

French Bulldog Club of England Health Scheme Report 2019



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Introduction

Many health problems in Frenchies are constitutional, being unwanted side effects of the breed's basic short-faced, chondrodystrophic structure. These may include respiratory disorders such as Brachycephalic Obstructive Airways Syndrome (upper respiratory problems affecting the nose, mouth and throat), prominent eyes, dental problems, spinal and tail issues. Many of these are polygenic or developmental defects.

One of the major initiatives developed and set up by the French Bulldog Club of England is the multi-level French Bulldog Health Scheme. This report is the findings of the scheme to date.

The French Bulldog Health Scheme is a valuable tool. The aim of the scheme is to enable breeders to make more informed choices in their selection of breeding stock, from the results and knowledge obtained from the tests set out within the scheme.

We want to encourage breeders and owners to health test, to educate breeders and owners in the need to avoid exaggeration of construction and to continue to improve the overall health of the breed.

Penny Rankine-Parsons
KC Breed Health Co-ordinator

French Bulldog Club of England Health Assessments

This summary report includes information from 2,151 health assessment forms, returned since 2010 as part of the French Bulldog Club of England (FBCE) health scheme. These forms can be completed by any vet, and currently covers examination of the ears, eyes, heart, breathing, nostrils, skin, patellas, spines, tails and temperament. Returning the form to the FBCE entitles the dog to a bronze health certificate, with further tests and requirements for achieving the silver and gold levels.

See <http://www.frenchbulldogclubofengland.org.uk/how-to-participate.html> for more information on the current health assessment form and grading instructions for vets.

Standard colours for French bulldogs, as defined by the Kennel Club, include brindle, brindle & white, dark brindle, fawn, fawn & white, fawn pied, fawn with black mask, light brindle, pied and white. All other colours are deemed 'colour not recognized by KC' (CNR).

See <https://www.thekennelclub.org.uk/services/public/breed/colours.aspx?id=4088> for further details.

Of the health assessment forms included in this report, 1,756 were returned with a KC standard colour recorded on the form. **Figure 1** shows a representation of the number of these forms returned each year. The number of forms returned increased every year until 2016, where 344 forms were returned to the FBCE. Since then, the number of forms returned for standard coloured dogs has levelled off, with 260 forms returned in 2017 and 282 forms returned in 2018. The number of forms for 2019 in **Figure 1** represents only a partial year.

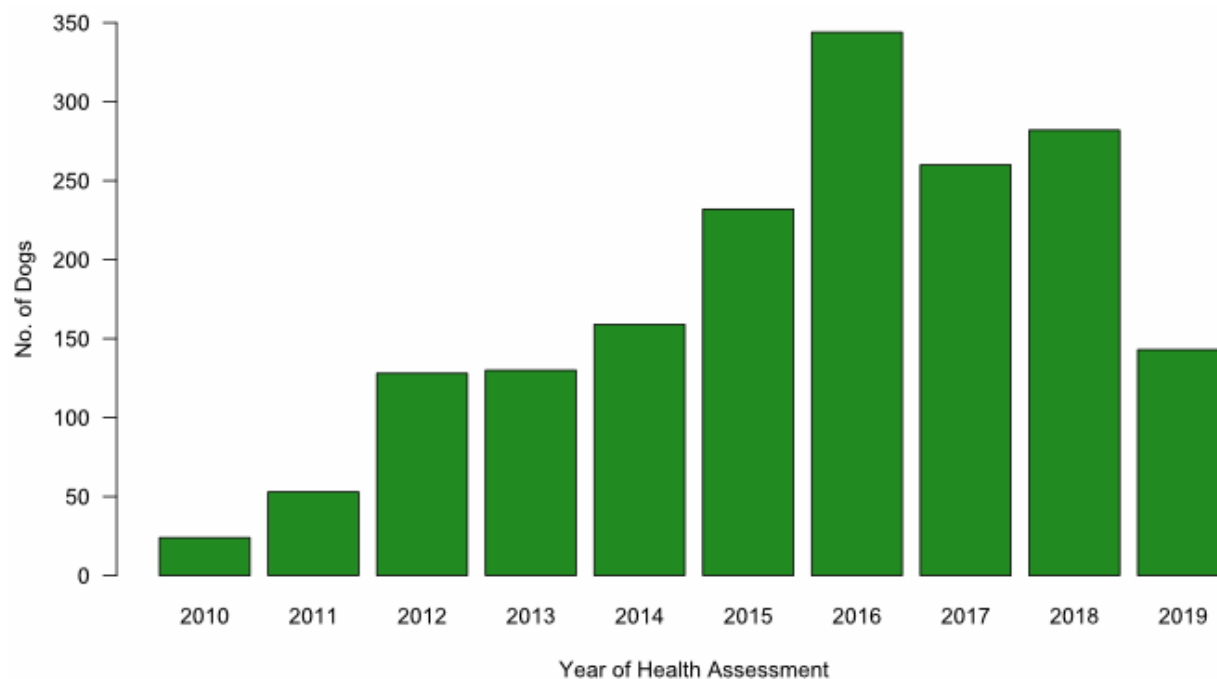


Figure 1 Health assessments returned per year to the FBCE, for French bulldogs reported as a standard colour. Numbers for 2019 cover only a partial year.

Health assessment forms have also been returned for 395 French bulldogs reported as a non-recognised colour. **Figure 2** shows a representation of the number of these forms returned each year. The number of forms returned increased each year, peaking in 2018 with 123 forms returned. Although 2019 only represents a partial year, these numbers are unlikely to increase in the future, as the FBCE no longer issues health scheme certificates for French bulldogs of unrecognised colour. This change occurred on 31st March 2019 (see <http://www.frenchbulldogclubofengland.org.uk/how-to-participate.html> for more information).

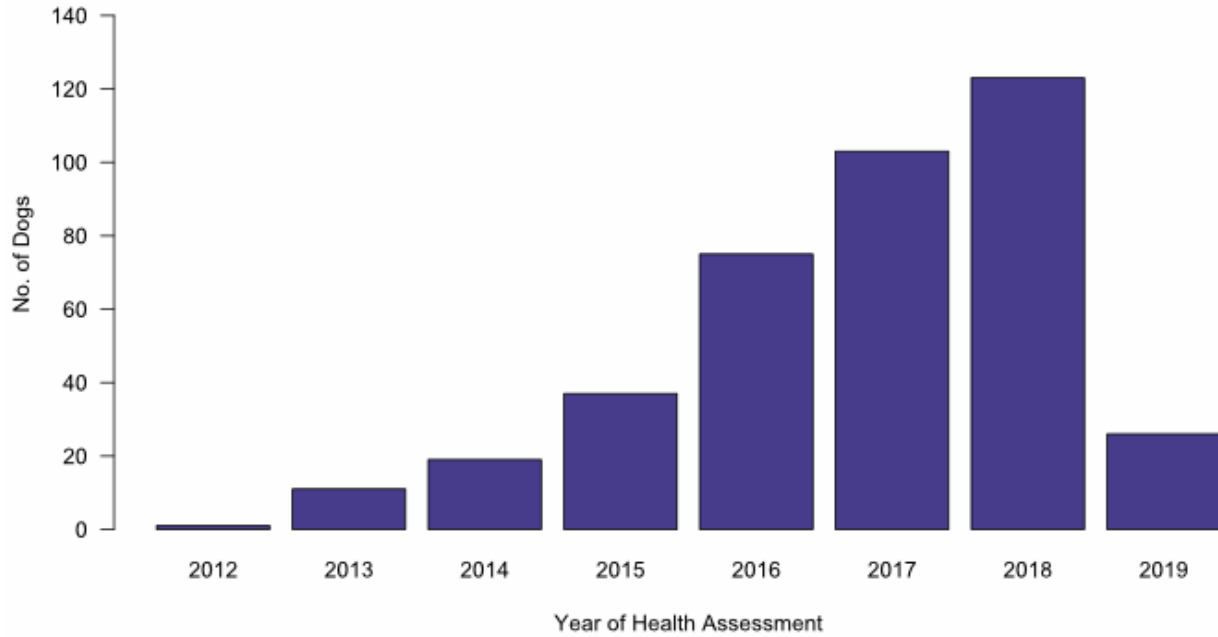


Figure 2 Health assessments returned per year to the FBCE for CNR French bulldogs. Numbers for 2019 cover only a partial year. From March 2019, CNR dogs will no longer have health assessment results recorded by the FBCE.

Demographics

Of the 1,756 standard colour French bulldogs with returned health assessment forms, one did not have a clearly recorded sex. Of the others, 75.4% were female and 24.6% were male (see **Figure 3**).

