



Analysis Of Injury Patterns In UK Greyhound Racing Relevant To The Pre-race Examination

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Introduction

- One of the key issues every track vet faces is the limited time (30-40 seconds) available to examine each dog.
- It is therefore vital to maximise the efficiency of each exam so that dogs with a high risk of injury are identified and removed.

Aims

- Gain an understanding of examination techniques used in the pre-race examination by producing a survey aimed at track veterinarians.
- Compare pre-race withdrawal data and post-race injury data to identify any potential areas for improvement or areas that are currently being examined well.

Data sources

- Literature review
 - Highlighted the injuries greyhounds were receiving as well as the main clinical signs associated with these injuries.
 - Provided ideas for examination techniques
- Survey aimed at track veterinarians
 - Produced on survey monkey
 - Helped determine the methods and frequency at which different injuries are examined for.
 - The survey was attempted by 15 vets and completed by 9.
 - The low number of replies makes it difficult to be certain that the whole track vet community is doing this and the results are not effected by bias.
- Pre-race examination withdrawal data
 - Helped identify injuries resulting in withdrawal and some clinical signs they presented with
 - 532 dogs with 566 injuries were included
- Post-race withdrawal data 2005 - 2016
 - Helped identify injuries sustained during racing as well as some of the clinical signs presented
 - 4209 dogs with a total of 4530 injuries were included

