Time to get our four priorities right: An 8 year prospective investigation of 1326 player-seasons to identify the frequency, nature, and burden of time-loss injuries in elite Gaelic football

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Managing injury risk requires an understanding of how and when athletes sustain certain injuries. Such information guides organisations in establishing evidence-based priorities and expectations for managing injury risk. In order to minimise the impact of sports injuries, attention should be directed towards injuries that occur frequently, induce substantial time-loss, and elevate future risk. Thus, the current study aimed to investigate the rate at which elite Gaelic football players sustain different time-loss injuries during match-play and training activities. Datasets (n=38) from elite Gaelic football teams (n=17) were received by the National GAA Injury Surveillance Database from 2008 to 2016. A total of 1614 time-loss injuries were analysed. Each season teams sustained 24.0 (IQR 16.0 – 32.0) and 15.0 (IQR 10.0 – 19.0) match-play and training injuries, respectively. When exposure was standardised to 1000 hours, greater rates of injury (12.9, 95% CI 11.7 – 14.3) and time-loss days (13.4, 95% CI 12.3 – 14.9) were sustained in match-play than in training. Acute injury rates were 3.1-times (95% CI 2.7 – 3.4) greater than chronic/overuse injuries. Similarly, non-contact injury rates were 2.8-times (2.5 – 3.2) greater than contact injuries. A total of 71% of injuries in elite Gaelic football affected five lower limb sites. Four lower limb-related clinical entities accounted for 40% of all time-loss injuries (hamstring, 23%; ankle sprain, 7%; adductor-related, 6%; quadriceps strain, 5%). Thus, most risk management and rehabilitation strategies need to be centered around five lower limb sites – and just four clinical entities. Beyond these, it may be highly unlikely that reductions in injury susceptibility can be attributed to specific team interventions. Thus, compliance with national databases is necessary to monitor injury-related metrics and future endeavors to minimise injury risk.
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Abstract

Managing injury risk requires an understanding of how, where, and when athletes sustain certain injuries. Such information guides organisations in establishing evidence-based priorities and expectations for managing injury risk. In order to minimise the impact of sports injuries, attention should be directed towards injuries that occur frequently, induce substantial time-loss, and elevate future risk. Thus, the current study aimed to investigate the rate at which elite Gaelic football players sustain different time-loss injuries during match-play and training activities. Datasets (n=38) from elite Gaelic football teams (n=17) were received by the National GAA Injury Surveillance Database from 2008 to 2016. A total of 1606 time-loss injuries were analysed. Each season teams sustained 24.0 (IQR 16.0 – 32.0) and 15.0 (IQR 10.0 – 19.0) match-play and training injuries, respectively. When exposure was standardised to 1000 hours, greater rates of injury (12.9, 95% CI 11.7 – 14.3) and time-loss days (13.4, 95% CI 12.3 – 14.9) were sustained in match-play than in training. Acute injury rates were 3.1-times (95% CI 2.7 – 3.4) greater than chronic/overuse injuries. Similarly, non-contact injury rates were 2.8-times (2.5 – 3.2) greater than contact injuries. A total of 71% of injuries in elite Gaelic football affected five lower limb sites. Four lower limb-related clinical entities accounted for 40% of all time-loss injuries (hamstring, 23%; ankle sprain, 7%; adductor-related, 6%; quadriceps strain, 5%). Thus, most risk management and rehabilitation strategies need to be centred around five lower limb sites – and just four clinical entities. Beyond these, it may be highly unlikely that reductions in injury susceptibility can be attributed to specific team interventions. Thus, compliance with national databases is necessary to monitor injury-related metrics and future endeavours to minimise injury risk.
INTRODUCTION

Gaelic football is a national sport of Ireland and has been governed by the Gaelic Athletic Association (GAA) since 1884. Match-play is characterised by intermittent bouts of multidirectional running as elite players reportedly cover 9200m, with 18% at a high-speed pace (>17 km·h\(^{-1}\)) (11). This equates to a relative distance of 132 m·min\(^{-1}\), however during periods of match-play workloads can range between 190 to 230 m·min\(^{-1}\) (12).

