

Analysis of Greyhound Racing Injuries

1 July - 30 September 2018

Overview

This report is prepared by the Chief Veterinary Officer of the Greyhound Welfare and Integrity Commission and summarises greyhound injuries and fatalities that occurred at race meetings in New South Wales during the period 1 July - 30 September 2018. The information is compiled based on race data from OzChase and race injury data recorded by the Commission's On Track Veterinarians (OTVs).

The Greyhound Welfare and Integrity Commission assumed regulatory functions in relation to greyhound racing on 1 July 2018. The period 1 July - 30 September 2018 thus provides the first full quarter of data available following transfer of functions. During the quarter the Commission supervised 328 greyhound race meetings, with a total of 3,120 races run, and 22,871 greyhound starts. A total of 4,200 individual greyhounds started in races over this period, with an average 5.4 starts for each greyhound.

The Commission's On-Track Veterinarians attend all race meetings, and in this quarter conducted 1,275 post-race examinations of greyhounds from which 53% (675 greyhounds) were found to have injuries¹. No injury was detected in the remaining 47% (600 greyhounds) which were examined by OTVs.

Reasons for veterinary examination included: Stewards' request due to sub-optimal performance; a racing incident (race collision or marring); a race fall; failure to finish a race; examination at trainer's request; and OTV-initiated.

All greyhounds injured at the race track receive immediate veterinary treatment from the OTVs present at all tracks. OTVs may also direct trainers to seek follow-up treatment for a greyhound from a private veterinarian.

There are many causes of injuries in racing greyhounds. Causative factors can be divided into:

1. Greyhound factors: genetics, nutrition, physical growth and development, fitness, race preparation and previous injury history;
2. Track Factors: design and surface characteristics;
3. Race factors: race distance, racing incidents and number of greyhounds in a race.

¹ Where an individual greyhound sustains injuries in more than one injury category, only the highest category is used in reporting.

Injury classification

Injuries are classified according to the number of days 'incapacitation' or stand-down from racing required to recover from the injury diagnosed at the time of examination. This provides an indication of the severity of an injury. The injury classification used by the On Track Veterinarians is detailed in Table 1.

Table 1: Injury classification and examples of injuries

Injury category	Incapacitation period (days)	Example of injury
Minor I	0	No stand down needed: torn nail or minor abrasion or spike.
Minor II	1-10	Minor cuts, abrasions, pad injuries, Grade 1 muscle injuries requiring treatment.
Medium	14-21	Moderate cuts and pad/toe injuries, joint sprains, ligament or tendon injuries, Grade 2 muscle injuries.
Major I	28-42	Fractured toes, severe split pads, dislocated joints, simple fractures, Grade 3 muscle injuries.
Major II	43-90	Long bone fractures; severe spinal, pelvic or skull injuries; major fracture dislocations, Achilles tendon ruptures.
Catastrophic		Euthanased or sudden death.

Prior to the Commission assuming regulatory oversight of greyhound racing on 1 July 2018, OTVs employed by Greyhound Racing NSW classified all injuries requiring an incapacitation period of 21-90 days as Major. Separating major injuries into Major I (28 to 42 days) and Major II (43 to 90 days) improves understanding of the nature and extent of major injuries. Some injuries - such as fractured toes and split paw webbing - may not be serious in nature but will require an incapacitation period of 28 days and thus be classified as major injury, due to the length of time the greyhound should be rested to allow the injury to heal fully before racing again.

All serious injuries that are career-ending and may require significant rehabilitation and/or surgery will attract an incapacitation time of more than 42 days; such injuries can be differentiated as Major II for follow-up.

Injuries this quarter

Injuries are reported by OTVs and entered into an injury database managed by the Faculty of Engineering and Information Technology at the University of Technology Sydney (UTS). The injury data includes a description of the greyhound; the track, race distance, box and

race number where the injury occurred; the anatomical location and nature of the injury; the incapacitation time applied; the location on the track where the event occurred; and all treatment information. This information also contributes to research into track design, safety and injury prevention being conducted by UTS. Injuries reported during the quarter are detailed in Table 2 below.