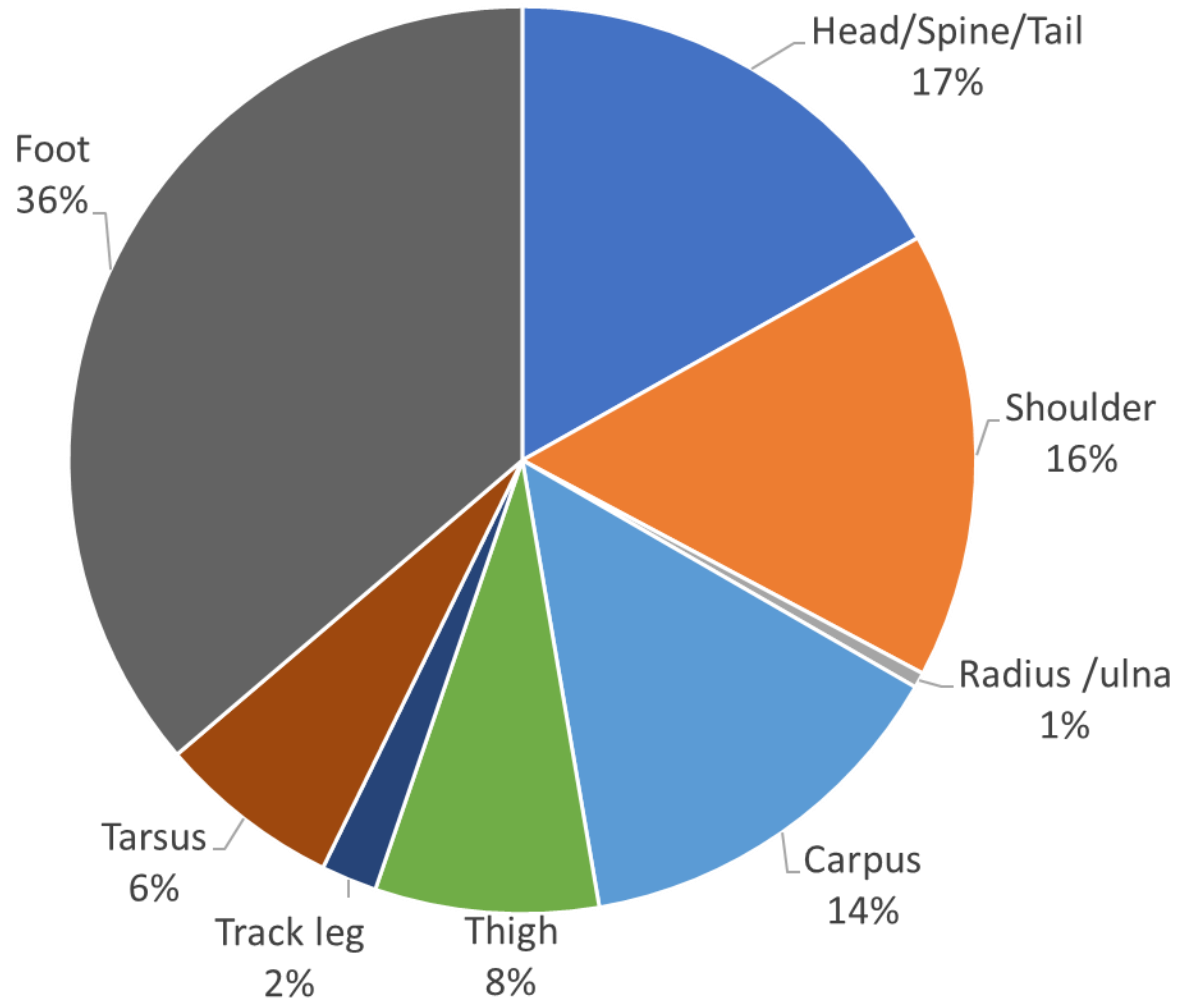
Method

Using these data sources, the following was attempted:

- Determine which injuries commonly occur and need targeting
- Determine which methods were currently being used
- Determine how effective these methods were

Results were obtained by comparing the four data sources

Reasons for withdrawal



Main areas affected

- Foot

- Feet were one of the most commonly affected areas, accounting for 36% of the withdrawals
- This included injuries such as cuts, infections and split webs
- The survey found 6/9 vets were visual inspecting each digit, whilst 3 were manipulated the digits.
- Considering the high percentage of these injuries being found, it would suggest these areas are being examined well.