Managing injury risk is essential for maximising player availability and team performance (6). The initial stage of this process involves establishing an injury profile for the given sport whilst accounting for the dynamic interactions between players and the activities they undertake (1, 9). Thus, managing injury risk requires an understanding of how (i.e. inciting mechanism) and when (i.e. inciting activity) athletes sustain certain injuries (e.g. hamstring strain) (30). In order to minimise the impact of injuries in sports, attention can then be directed towards injuries that occur frequently, induce substantial time-loss, and elevate future risk. Such information guides sports organisations in establishing evidence-based priorities by being aware of “what problems need to be focused on” when creating future strategies (22).

For instance, a lot of research and media attention is devoted to anterior cruciate ligament (ACL) injuries, partially due to risk of developing osteoarthritis early in life (24). However, ACL injuries only account for 2% of all injuries in elite Gaelic football (26). Although these infrequent injuries result in an average of 300 days from sport (26), 83% of elite athletes return to performance levels comparable to their uninjured peers (25). Considering that 98% of injuries will not involve the ACL, teams may not experience an ACL injury for 2 seasons, making it impossible to evaluate the efficacy of specific risk management strategies at a single-team level. Therefore, a need exists for injury surveillance data to support evaluations of team programs via comparisons to epidemiological data on specific clinical entities. In this way, stakeholders may move closer to consensus on what is an acceptable level of risk given awareness of evidence that is relevant, valid and reliable (23).

Additionally, injury risk management can only be guided with detailed reporting on specific clinical entities. This approach has been eluded to in relation to groin pain in athletes, however, it has not yet been expanded to an injury surveillance dataset encompassing all musculoskeletal injuries (21). Furthermore, the injury profile of specific activities has yet to be compared in...
Gaelic football. Thus, the current study aims to establish the frequency, nature, and burden of
time-loss injuries sustained in elite male Gaelic football.

METHODS

Three fundamental variables in epidemiological investigations are the interactions between
person, place, and time (9). In a sporting context these can be adapted to provide an
understanding of how (e.g. mechanism) and when (e.g. training, match-play) athletes of a given
age sustain specific injuries (e.g. ankle sprain). In the current study we apply these criteria to
describe the pattern of injured body regions among elite Gaelic football players. Players are
stratified into one of four groups according to age (18-20 years, 21-24 years, 25-29 years, >30
years). The activity during which the injury was sustained (i.e. training or match-play) indicated
place. Timing of injury was classified as per seasonal cycle, that is, preseason (weeks 1-7),
competitive cycle one (i.e. National League) (weeks 8-16), mid-season (weeks 17-22), or
competitive cycle two (i.e. Provincial-National Championship) (weeks 23-34).

Between 2008 and 2016, thirty eight datasets were received from elite male Gaelic football
teams (n=17) enrolled in the National GAA Injury Surveillance Database. This equates to 1326
player-seasons. The involvement of each team ranged from 1-7 seasons. Following consent,
player anonymity was maintained and data protection assured in accordance with ethical
approval received from the Human Subjects Research Ethics Committee (LS-E-11-91) at
University College Dublin. The team medical doctor or Chartered Physiotherapist was
responsible for injury diagnosis (figures 1 and 2). Team medical staff were asked to confirm
whether all injury and exposure data had been provided before reports were generated. Non-
compliant teams were then excluded from analysis.

Definitions

Data were categorised as previously described (13). Injury was defined as “any injury that
prevents a player from taking a full part in all training and match play activities typically planned
for that day, where the injury has been there for a period greater than 24 hours from midnight at
the end of the day that the injury was sustained” (4). A clinical diagnosis was also selected from
a list or entered in free text form and later recoded to defined clinical entities or ‘other’ if
appropriate. Date of partial fitness was defined as “the date the player is able to participate in
training, but is not available for match selection”. Date of full fitness was defined as “when the
player has been able to take a full part in training and is available for match selection”.

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Data Analysis

Data were analysed as previously described (15) using a statistical analysis software (IBM SPSS Statistics 24.0). Continuous variables are reported as mean with 95% confidence intervals (95% CI). Team rates are reported as median with interquartile ranges (IQR). Injury incidences are reported per 1000 exposure hours. Injury burden (i.e. time-loss days per 1000 exposure hours) was calculated by multiplying mean time-loss by the injury incidence. Incidence rate ratios (IRR) were calculated to compare injury risk across age groupings, injury types, and match-play and training activities. IRRs were calculated by dividing a specific incidence metric to that representing the injuries in all other sub-groups.