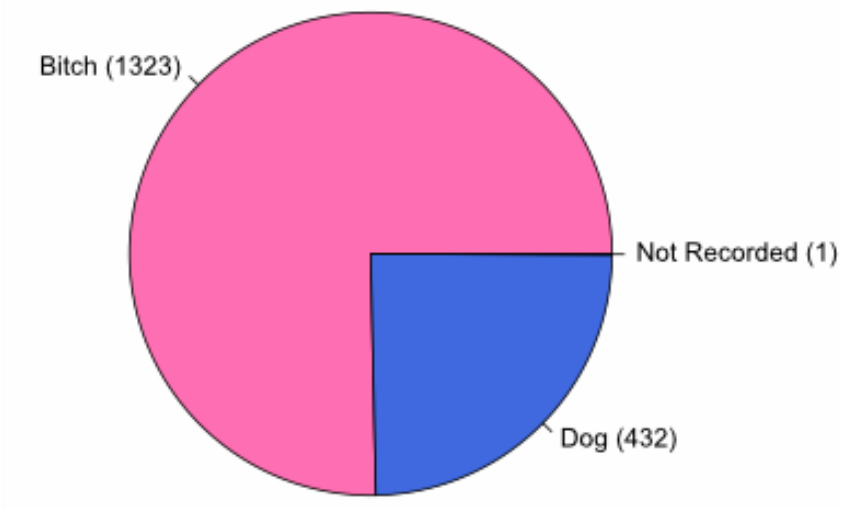


Figure 3 Sex breakdown for standard colour French bulldogs with returned health assessment forms.

The breakdown by sex for the CNR dogs is shown in **Figure 4**. Of the French bulldogs with recorded sex, 59.5% were female and 40.5% were male.

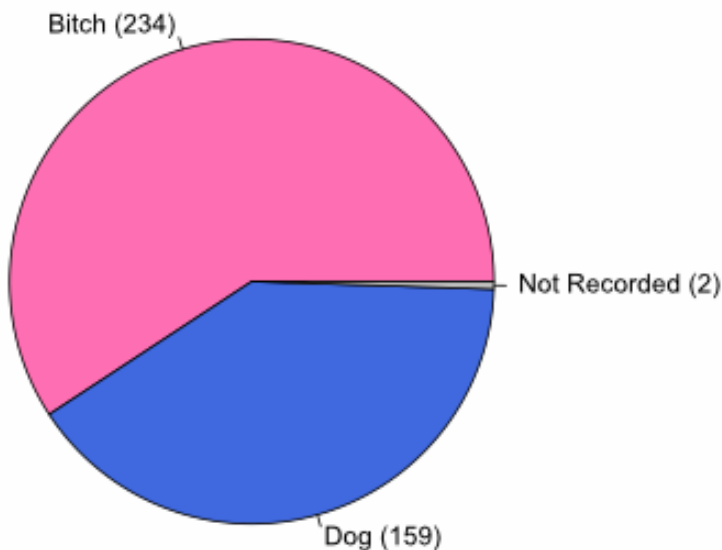


Figure 4 Sex breakdown for CNR French bulldogs with returned health assessment forms.

Most standard colour French bulldogs were assessed at the age of either one or two years, with these dogs forming 83.3% of the total (Figure 5). Three of the dogs were 7 years or over, which would be considered veteran dogs in KC show rings (see <https://www.thekennelclub.org.uk/activities/dog-showing/new-to-dog-showing/class-classification>)

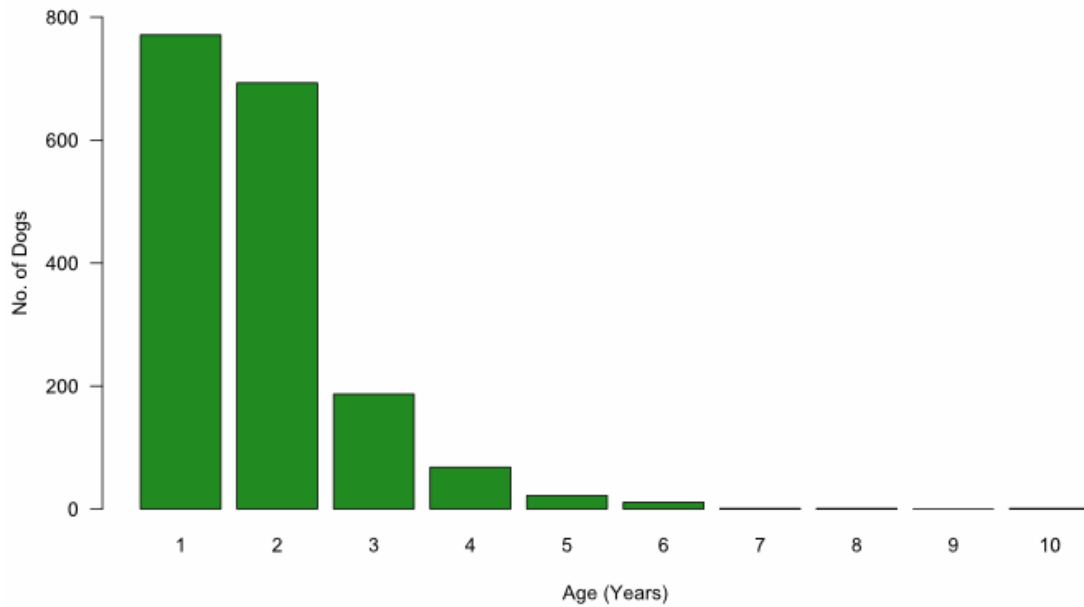


Figure 5 Age of standard colour French bulldogs when assessed (rounded down to the nearest year).

The majority (62.0%) of CNR French bulldogs were less than two years of age at the time of assessment, with another 29.4% less than three years (Figure 6). The oldest CNR French bulldog with a returned form was seven years.

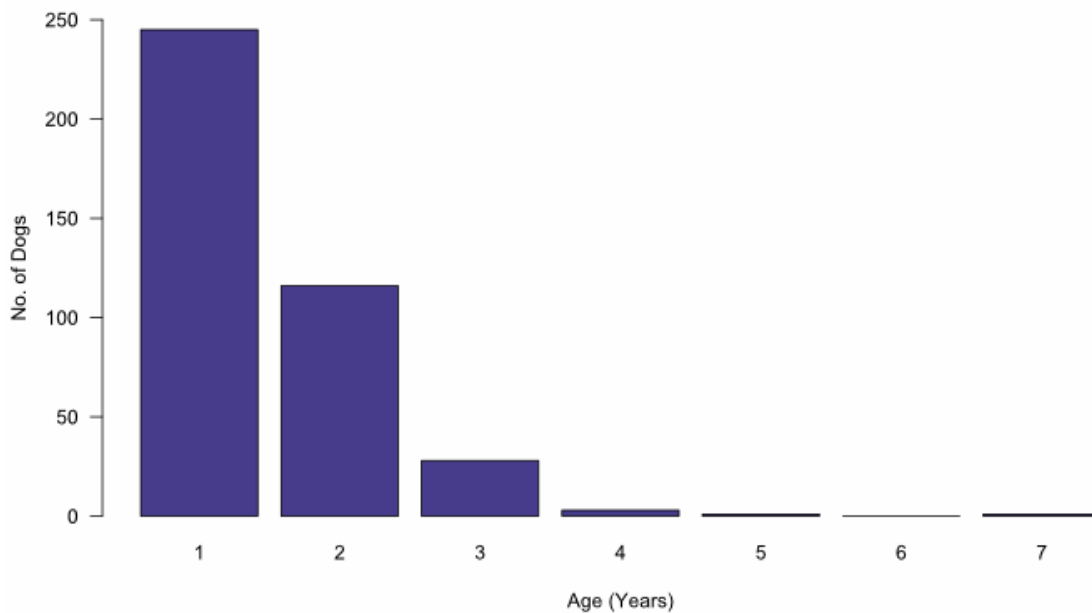


Figure 6 Age of CNR French bulldogs when assessed (rounded down to the nearest year).

Health Scheme Levels

The health scheme is divided into three levels: bronze, silver and gold. You must fulfil the requirements of all preceding levels before being awarded the next level. Health scheme requirements have changed over time, as knowledge of the issues in the breed and methods of testing have improved. The current requirements are as follows:

Bronze – return a completed health assessment form at age 1 year or over.

Silver – BOAS assessed grade 0/1; nostrils grade 1/2 (exceptions may be made if nostrils are grade 3 depending on vet’s comments); normal heart test; patella score 0/1; clear HC-HSF4 (hereditary cataracts) DNA test result; and clear or carrier DM (degenerative myelopathy) DNA test result.

Gold – over 2 years of age; BOAS grade 0/1 with the official KC Respiratory Function Grading Scheme; repeat normal heart test; and spinal x-ray with dorso-ventral and lateral views evaluated by a vet.

Of the 1,756 standard colour French bulldogs that achieved bronze by returning the completed health assessment form, 821 (46.8%) have also been awarded a silver health certificate. As the gold award is limited to dogs over two years of age, only dogs predicted to currently be over two years of age should be included in calculations. The current age of each dog was estimated using the formula:

$age \approx current\ year\ (2019) - year\ of\ health\ assessment + age\ in\ years\ at\ health\ assessment$

1,694 standard colour French bulldogs are estimated to be over two years of age in 2019 (**Figure 7**). Of these, 782 (46.2%) dogs have achieved the silver level, leaving them eligible to apply for gold. 115 standard colour dogs have achieved the gold level – 6.8% of the dogs estimated to be over two years of age and 14.7% of dogs who have achieved the silver level. Eight of these dogs achieved gold as defined in 2012/2013, nine dogs achieved gold as defined in 2013/2014, and six dogs achieved gold as defined in 2014/2015.