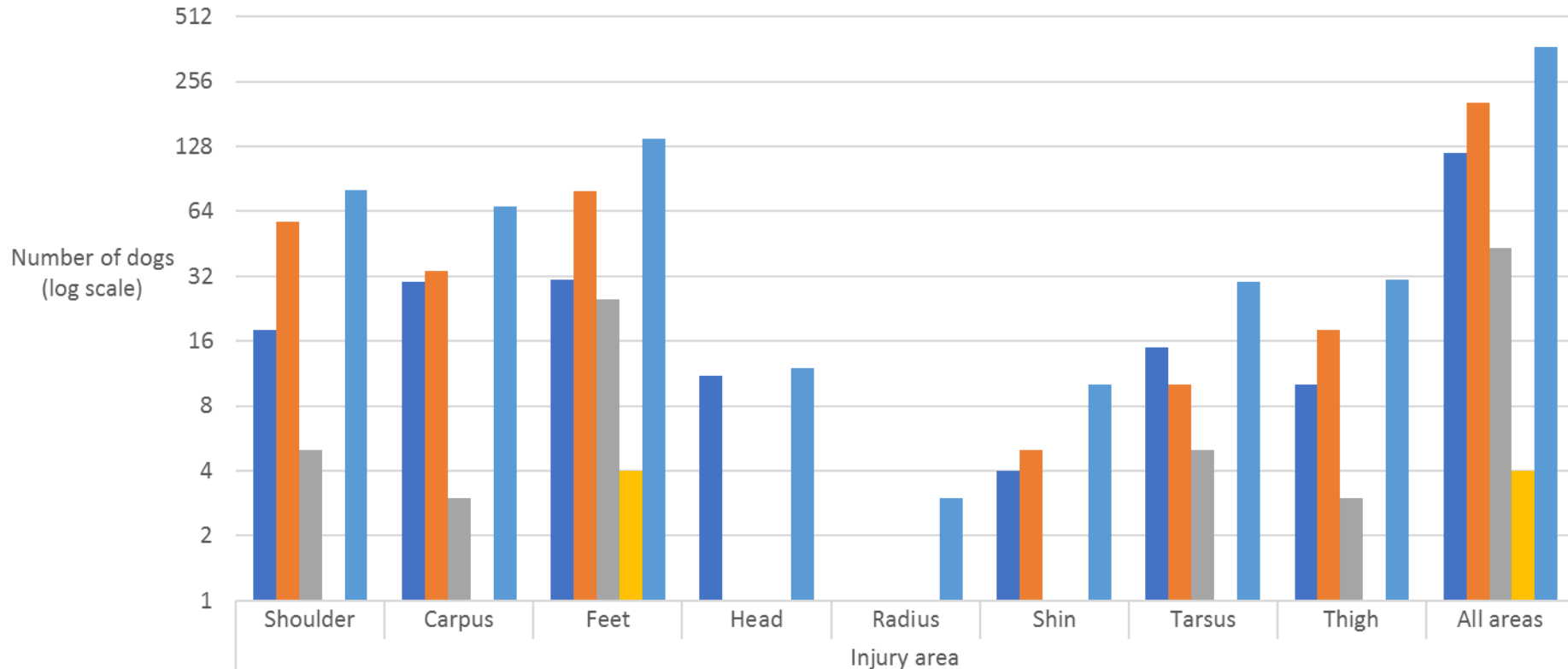
Main areas affected

- Shoulder
 - Shoulder injuries resulted in 16% of withdrawals, the majority of were related to triceps pain.
 - Whilst everyone in the survey manipulated the shoulder which may highlight triceps pain, only 6/11 vets regularly assessed the triceps for pain
 - The high percentage of these injuries being found could indicate two things, either its a common site of injury and/or it is being examined well

Gait analysis



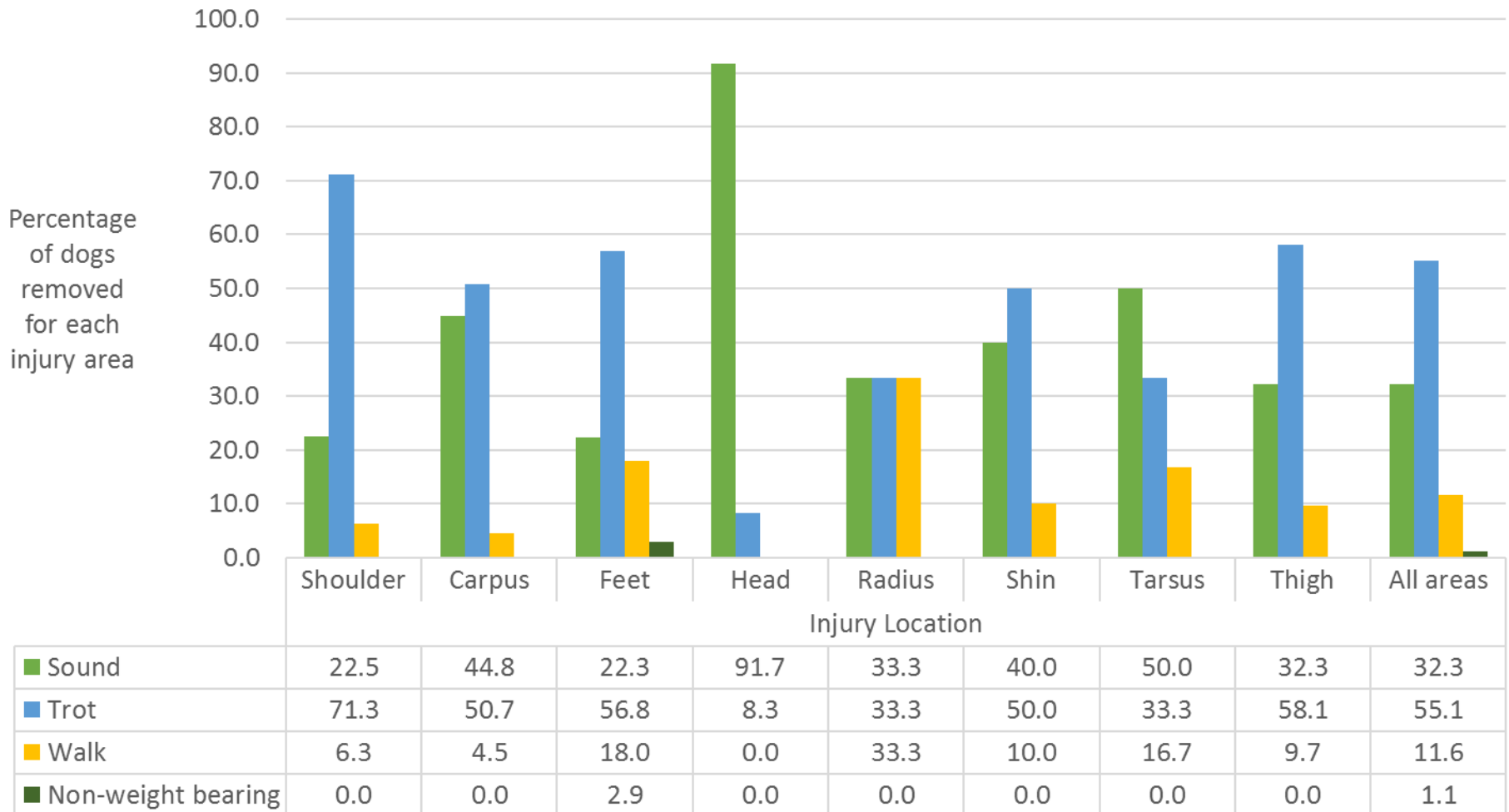
Graph showing the variation in lameness presented by greyhounds for each anatomical injury area during the pre-race examination