RESULTS

A total of 177854 exposure hours (17988 match-play; 159866 training) were reported. Time-loss injuries (n=1606) were reported for match-play (n=896) and training activities (n=616). An additional 94 time-loss injuries (5.9%, 95% CI 4.7 – 7.1) were associated with an insidious onset as opposed to a specific activity.

Team Rates

The median number of injuries sustained per team each season was 42.0 (IQR 31.0 – 53.0). Each season teams sustained 24.0 (IQR 16.0 – 32.0) and 15.0 (IQR 10.0 – 19.0) match-play and training injuries, respectively. In total, 33.0 (IQR 22.0 – 45.0) injuries were sustained during competitive cycles (Table 1).

Injury Site

Match-play was associated with the onset of 54.4% (95% CI 51.7 – 57.2) lower limb, 75.6% (95% CI 69.0 – 82.1) upper limb, 41.9% (95% CI 32.4 – 51.4) trunk, and 62.2% (95% CI 48.9 – 75.6) head/neck injuries, respectively. Training was associated with the onset of 40.3% (95% CI 37.5 – 48.2) lower limb, 23.2% (95% CI 16.7 – 29.8) upper limb, 43.8% (95% CI 34.3 – 53.3) trunk, and 33.3% (95% CI 20.0 – 48.9) head/neck injuries, respectively.

The five most common injuries were lower limb related and accounted for 70.9% (95% CI 62.4 – 78.9) of all time-loss injuries. However, the frequency of these common injuries differed between match-play and training (table 2). Analysis of clinical entities revealed that four specific injuries accounted for 40.9% (95% CI 35.6 – 46.1) of all injuries. These related to hamstring...
strains (23.0%), ankle sprains (6.8%), adductor-related groin pain (5.9%), and quadriceps
strains (5.2%). Quartile ranges identified that aside from these four clinical entities, each season
more than one-in-four teams will not sustain injuries identified as being the most common (table
3). These four clinical entities also accounted for 38.9% (95% CI 29.3 – 52.7) of all player
unavailability (table 4).

**Match-Play Injuries**

Match-play injuries accounted for 55.8% (53.5 – 58.2) of all time-loss injuries. The lower limb
region was the most common site of match-play injury (77.8%, 95% CI 75.1 – 80.3) followed by
the upper limb (14.2%, 95% CI 12.1 – 16.5), trunk (4.9%, 95% CI 3.5 – 6.3), and head/neck
regions (3.1%, 95% CI 2.0 – 4.2).

Most match-play injuries were classified as new (78.0%, 95% CI 73.3 – 82.7) as opposed to
recurrent (22.0%, 95% CI 17.3 – 26.7), were associated with an acute onset (81.7%, 95% CI
79.2 – 84.2) rather than chronic or overuse (18.3%, 95% CI 15.8 – 20.8), and were incited by
non-contact mechanisms (73.2%, 59.8 – 65.3) as opposed to contact between players (36.8%,
95% CI 33.7 – 40.2).

Match-play was associated with the onset of 55.8% (95% CI 53.4 – 58.2) of all new injuries and
59.3% (95% CI 50.4 – 67.4) of all recurrent injuries. Furthermore, the proportions of all early (<8
weeks), late (2-12 months), and delayed (>12 months) recurrent injuries occurring in match-play
were 59.3% (95% CI 50.4 – 67.4), 44.6% (95% CI 36.7 – 52.5), and 44.6% (95% CI 32.5 –
55.4), respectively.

Analysis of time-loss data revealed that 25.1% (95% CI 21.7 – 28.5), 51.1% (95% CI 47.5 –
55.4), and 23.8% (95% CI 20.0 – 27.0) of match injuries resulted in mild, moderate, and severe
time-loss, respectively.