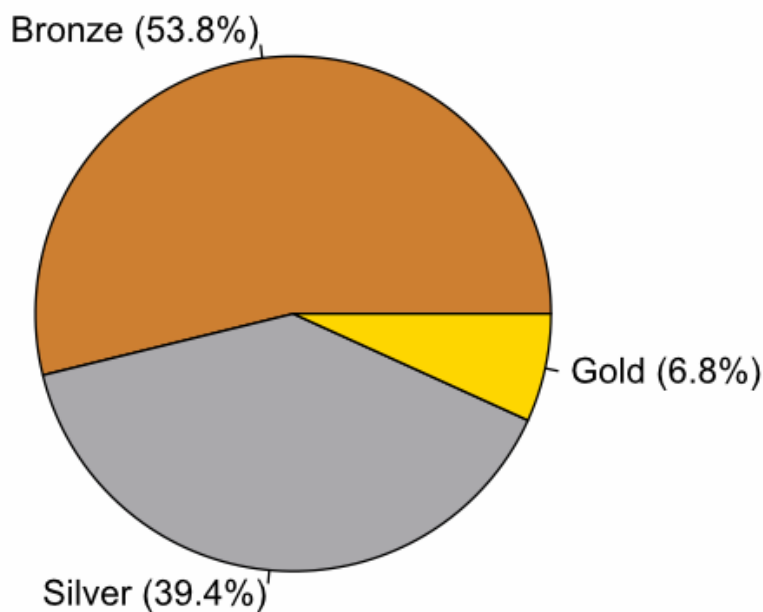


Figure 7 Level of health scheme achieved by standard colour French bulldogs, estimated to be over two years of age in 2019.

Of the 395 CNR French bulldogs that achieved bronze by returning the completed health assessment form, 204 (51.6%) have also been awarded a silver health certificate (**Figure 8**). 380 CNR French bulldogs are estimated to be over two years of age in 2019. Of these, 191 (50.3%) dogs have achieved the silver level, leaving them eligible to apply for gold. 13 CNR dogs have achieved the gold level – 3.4% of the dogs estimated to be over two years of age and 6.8% of dogs who have achieved the silver level.

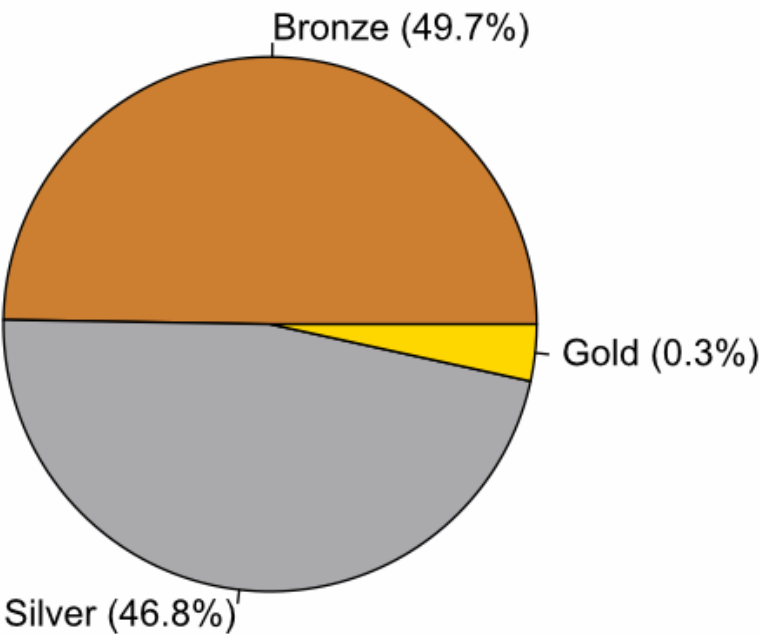


Figure 8 Level of health scheme achieved by CNR French bulldogs, estimated to be over two years of age in 2019.

Body Condition Score

Since 2015, vets have been asked to assess the condition of the examined French bulldogs via the body condition score (BCS). Dogs are assessed on a scale between 1 and 9, with a score of 4 or 5 usually considered ideal. Lower scores are considered underweight, whilst higher scores are considered overweight or obese.

See https://www.wsava.org/WSAVA/media/PDF_old/Body-condition-score-chart-dogs.pdf for a more detailed description.

Of those standard colour French bulldogs with a recorded BCS, the majority (87.5%) were scored at an ideal weight (either 4 or 5; **Figure 9**). 2.3% were scored as underweight and 10.0% were scored as overweight. Sixteen dogs were scored a 7 or above, which has been associated with an increased risk of brachycephalic obstructive airway syndrome (BOAS) in pugs and bulldogs, though not French bulldogs (<https://doi.org/10.1371/journal.pone.0181928>).

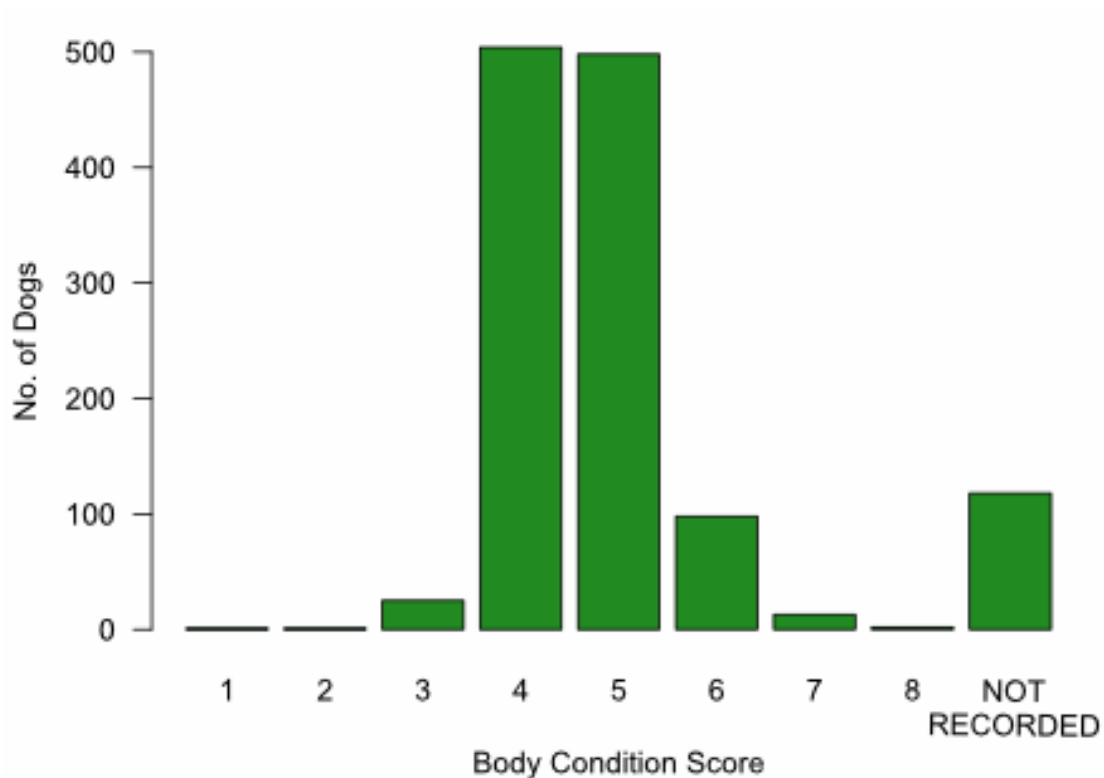


Figure 9 Body condition score of standard colour French bulldogs at time of assessment.

Of those CNR French bulldogs with a recorded BCS, the majority (88.8%) were scored at an ideal weight (either 4 or 5; **Figure 10**). 2.9% were scored as underweight and 8.3% were scored as overweight. Five dogs were scored a 7 or above.