Table 2: Injury numbers and rates in the 1 July-30 September period (Q3 2018)

Injury category	Incapacitation period (days)	Number of greyhounds injured	Injuries per 100 greyhounds raced	Injuries per 1,000 starts
Minor I	0	63	1.5	2.8
Minor II	1-10	244	5.8	10.7
Medium	14-21	210	5.0	9.2
Major I	28-42	118	2.8	5.2
Major II	43-90	14	0.3	0.6
Catastrophic	Euthanased/died	26	0.6	1.1
Total		675	16.1	29.5

The Major II injury rate indicates that 0.3% of greyhounds sustain a serious injury which is likely to be career-ending or require further surgery and/or rehabilitation, or may be life threatening; such injuries occur at a rate of 0.6 per 1,000 starts. Catastrophic injuries occurred in 0.6% of greyhounds racing during the quarter, at a rate of 1.1 per 1,000 starts.

Injury trends in 2018

A steady decrease in the total injury rate is apparent over the first three quarters of 2018, from 33.9 per 1,000 starts in the first quarter of 2018, to 31.0 per 1,000 starts in the second quarter, and 29.5 per 1,000 starts in this quarter (Table 3). Similarly, the catastrophic injury rate has decreased from 1.9 per 1,000 starts in the first quarter to 1.5 per 1,000 starts in the second quarter, and 1.1 per 1,000 starts in this quarter (Table 3).

The injury rate per 100 greyhounds is an indicator of individual greyhounds injured. In this quarter, 3.1% of individual greyhounds competing suffered Major (I and II) injuries and 0.6% Catastrophic injuries.

Table 3: Greyhound injury numbers and rates in 2018

Quarter 1 - 1 Jan - 31 March 2018 (GRNSW data); Quarter 2 - 1 April - 30 June 2018 (GRNSW data); Quarter 3 - 1 July - 30 Sept 2018 (GWIC data).

	Quarter 1 injuries			Quarter 2 injuries			Quarter 3 injuries		
Injury category	Number	Per 100 raced	Per 1000 starts	Number	Per 100 raced	Per 1000 starts	Number	Per 100 raced	Per 1000 starts
Minor I	48	1.0	2.4	95	2.2	4.1	63	1.5	2.7
Minor II	234	5.2	12	251	5.8	10.8	244	5.8	10.6
Medium	235	5.2	12	218	5.0	9.4	210	5.0	9.2
Major I + II	109	2.4	5.6	127	2.9	5.5	132	3.1	5.7
Catastrophic	37	0.8	1.9	31	0.7	1.5	26	0.6	1.1
Total	663		33.9	722	-	31.0	675	16.0	29.5

Long-term trends

Trends in injury rates since the start of 2016 are shown in Figures 1 and 2.

The first quarter of each year shows an overall high injury rate for that year (Figure 1), suggesting that the possible effects of season and weather on injury rates deserves further investigation.