**Training Injuries**

Training injuries most commonly occurred in the lower limb region (83.6%, 95% CI 80.5 – 86.5)
followed by the upper limb (6.3%, 95% CI 4.2 – 8.1), trunk (7.5%, 95% CI 5.4 – 9.4), and
head/neck regions (2.4%, 95% CI 1.3 – 3.9).

Training was associated with the onset of 38.7% (36.3 – 41.2) of all new injuries and 35.6%
(95% CI 28.1 – 43.7) of all recurrent injuries. Furthermore, the proportions of early (<8 weeks),
late (2-12 months), and delayed (>12 months) recurrent injuries that occurred during training were 35.6\% (95\% CI 28.1 – 43.7), 46.8\% (95\% CI 38.1 – 54.7), and 47.0\% (95\% CI 36.1 – 59.0), respectively.

Time-loss data revealed that 30.2\% (95\% CI 25.8 – 34.9), 50.4\% (95\% CI 45.7 – 55.8), and 19.4\% (95\% CI 15.5 – 23.3) of training injuries resulted in mild, moderate, and severe time-loss, respectively.

**Injury Incidence Across Age-Groups**

Overall injury incidence was 9.2 (95\% CI 8.8 – 9.6) per 1000 exposure hours. The incidence of acute injuries was 3.1-times (95\% CI 2.7 – 3.4) greater than chronic/overuse injuries. Similarly, non-contact injuries occurred 2.8-times (95\% CI 2.5 – 3.2) more frequently than injuries incited via contact between players. Injury incidence increased across age-groups with IRR greatest for players aged 30+ years (1.51, 95\% CI 1.32 – 1.74) when compared to all other players (supplementary table 1).

**Injury Incidence Between Match-Play and Training**

Match-play incidence (49.8, 95\% CI 46.5 – 53.0) was 12.9-times (95\% CI 11.7 – 14.3) higher than training incidence (3.9, 95\% CI 3.6 – 4.3). The incidence and IRR of non-contact, contact, acute, and chronic/overuse injuries between match-play and training are outlined in table 5 and table 6.

The incidence of mild, moderate, and severe injuries was also compared between match-play and training (table 7) whilst accounting for injury region. The IRR between match-play and training injuries grew as the classification of severity increased (table 6).

**Time-Loss and Player Unavailability**

Match-play injuries accounted for a greater proportion of all time-loss (51.8\%, 95\% CI 51.2 – 52.1) than training injuries (33.8\%, 95\% CI 3.4 – 36.6). Match-play and training injuries resulted in a total of 576 (95\% CI 345.6 – 851.2) and 342 (95\% CI 193.0 – 516.8) time-loss days per team each season, respectively. The mean time-loss for match-play and training injuries was 24.0 (95\% CI 21.6 – 26.6) and 22.8 (95\% CI 19.3 – 27.2) days, respectively. Although mean time-loss overlaps considerably between these activities, injury burden (days lost per 1000 hours of exposure) was 13.4-times (95\% CI 12.3 – 14.9) higher in match-play than in training.
(table 8). Lower limb injuries accounted for the majority (79.3%, 95% CI 77.1 – 80.8) of player unavailability. This trend was observed across all age-groups (supplementary Table 2).

DISCUSSION

The aim of the current study was to establish the rate at which elite Gaelic football players sustain different time-loss injuries during match-play and training activities. Measures of central tendency reveal that teams sustain 24 match-play and 15 training injuries per season. Injury incidence per 1000 exposure hours is 12.9-times greater in match-play (49.8/1000 hours) than in training (3.9/1000 hours). Essentially, teams are sustaining the vast majority of their injuries during match-play despite only periodically playing competitive matches. The magnitude of inequity between activity injury rates means that identification of factors influencing the onset of match-play injuries should be prioritised given their greater rate of occurrence.

Emergence Of Match-Play Injury Patterns

Despite contact injuries being 18.0-times more frequent in match-play than in training, 73% of match-play injuries were classified as non-contact. Furthermore, most match-play injuries were classified as new (78%) and acute (82%) suggesting an adverse relationship between player’s capacities and imposed match-play demands. Thus, factors such as contact between players and deficits from previous or ongoing conditions are not associated with the onset of most match-play injuries. This prompts the question: why do acute, non-contact injuries occur more frequently in match-play than in training? Although random events impact injury susceptibility, it is unlikely that elite players become 13-times unluckier when playing match-play than playing training.