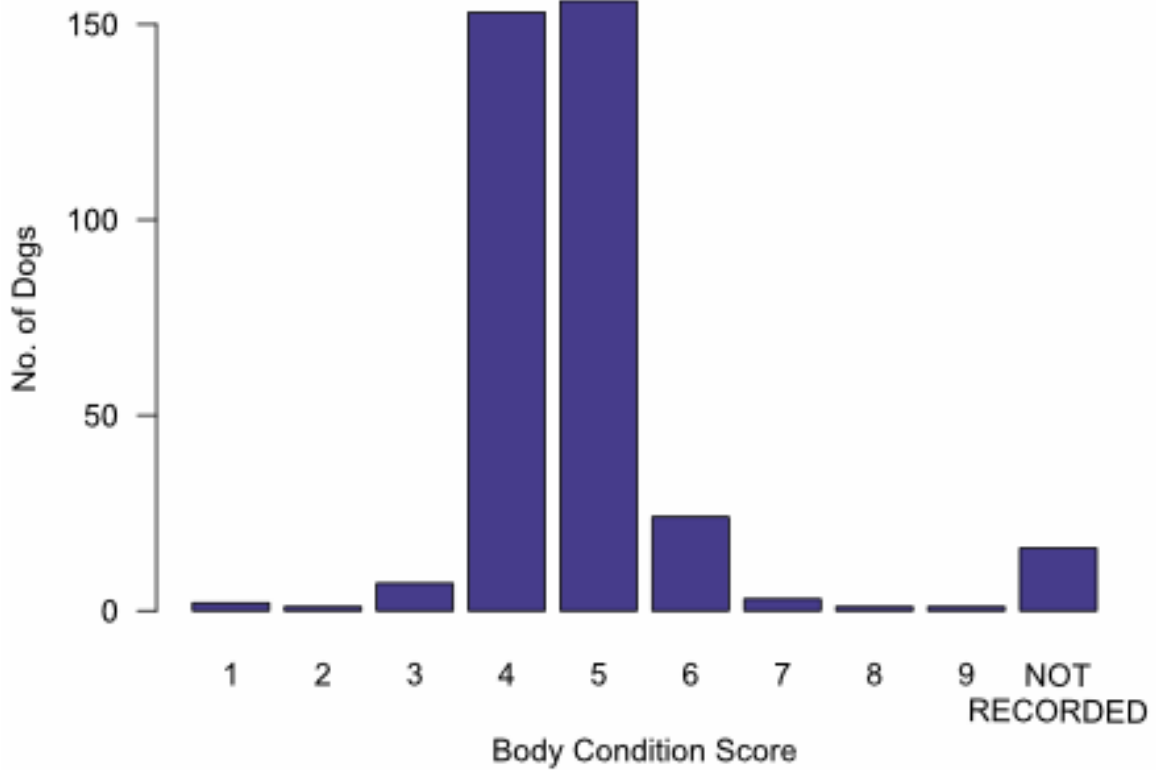


Figure 10 Body condition score of CNR French bulldogs at time of assessment.

Nostril Stenosis

The degree of nostril stenosis (how open or closed the nostrils are) has been associated with the risk of brachycephalic obstructive airway syndrome (BOAS) in French bulldogs (<https://doi.org/10.1371/journal.pone.0181928>).

Early assessment forms asked the vets to grade the dog's nostrils as either: open, slightly stenosed or stenosed. 573 standard colour French bulldogs were assessed under this scheme, achieving the results represented in **Figure 11**. 37.0% of dogs' nostrils were assessed as open, 53.2% as slightly stenosed and 9.8% as stenosed.

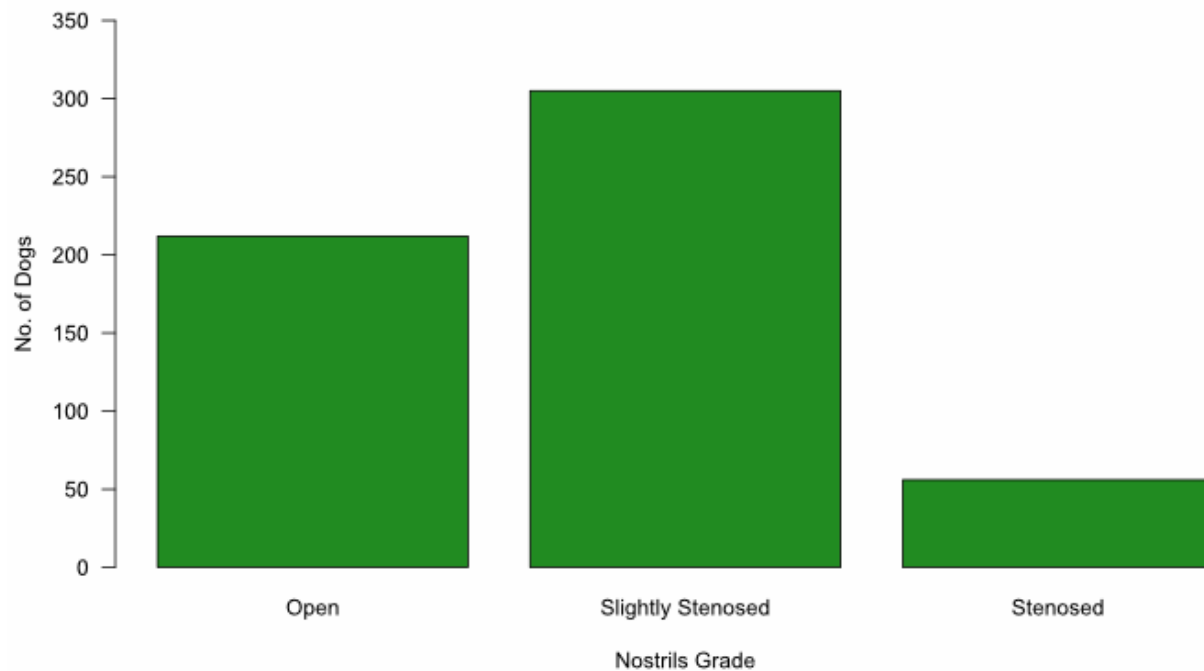


Figure 11 Nostril grading of standard colour French bulldogs from early assessment forms.

A nostril grading scheme was introduced in 2015, developed in collaboration with researchers at the University of Cambridge (see <https://www.vet.cam.ac.uk/boas> for more information). The most open nostrils are awarded a grade of 1, whilst the most stenosed/closed nostrils are graded as a 4. **Figure 12** shows the distribution of the new nostril grades for 1,173 standard colour French bulldogs. Just over half of these dogs were graded as a 2, sometimes described as mild stenosis. 24.5% of dogs had nostrils graded as either a 3 (moderate stenosis) or 4 (severe stenosis), which has been associated with an increased risk of BOAS (<https://doi.org/10.1371/journal.pone.0181928>).

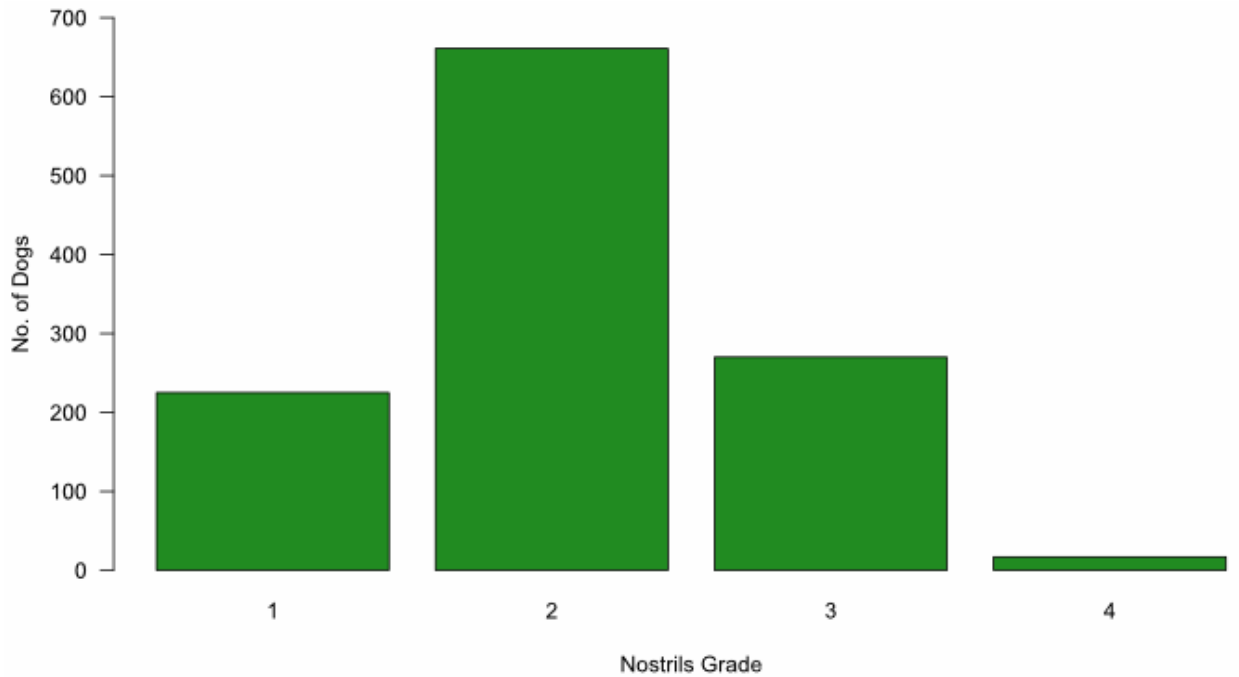


Figure 12 Nostril grading of standard colour French bulldogs, according to the University of Cambridge grading scheme.

Forty-four CNR French bulldogs were assessed under the old nostril grading system (Figure 13). 54.5% of dogs' nostrils were assessed as open, 40.9% as slightly stenosed and 4.5% as stenosed.

