and an increasing number of owners are buying brachycephalic or designer breeds, like Scottish fold cats; pets must be purchased with owners prioritising animal health and welfare, rather than making an impulse buy based on looks alone.”<sup>39</sup>

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