A greater proportion of recurrent injuries (59%) occurred in match-play than in training (36%), particularly during the immediate 8 weeks following return to sport (59% v 30%). Studies in elite soccer players have observed decrements in lower limb strength following exposure to match-play, particularly among previously injured players (18, 20). Although, elite Gaelic footballers with previous hamstring injuries may have greater eccentric knee flexor strength on average when compared to their uninjured peers, the likelihood of decrements following return to sport was 51% with a 25% chance of between limb asymmetries exceeding 15% (29). The odds of sustaining injury are also known to be greater among elite Gaelic football players with previous injuries in comparison to their uninjured peers (15). Such findings may guide return to sport
protocols and tailoring of risk management strategies among players with recent previous injuries as unique management strategies may be required for this sub-cohort.

Paradox of Performance-Focused Teams Sustaining Frequent Match-Play Injuries

Considering that training aims to maximise the chances of the team succeeding in match-play, a high match-play injury rate, largely constituted by non-contact and acute injuries, cannot coexist with interventions to maximise player availability. The high rate of injuries (20, IQR 14.0 – 29.0) during the initial competitive cycle of the season suggests components of preseason interventions offer little protection against early inseason exposures to injurious match-play demands. Unavailability may impair the transition of early career players to senior squads by reducing exposures to interventions to develop desired sport specific skills while promote detraining during rehabilitation periods (7, 8, 17).

The rate of injuries not associated with contact or chronic/overuse injuries in match-play suggests emergence of an injury pattern distinct to training. This suggests scope for screening studies to detect players especially vulnerable to match-play demands as it is questionable that a truly random series of factors are driving this increased rate. However, difficulties in identifying athletes are at greater risk of sustaining injury, due to modifiable factors, has been challenging to date (2). While it is clear that most injuries in elite Gaelic football are sustained during match-play, investigations of injury risk factors typically occur in preseason and thus, not periods associated with frequent match-play exposures. This leads to a reliance on surrograte and cross-sectional measures of injury risk to assess capacity to tolerate match-play demands for a prolonged period of time. These findings suggest complex dynamics between an athlete’s work capacity, tolerance of sport specific stress, and injury.

The workloads imposed on athletes in match-play and training have yet to be compared in elite Gaelic football. However, during training camp sessions players have reportedly covered 5417 ± 425m, of which 924.4 ± 225m was at ≥17 km.hr or high-speed distance (10). This is 42% less than the 9222 ± 1588m and 1596 ± 594m at ≥17 km.hr, reportedly covered in match-play (11). Contextual factors such as seasonal cycle, opposition standard, tactical strategies, and match outcome also impact these workloads (16). Despite being central to the activity during which most injuries are sustained (i.e. match-play) these factors have yet to be considered by screening tools.

Interpreting Epidemiological Data to Guide Selection of Screening Tools
Understanding the extent of the injury problem is the first stage of reducing injury risk (19). This is the key to designing risk management strategies as it guides researchers and practitioners with an understanding of how, when, and where certain athletes sustain certain injuries (30). Results of the current study show that training and match-play have different injury profiles as marked by their distinct common injury sites, inciting mechanisms, types, and severity patterns. Thus, the first stage in designing screening protocols for common injuries needs to consider the exact injury of focus, during which activity and mechanism it mostly occurs, as well as the seasonal cycle in which this screening protocol will be of some, and potentially, no utility.

Identifying what proportion of the problem would likely be solved by targeting certain injuries needs to be considered. Considering how scarce training injuries occur, relative to the amount of time to accumulate 1000 hours, addressing common match-play injuries may be a more efficient endeavor for managing injury risk. Similarly, the sensitivity and specificity of screening tools may vary across the season given the nature of activities associated with specific cycles (3). For instance, there is scope to reduce time-loss if lower limb (79%) or match-play (52%) injuries were addressed. Consensus on the management of common injuries is needed, even moreso if the approach of frequent targeted screening during periods associated with the onset of common injuries fails. Furthermore, considering the scarcity at which some injuries occur each season, clinicians will be unlikely to statistically attribute changes in susceptibility to rates of specific clinical entities to team interventions. The case load of a clinician across multiple seasons will not facilitate the exploration of efficacious interventions for reducing and rehabilitating even the most common injuries on an elite Gaelic football team. Thus, participation in large-scale injury surveillance databases is necessary to pool sufficient quantities of quality data to monitor injury trends (27, 28).