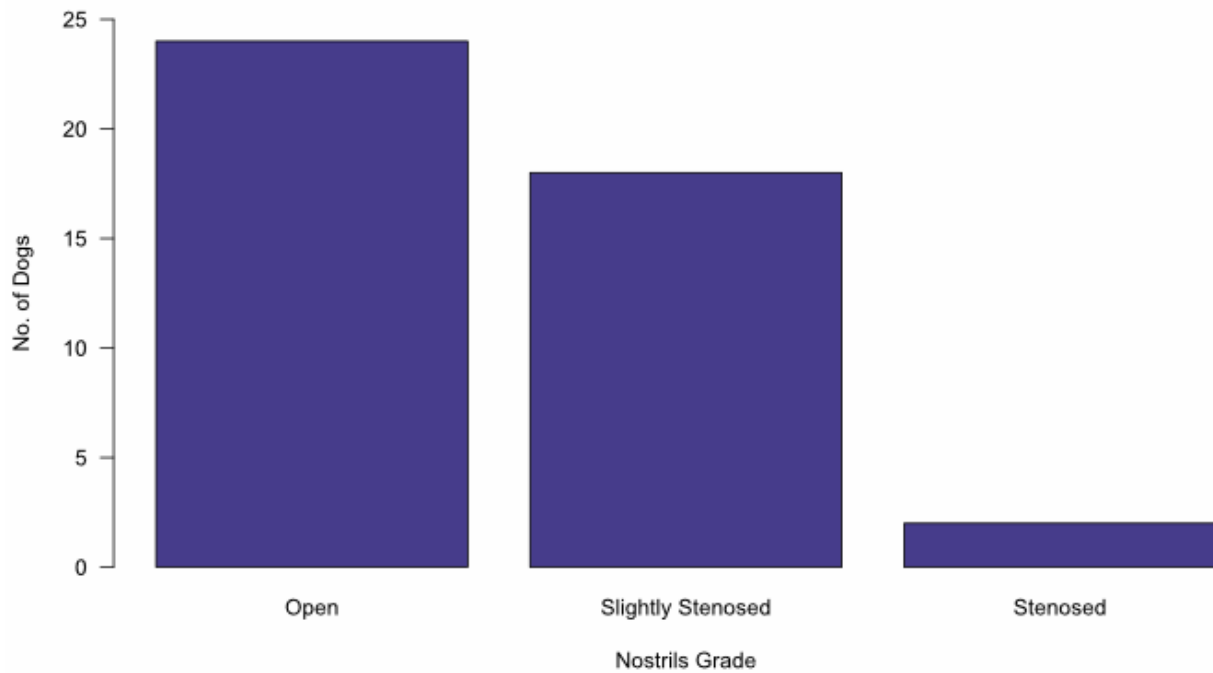


Figure 13 Nostril grading of CNR French bulldogs from early assessment forms.

Figure 14 shows the distribution of the new nostril grades for 351 CNR French bulldogs. Just over half of these dogs were graded as a 2, sometimes described as mild stenosis. 19.1% of dogs had nostrils graded as either a 3 (moderate stenosis) or 4 (severe stenosis).

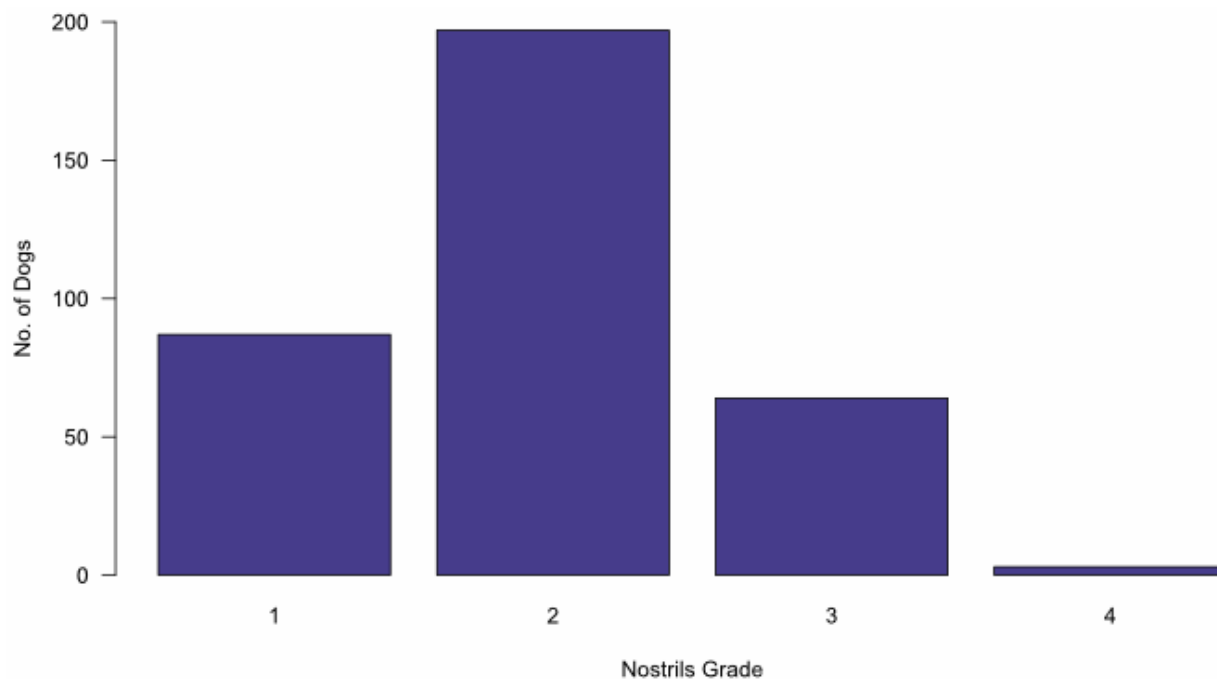


Figure 14 Nostril grading of CNR French bulldogs, according to the University of Cambridge grading scheme.

Breathing Assessment

One issue which has been identified in French bulldogs is brachycephalic obstructive airway syndrome (BOAS) – a respiratory syndrome identified in dogs with short muzzles. Therefore, the health assessment included assessment of each dog’s breathing.

In early assessments, the breathing of each dog was graded both pre- and post-exercise, as either very good (VG), good (G) or poor (P). **Figure 15** shows the breathing assessment results for 608 standard colour French bulldogs. Just over half of the assessed dogs were graded ‘good’ both pre- and post-exercise. The breathing of 9.5% of dogs deteriorated after exercise (either VG/G or G/P).

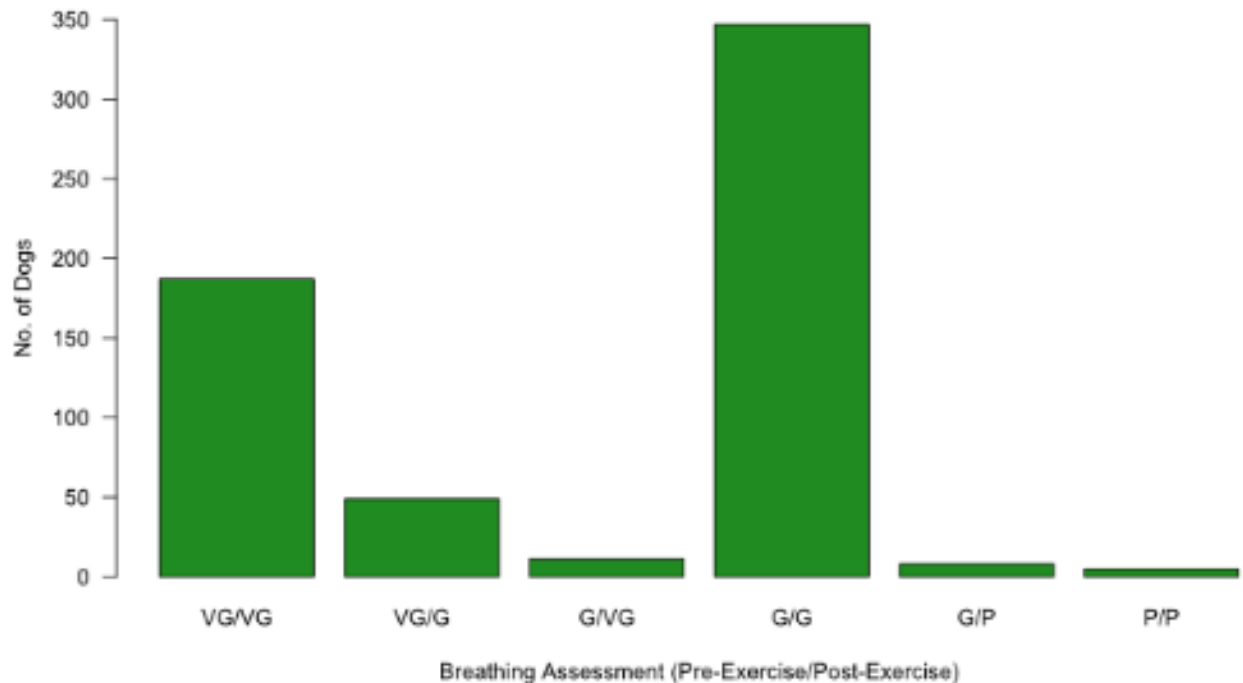


Figure 15 Breathing assessment of standard colour French bulldogs, pre- and post-exercise. VG = very good, G = good, P = poor.

A validated BOAS grading scheme was introduced in 2015, developed in collaboration with researchers at the University of Cambridge (see <https://www.vet.cam.ac.uk/boas> for more information). Dogs are awarded a grade between 0 and 3, dependent on respiratory assessment both pre- and post- a three-minute exercise session. Dogs unaffected with BOAS are awarded grade 0, whilst a grade 1 dog has mild symptoms, a grade 2 dog has moderate symptoms, and a grade 3 dog has severe symptoms of BOAS. As of 2019, this is now an official Kennel Club health scheme, known as the Respiratory Function Grading Scheme (see <https://www.thekennelclub.org.uk/rfgs> for further details).