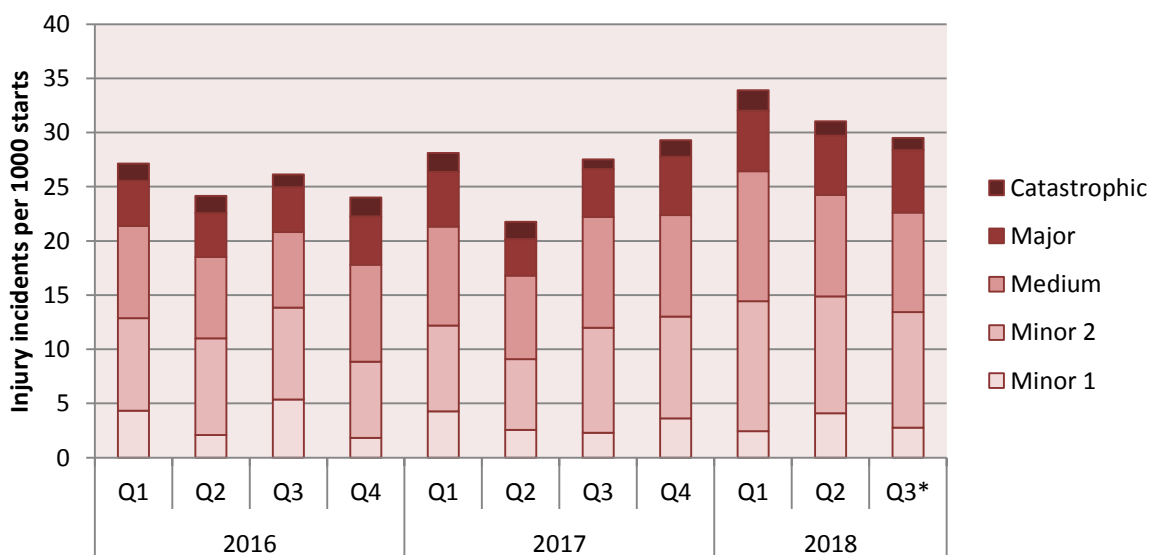


Figure 1: Injury trends by year quarters since 2016

*Data before Q3 2018 is from GRNSW reports available at <http://www.grnsw.com.au/welfare/veterinary/injury-report>

Injury rates in the lesser categories (Minor 1, Minor 2 and Medium) tend to show greater fluctuations from quarter to quarter than do more serious categories of injury (Major and Catastrophic) (Figure 2).

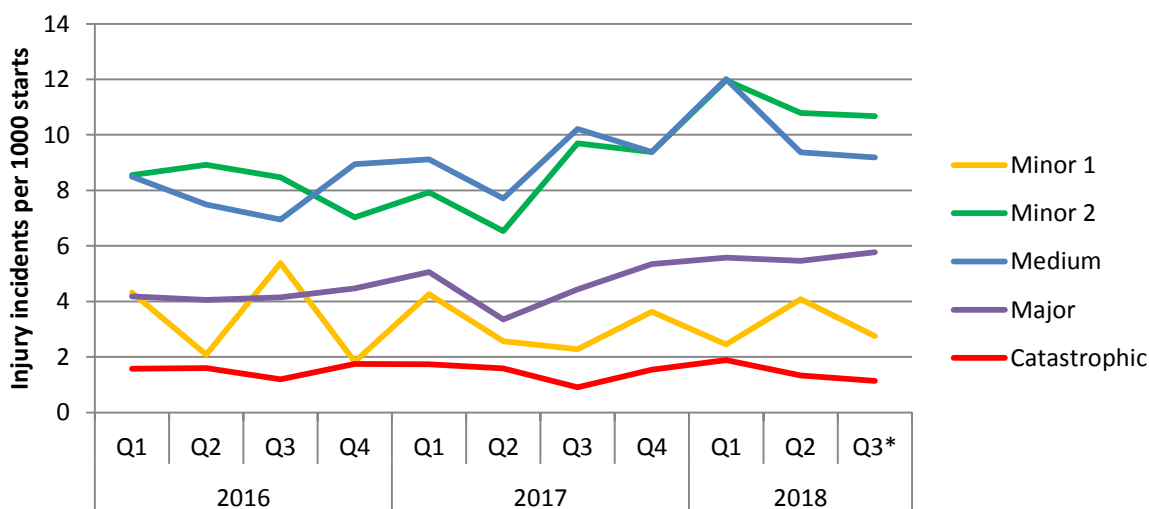


Figure 2: Trends in injury category by year quarters since 2016

*Data before Q3 2018 is from GRNSW reports available at <http://www.grnsw.com.au/welfare/veterinary/injury-report>

Major injuries

A slight increase in the total rate of Major I + II injuries was recorded during this quarter (Figure 2). In 2018 5.6 Major Injuries per 1,000 starts were recorded in the first quarter; 5.5 per 1,000 starts in the second quarter; and 5.8 per 1,000 starts during this quarter.

Major I + II injuries accounted for 19.6% of all injuries reported. Most of these were Major I injuries at 17.5%, most commonly injuries to the gracilis muscle. The incidence of Major II category injuries is very low, with an incidence of 2.1% of all injuries reported during the quarter. The Minor and Medium categories of injury, which require a stand down period of up to 21 days, comprised 76.6% of all injuries reported.

Fatalities

A fatality is defined as a greyhound which is euthanased at a race meeting as a result of an injury sustained during the meeting, or any sudden death occurring during the race meeting.