**Time for Minimum Standards for Managing Common Injuries**

Hamstring, knee, ankle, groin, and quadriceps injuries were the most common injuries in both activities. These results mean that 3 out of 4 injuries in Gaelic football will affect one of five lower limb sites. One in ten match-play injuries also affected the shoulder. Thus, it is important that practitioners have a comprehensive understanding of methods to manage the assessment, diagnosis, rehabilitation, and risk management of these specific injuries. Establishing minimum reporting standards for these common injuries would reduce potential difficulties in these processes (5). These actions likely have implications for human resources operations surrounding the recruitment and development of medical and coaching staff to deliver
interventions specific to the sport. Epidemiological information as presented here can also guide governing bodies in supporting medical resources at specific stages of the season associated with a greater injury rate (e.g. competitive cycles) and higher treatment costs (14).

Limitations

A major limitation of the current study is the reliance on elite teams to voluntarily participate in this injury surveillance project as it is not compulsory for teams to collect and share these data with the governing body. Thus, it is currently impossible to establish longitudinal trends in the rates of common injuries during match-play and training. The current study was also unable to investigate the relationship between player characteristics, activity workloads, and risk of sustaining a time-loss injury. This should be a priority for future research as completing screening targeted at specific injuries more frequently may address limitations in traditional approaches to injury screening while assisting in monitoring desired training responses.

CONCLUSION AND METHODOLOGICAL CONSIDERATIONS

Each season elite Gaelic football teams will sustain 24 match-play and 15 training time-loss injuries. Regardless of activities, most injuries affect the lower limbs, are incited by non-contact injury mechanisms, are associated with an acute onset, and result in 8-28 days absence from sport. When time spent in activities is standardised to 1000 exposure hours, injuries occur 12.9-time more frequently in match-play than in training. Similarly, time-loss days per 1000 hours are 13.4-times greater in match-play than in training. The utilisation of screening tools in future studies should be targeted at seasonal cycles associated with the greatest injury risk to maximise the potential to identify high risk players.
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Figure 1

Injury surveillance protocol

Outline of stages involved to recruit and obtain injury-related data from team physiotherapists and medical doctors for the GAA National Injury Surveillance Database in 2008 to 2016.
Manuscript to be reviewed

1. Team Recruitment in Cooperation with Gaelic Athletic Association (GAA)
2. Register User Account for GAA National Injury Surveillance Database
3. User Training
4. User Registers & Activates Player Profiles
5. User Begins Entering Injury-Related Data from Preseason Until Elimination from Championship or End of Season

Weekly Exposure Data
- 1. Training Exposure Hours
- 2. Number of Training Sessions
- 3. Match-Play Exposure Hours
- 4. Number of Matches

Time-Loss Injury Data
- 1. Date of Injury
- 2. Playing Position at Time of Injury
- 3. Body Region of Injury
- 4. Inciting Activity
- 5. Inciting Mechanism
- 6. Timing
- 7. Site of Injury
- 8. Side of Body
- 9. Main Tissue Injured
- 10. Injury Type
- 11. Injury Severity (Prognosis)
- 12. New or Recurrent
- 13. Injury Grade
- 14. Clinical Diagnosis
- 15. Other Ongoing Injuries
- 16. Date of Partial Fitness
- 17. Date of Full Fitness
Figure 2

Data entry pathway for registering a time-loss injury
Table 1 (on next page)