	Shoulder	Carpus	Feet	Head	Radius	Shin	Tarsus	Thigh	All areas
Sound	18	30	31	11	1	4	15	10	120
Trot	57	34	79	1	1	5	10	18	205
Walk	5	3	25	0	1	1	5	3	43
Non-weight bearing	0	0	4	0	0	0	0	0	4
Total	80	67	139	12	3	10	30	31	372

Gait analysis

Graph showing the percentage of greyhounds presenting with different levels of lameness pre-race in each injury area



Gait analysis

- 67.7% of the injuries showed signs of lameness at trot, walk or as non-weight bearing. Gait analysis can therefore be seen as a key component of the examination.
- However, 32.3% of injuries were not found with gait analysis so other techniques must also be applied to find these injuries.
- Most dogs presented at trot (55% of all dogs), suggesting that trotting is more important than walking. It was therefore positive to see 12/14 vets are currently doing this.
- Considering the lower levels of signs seen at trot compared to walk, it could also suggest more subclinical injuries are being found in the prerace examination.

Fractures

- Common sites of fractures:
 1. Tarsus
 2. Carpus
 3. Digits
 4. Radius/ulna
- Stress fractures can occur (Gannon, 1972)
- Potential techniques for identification of stress fractures (Boemo, 1998):
 - Identifying lameness
 - Palpation for pain
 - Joint manipulation

Stress fracture identification



- Lameness
 - May not be present at a prerace examination.
 - Bomeo found it was only present for 3 days after racing.
- Manipulation
 - most vets are already manipulating joints.
- Palpation
 - High risk areas are not always being palpated, for example, 6/13 vets regularly check the accessory carpal bone.
 - The addition of palpation to high risk areas such as the central and fibular tarsal bone may be more relevant.

Shoulder/hip



Shoulder injuries

Symptom	Before	After
Not recorded	14	79
Flexion pain	2	8
Rotation pain	1	4
Swelling and haemorrhage		3
Extension pain	7	79
Overall	24	173

Hip injuries

Symptom	Before	After
Not recorded	5	14
Flexion Pain	0	2
Torn	1	3
Extension pain	5	34
Pressure Pain	2	17
Total	13	70

Track veterinarian shoulder examination

Response rate = 13

Answer Option	Response Count
Flexion	10
Extension	12
Rotation	4
Adduction	1
Abduction	1
Other	2

Track veterinarian hip examination

Response rate = 9

Answer Option	Response Count
Flexion	8
Extension	6
Rotation	2
Adduction	1
Abduction	3
Other	2

Shoulder / hip

- Shoulder and the hip are two areas which are commonly manipulated using both flexion and extension.
- In the shoulder, 10/13 vets flex the shoulder and 12/13 extended the shoulder. However many more injuries are found on extension pain then flexion pain suggesting that it is more important to extend the shoulder.
- In the hip, 6/9 vets extended the hip and even more vets (8/9) flex the hip. Again extension pain was found in many more injuries then flexion.
- By extending more then flexing both of these areas, more injuries could be identified during the pre race examination. Similarly, by extending only, it could allow further time to be spent on other areas of the examination.

Summary

- Main injuries that need withdrawal are chronic, subclinical injuries.
- Need a high level of detail in the examination:
 - Trot rather than walk.
 - Palpation is important.
- More research needed in how to identify subclinical injuries.
- More important to extend the shoulder and hip then flex.

Acknowledgements

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References

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