Figure 16 shows the distribution of BOAS grades of 1,162 standard colour French bulldogs assessed by vets. Most dogs were graded 0 or 1, which is usually considered clinically unaffected. 93 dogs (8.0%) were graded a 2 or 3 – clinically affected.

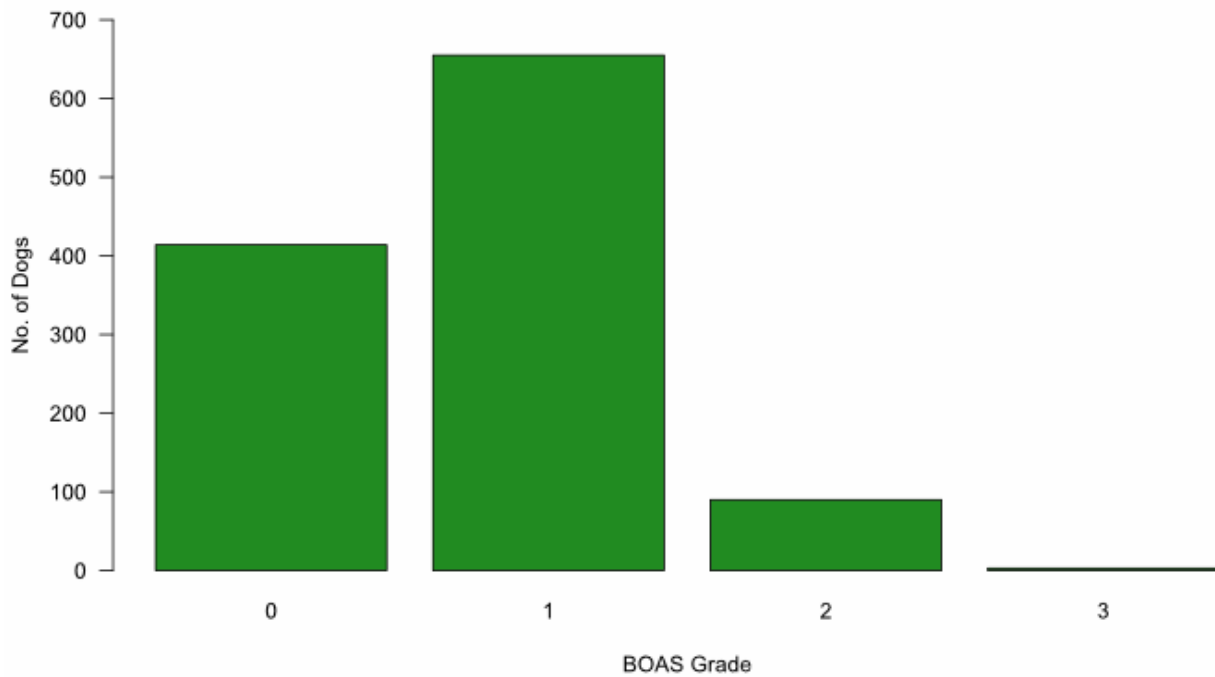


Figure 16 BOAS grading of standard colour French bulldogs, according to the University of Cambridge grading scheme.

Figure 17 shows the breathing assessment results for 46 CNR French bulldogs. No dog was graded poor either pre- or post-exercise. The breathing of 8.7% of dogs deteriorated after exercise (VG/G).

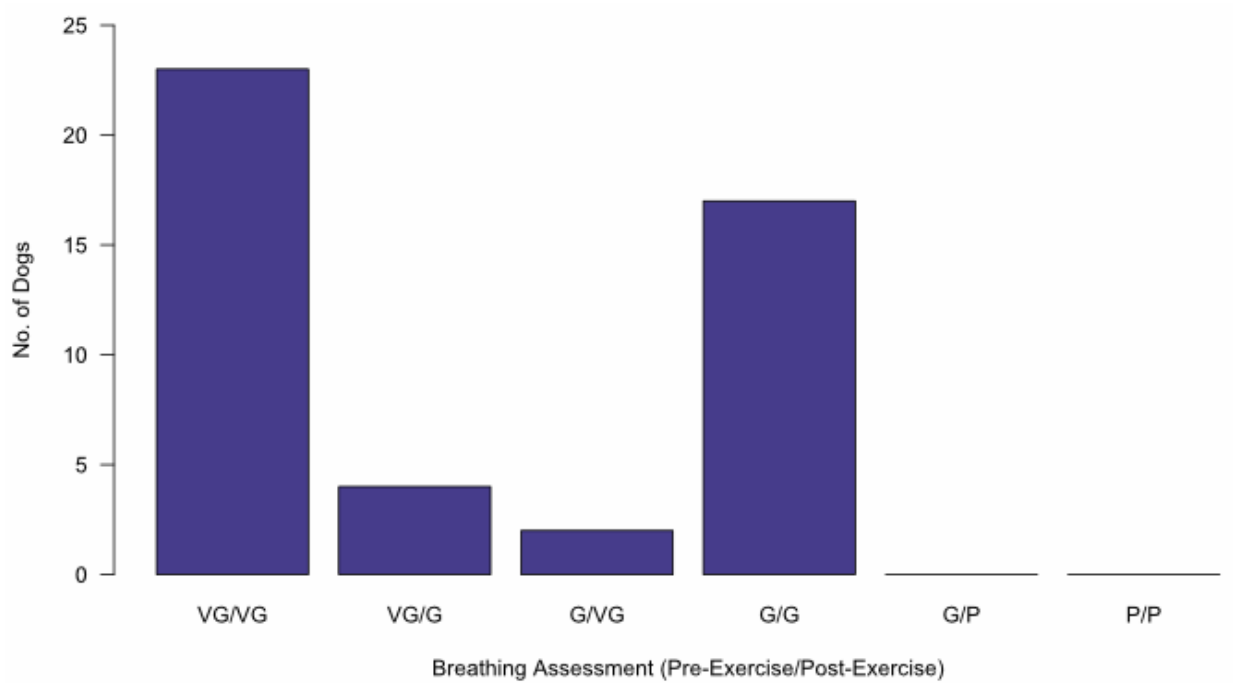


Figure 17 Breathing assessment of CNR French bulldogs, pre- and post-exercise. VG = very good, G = good, P = poor.

Figure 18 shows the distribution of BOAS grades of 347 CNR French bulldogs assessed by vets. Most dogs were graded 0 or 1, which is usually considered clinically unaffected. 37 dogs (10.7%) were graded a 2 or 3 – clinically affected.

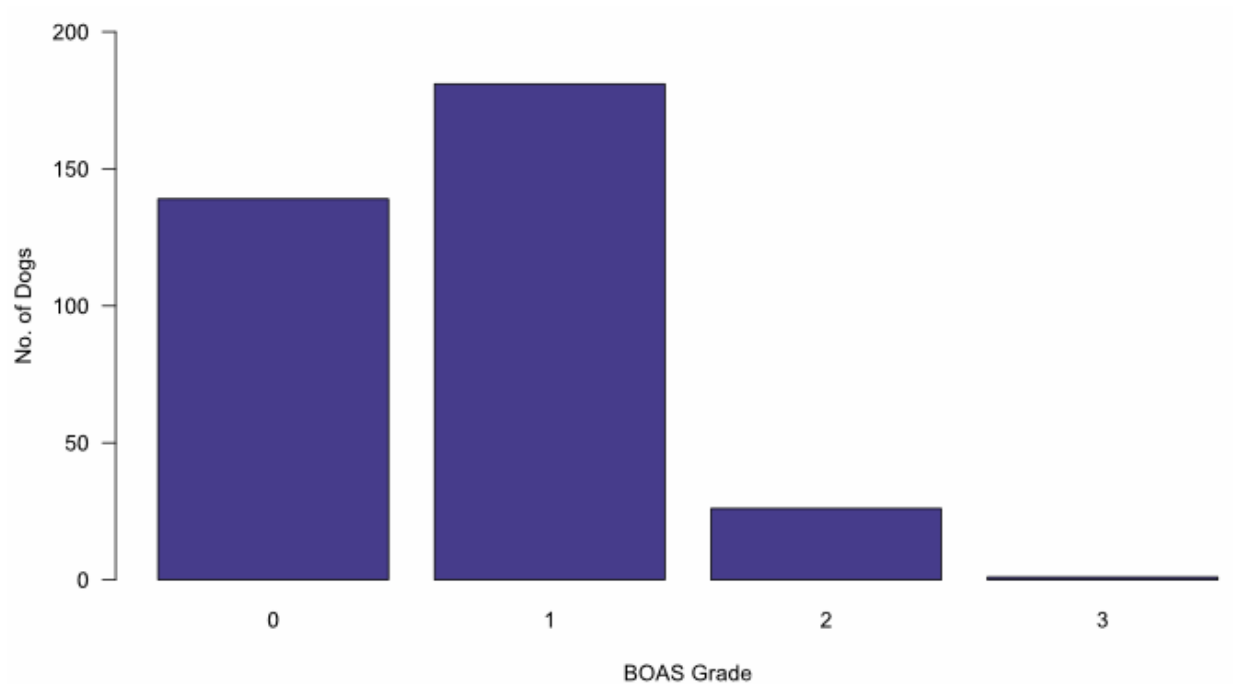


Figure 18 BOAS grading of CNR French bulldogs, according to the University of Cambridge grading scheme.