Twenty-six greyhound fatalities occurred at race meetings in NSW during this quarter. Twenty-five greyhounds were euthanased as a result of catastrophic injuries sustained during racing and one greyhound died suddenly following the race. Nineteen fatalities occurred during TAB race meetings and seven during non-TAB race meetings. The fatality rate for this quarter was 1.1 deaths per 1,000 race starts which represents a decrease on the previous quarter, in which 1.5 fatalities per 1,000 starts were reported.

The one sudden death reported during this quarter was the result of a fatal internal haemorrhage occurring minutes after a race due to a ruptured internal artery, as confirmed on necropsy.

Ten greyhounds were reported as having been euthanased by a private veterinarian as a result of an injury on track. These incidents followed referral by OTVs for further diagnostics and treatment.

Six greyhounds were reported as having been euthanased as a result of injuries sustained during unofficial club trials held during this quarter; these are not included in the on-track fatalities.

Injuries by anatomical location

The majority Major II and Catastrophic injuries were to the right hind and right forelegs. Most right hind limb injuries were fractures of the hock joint or hind ankle joint

Injuries to the right limbs are more common than left limb injuries (Figure 3) as a result of greater forces on the right or outside limbs in races conducted in an anti-clockwise direction. The camber of the track, width of the turns and traction provided by the surface will all play a role in the forces operating on the outside limbs of competing greyhounds. Equally, the speed the greyhound is travelling; the centripetal force or amount of 'lean' into the corner; as well as the weight of the greyhound and the gravitational forces all account for the total forces in the right hind limb. Any bump or uneven movement of this limb when a greyhound is running at high speed can cause a bone injury, due to the significant forces involved.

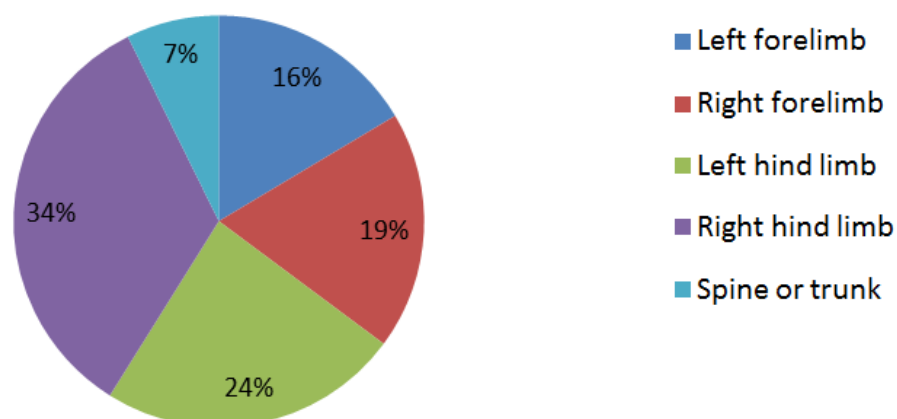


Figure 3: Injuries by anatomical location in this quarter

The right fore limb was the second most frequently reported cause of Catastrophic injuries. A number of these injuries to the right forelimb occurred as a result of impact with another greyhound, or contact with the outside running rail or track during a fall. The circumstances leading up to an injury and contributing factors are studied in order to understand the causes of injuries so that steps can be taken to make changes to prevent further injuries.

Conclusion

The Commission is committed to working to reduce the incidence and severity of greyhound injuries, and to the transparent and accurate reporting of injuries.

The Commission has sought advice from the Greyhound Industry Animal Welfare Committee in relation to injury prevention, and is also represented on a Greyhound Industry Advisory Panel to review injuries and advise appropriate action plans to improve track safety.

The Commission continues to work with Greyhound Racing NSW on track safety reform projects. The Commission provides injury data directly to the University of Technology Sydney (UTS) in order to inform their Track Safety and Design Study, which aims to improve understanding of the track-related aspects of racing injuries.

The Commission is currently developing a risk-based Injury Minimisation Strategy, seeking to understand the range of factors that may contribute to greyhound injuries and develop effective strategies to minimise injury risk. The causative factors of Major and Catastrophic injuries are known to be multi-factorial; analysis of injury trends therefore facilitates a timely response to emerging trends, and development of appropriate regulatory interventions.