Patellar Luxation Grading

Luxating patella is a condition where the kneecap (patella) moves out of place, often observed in small dog breeds such as French bulldogs. The degree of luxation of each kneecap can be assessed using the Putnam grading system. Each patella is graded between 0 and 4, with grade 0 being no luxation and grade 4 being permanent luxation which cannot be repositioned.

See <https://www.vetortho.co.uk/patella-scoring-dog-ireland> for further information.

Figure 19 shows the patella grades for 1,755 standard colour French bulldogs – left/right knees. 77.5% of dogs were graded 0/0, meaning both kneecaps were normal. No dog had a patella graded as a 4, though six dogs had one or both knees graded as a 3, meaning spontaneous/permanent luxation which can be repositioned manually.

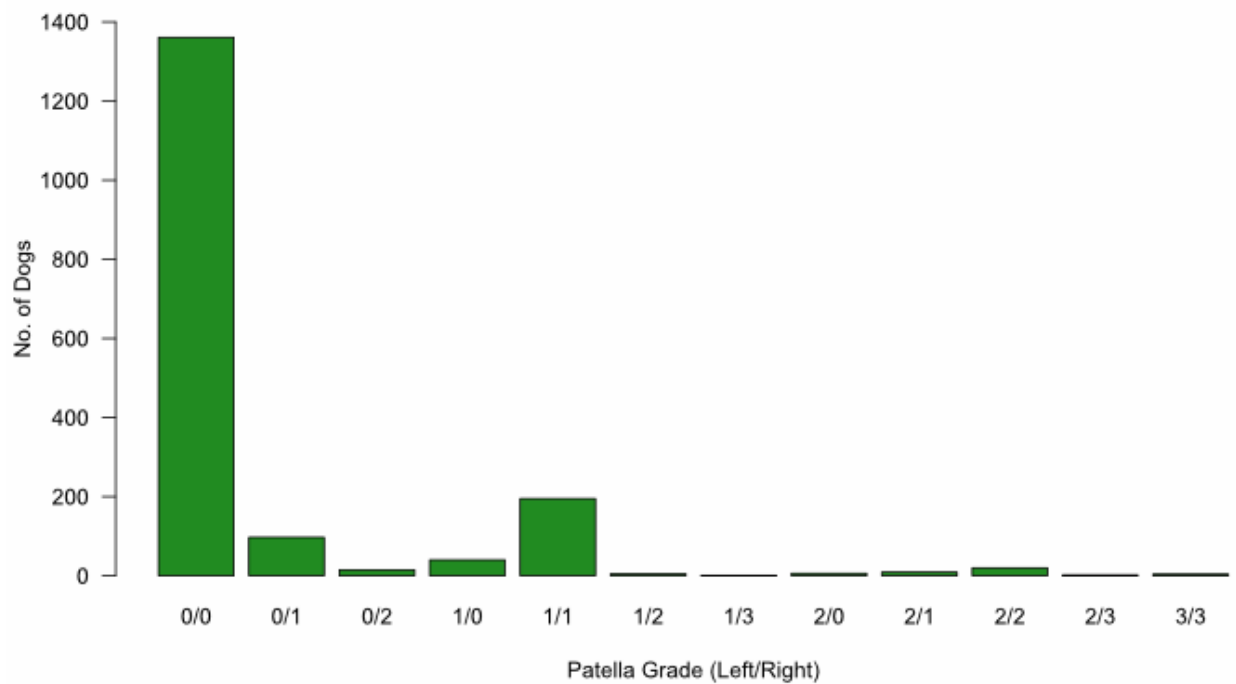


Figure 19 Patella grading in standard colour French bulldogs (left/right).

Figure 20 shows the patella grades for 395 CNR French bulldogs. 78.2% of dogs were graded 0/0, meaning both kneecaps were normal. No dog had a patella graded as a 4, though four dogs had one or both knees graded as a 3, meaning spontaneous/permanent luxation which can be repositioned manually.

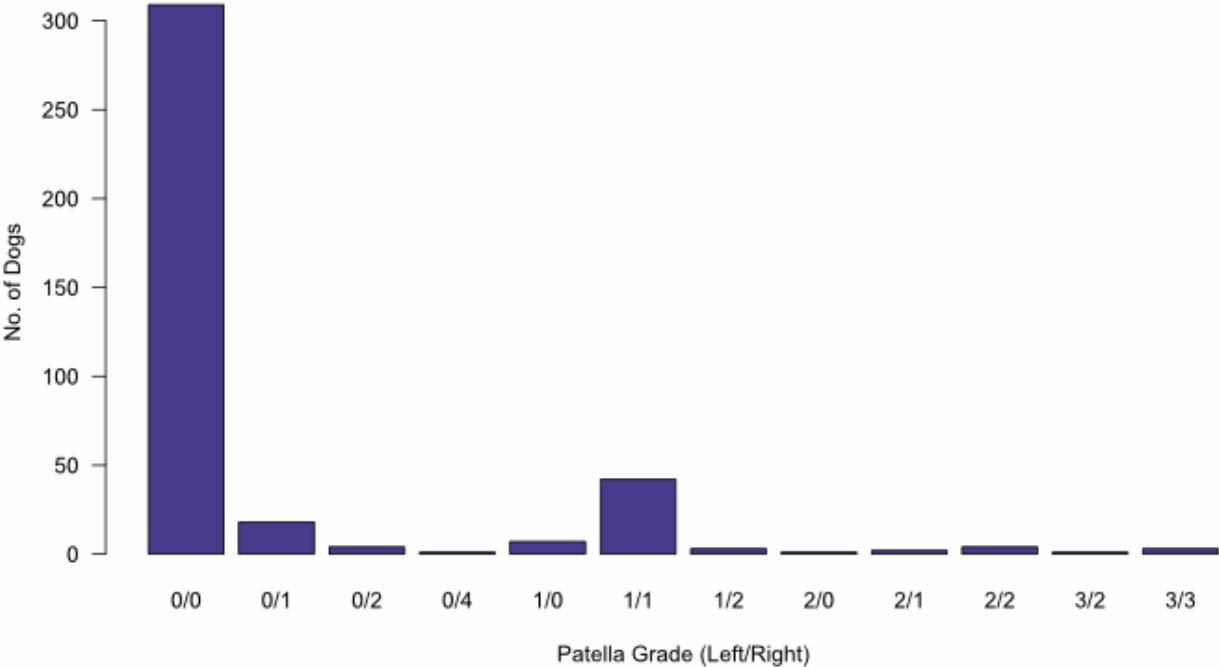


Figure 20 Patella grading in CNR French bulldogs (left/right).

Tails

The French bulldog tail is described in the Kennel Club breed standard as follows:

Undocked, short, set low, thick at root, tapering quickly towards tip, preferably straight, and long enough to cover anus. Never curling back nor carried gaily.

Additionally, two points of concern for special attention by judges mention the tail:

- (1) Lack of tail, screw tail, inverted tail and tight tail,
- (2) Screw tail.

The health assessment form asks the vet to assess the presence of the tail on the dog, whether it is inturned, and whether it is mobile.

Tail assessment results were recorded for 1,751 standard colour French bulldogs, with the results shown in **Figure 21**. A tail was not recorded as present in 14.5% of assessed dogs, with an inturned tail recorded in 0.2% of dogs.

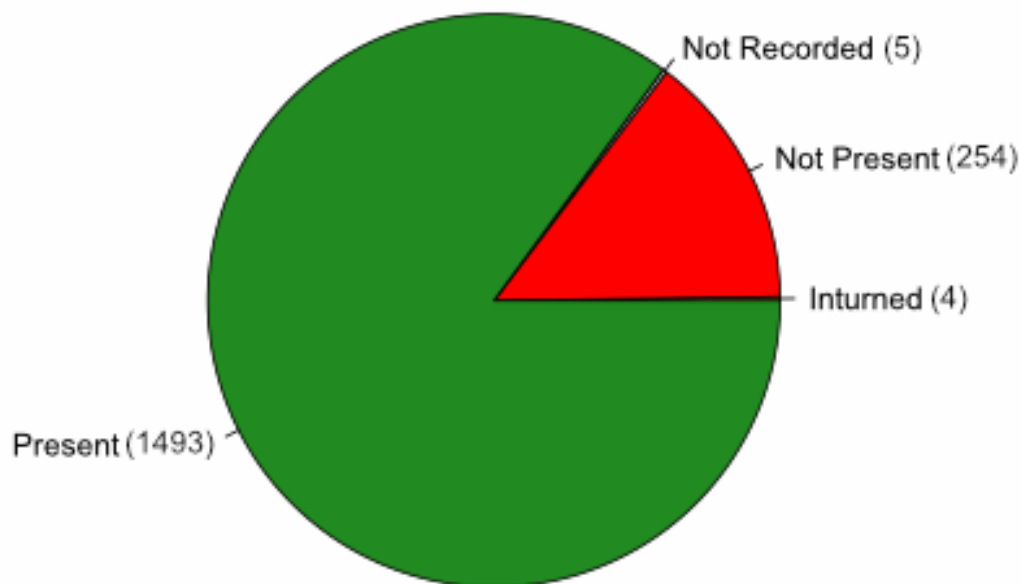


Figure 21 Tail assessment results for standard colour French bulldogs.

Tail assessment results were recorded for 394 CNR French bulldogs, with the results shown in **Figure 22**. A tail was not recorded as present in 9.9% of assessed dogs, with no dogs recorded with inturned tails.

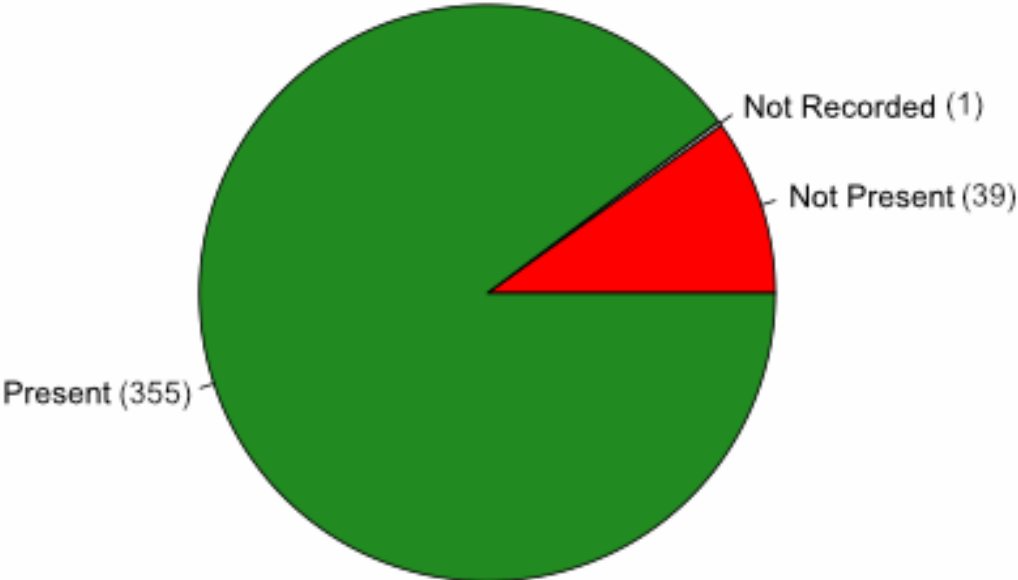


Figure 22 Tail assessment results for CNR French bulldogs.

Eye Health

The health assessment form asks the vet to assess each eye on the dog and note whether any of the following conditions are present: excessive tearing, eyes of unequal size, enlarged third eyelid, entropion, ectropion, dry eye, distichiasis, pannus and corneal scarring. Vets can also make additional notes which may include comments on eye health.

Information on eye health was included for 1,754 standard colour French bulldogs, with data missing for two dogs. 1593 (90.8%) of dogs had no recorded issues. **Table 1** shows the breakdown of issues recorded for the affected dogs, with the most common being excessive tearing and entropion. Seventeen dogs had multiple issues identified. Additionally, one dog had a vet note indicating a 'lost eye'.

Table 1 Frequency of noted eye issues in standard colour French bulldogs.

Observation	Count
Excessive tearing	77
Entropion	42
Eyes of unequal size	20
Distichiasis	17
Ectropion	11
Enlarged third eyelid	6
Corneal scarring	4
Dry eye	1
Pannus	0

Information on eye health was included for 395 CNR French bulldogs. 343 (86.8%) of dogs had no recorded issues. **Table 2** shows the breakdown of issues recorded for the affected dogs, with the most common being excessive tearing and entropion. Nine dogs had multiple issues identified.

Table 2 Frequency of noted eye issues in CNR French bulldogs.

Observation	Count
Excessive tearing	30
Entropion	15
Eyes of unequal size	7
Enlarged third eyelid	5
Distichiasis	3
Corneal scarring	2
Dry eye	1
Ectropion	0
Pannus	0

Ears and Hearing

The health assessment form asks the vet to assess the degree of stenosis of the ear canals, and record whether the ear is open, narrow or closed. The hearing of the dog should also be established, and BAER (brainstem auditory evoked response tests can be recommended to further test the hearing of the dog.

Ear stenosis assessment was recorded for 1750 standard colour French bulldogs. 1,668 (95.3%) of the assessed dogs had both ears assessed as open. **Table 3** shows the frequency of the ear stenosis assessments for the remaining dogs.

Table 3 Frequency of ear stenosis in standard colour French bulldogs.

Assessment	Count
One ear narrow, one ear open	35
Both ears narrow	44
Both ears closed	2
One ear open, one ear closed	1

Hearing was established for 1,715 standard colour French bulldogs and not established for 38 dogs, with no results recorded for three dogs. BAER testing was not recommended for any of the dogs.

Ear stenosis assessment was recorded for 394 CNR French bulldogs. 369 (93.7%) of the assessed dogs had both ears assessed as open. **Table 4** shows the frequency of the ear stenosis assessments for the remaining dogs.

Table 4 Frequency of ear stenosis in CNR French bulldogs.

Assessment	Count
One ear narrow, one ear open	12
Both ears narrow	12
One ear open, one ear narrow	1

Hearing was established for 383 CNR French bulldogs and not established for 7 dogs, with no results recorded for four dogs. BAER testing was recommended for one dog.

Heart Health

The health assessment form asks the vet to assess the heart on auscultation (listening to the heart using a stethoscope) and record whether the heart sounds normal, as well as any other comments.

Heart auscultation results were recorded for 1,754 standard colour French bulldogs. 1746 (99.5%) had a normal heart examination result. **Table 5** shows the frequency of the recorded heart abnormalities.

Table 5 Frequency of heart abnormalities in standard colour French bulldogs.

Abnormality	Count
Grade one heart murmur	3
Sinus arrhythmia	2
Grade three heart murmur	1

Heart auscultation results were recorded for 395 CNR French bulldogs. 391 (99.0%) had a normal heart examination result. **Table 6** shows the frequency of the recorded heart abnormalities.

Table 6 Frequency of heart abnormalities in CNR French bulldogs.

Abnormality	Count
Grade one heart murmur	3
Ungraded heart murmur	1

Skin Health

The health assessment form asks the vet to assess whether the skin is 'good' (i.e. healthy), whether there are any inflamed areas, and whether there is any hair loss/bald patches. Vets can also make additional notes which may include comments on skin health.

Skin assessment results were recorded for 1,746 standard colour French bulldogs. 1,727 (98.9%) were recorded with good skin. **Table 7** shows the frequency of the recorded skin problems.

Table 7 Frequency of recorded skin problems in standard colour French bulldogs.

Problem	Count
Inflamed areas	13
Skin not good	4
Interdigital dermatitis	1
Seasonal alopecia	1

Skin assessment results were recorded for 395 CNR French bulldogs. 386 (97.7%) were recorded with good skin. **Table 8** shows the frequency of the recorded skin problems.

Table 8 Frequency of recorded skin problems in CNR French bulldogs.

Problem	Count
Inflamed areas	3
Skin not good	2
Atopy	2
Early skin disease	1
Seasonal allergies	1

Additional Notes

Vets can record additional notes on the dog's health on the assessment form. Some of these have been included in the appropriate health related sections above. **Table 9** includes the remaining comments.

Table 9 Additional notes made by vets on health assessment forms.

Notes	Count	Coat Colour
Nostril surgery	3	Two standard, one CNR
Upper respiratory tract noise	3	Two standard, one CNR
Soft palate affecting breathing	2	Standard
Bilateral carpal valgus	1	Standard
Excess panting after exercise; reluctance to nose breath; some airway noise	1	Standard
Extra teeth	1	Standard
Increased breathing noise not unusual for breed	1	Standard
Mild noisy breathing	1	Standard
Mild upper respiratory noise	1	Standard
Noisy	1	Standard
Possible block vertebra	1	Standard
Slightly noisy breathing on exercise	1	Standard
Open mouth breathing at rest and worse on exercise	1	Standard
Soft palate surgery; cruciate repair surgery	1	Standard
Some noise after exercise	1	Standard
Some respiratory noise	1	Standard
Excellent – one of the best I've ever seen	1	Standard
Some chaffing from harness	1	Standard
Stressed; breathing not assessed	1	Standard
Very excited	1	Standard

Methods

Data was collected from the French Bulldog Club of England health assessment forms, returned as part of the FBCE health scheme. Data was then cleaned in Microsoft Excel and data visualisations produced using RStudio.

See <http://www.frenchbulldogclubofengland.org.uk/uploads/1/5/9/2/15927418/newformfeb2019.pdf> for the current health assessment form.

Data collection and cleaning carried out by Penny Rankine-Parsons (Kennel Club Breed Health Co-ordinator for the French bulldog).

Further data cleaning, visualisation and report writing carried out by Cassandra Smith.

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