Injury rates per team

Presented as median (interquartile range) per season.
| Table 1 – Median (IQR) Team Injury Rates Per Season |
|-----------------------------------------------|
|                                                |
| **Team Rates**                                 |
| Total Injuries                                 | Median: 42.0, Interquartile Range: 31.0 - 53.0 |
| Match-Play Injuries                            | Median: 24.0, Interquartile Range: 16.0 - 32.0 |
| Training Injuries                              | Median: 15.0, Interquartile Range: 10.0 - 19.0 |
| **Region**                                     |
| Lower Limb                                     | Median: 33.0, Interquartile Range: 24.0 - 45.0 |
| Upper Limb                                     | Median: 4.0, Interquartile Range: 3.0 - 7.0   |
| Trunk                                         | Median: 2.0, Interquartile Range: 1.0 - 5.0   |
| Head/Neck                                      | Median: 1.0, Interquartile Range: 1.0 - 2.0   |
| **Injury Type**                                |
| Contact                                       | Median: 11.0, Interquartile Range: 7.0 - 16.0 |
| Non-Contact                                    | Median: 30.0, Interquartile Range: 21.0 - 39.0|
| Acute                                         | Median: 32.0, Interquartile Range: 26.0 - 36.0|
| Chronic/Overuse                                | Median: 9.0, Interquartile Range: 5.0 - 13.0  |
| New                                           | Median: 31.0, Interquartile Range: 23.0 - 43.0|
| Recurrent                                      | Median: 9.0, Interquartile Range: 7.0 - 11.0  |
| **Severity**                                   |
| Mild                                           | Median: 11.0, Interquartile Range: 6.0 - 17.0 |
| Moderate                                       | Median: 19.0, Interquartile Range: 11.0 - 26.0|
| Severe                                         | Median: 10.0, Interquartile Range: 6.0 - 12.0 |
| **Seasonal Cycle**                             |
| Preseason                                      | Median: 4.0, Interquartile Range: 2.0 - 7.0   |
| Competitive Cycle 1                            | Median: 20.0, Interquartile Range: 14.0 - 29.0|
| Midseason                                      | Median: 7.0, Interquartile Range: 4.0 - 9.0   |
| Competitive Cycle 2                            | Median: 13.0, Interquartile Range: 8.0 - 16.0 |
**Table 2** (on next page)

Five most commonly injured sites

Presented with corresponding 95% confidence intervals.
Table 2 – Five Most Common Injured Sites

|   | All injuries        | Match-Play          | Training            |
|---|---------------------|---------------------|---------------------|
| 1 | Hamstring, 23.9% (21.9 - 26.0) | Hamstring, 23.1% (20.2 - 26.0) | Hamstring, 27.6% (24.2 - 31.2) |
| 2 | Groin, 14.9% (13.0 - 16.7) | Knee, 12.7% (10.5 - 15.0) | Groin, 17.5% (14.8 - 20.6) |
| 3 | Ankle, 11.7% (10.1 - 13.3) | Ankle, 12.2% (9.9 - 14.2) | Ankle, 10.7% (8.4 - 13.3) |
| 4 | Knee, 11.1% (9.5 - 12.6) | Groin, 10.8% (8.9 - 12.9) | Quadriceps, 10.1% (7.8 - 12.5) |
| 5A| Quadriceps, 9.3% (7.9 - 10.3) | Shoulder, 9.7% (7.9 - 11.7) | Knee, 8.6% (6.3 - 10.7) |
| 5B| -                   | Quadriceps, 9.7% (7.7 - 11.6) | -                   |
| Combined | 70.9% (62.4 - 78.9) | 78.2% (65.1 - 91.4) | 74.5% (61.5 - 88.3) |
Table 3 (on next page)

Most common clinical entities as per injury diagnosis
### Table 3 – Most common clinical entities as injury diagnosis

| Team                                      | Rate Per Season (Median, IQR) | Percentage of All Injuries | Prevalence | Incidence | Match-Play Incidence | Training Incidence | Likelihood Non-Contact Related | Likelihood Occurring in Match-Play | Likelihood Occurring in Training |
|-------------------------------------------|-------------------------------|----------------------------|------------|-----------|----------------------|-------------------|-----------------------------|-----------------------------------|----------------------------------|
| All Injuries                              | 42 (31 - 53)                  | -                          | 69.8% (67.4 - 72.3) | 9.2 (8.8 - 9.6) | 50.5 (47.2 - 53.8) | 3.9 (3.6 - 4.3) | 72.9% (70.7 - 75.1) | 55.8% (53.4 - 58.2) | 38.7% (36.3 - 41.2) |
| Hamstring: Muscle/Tendon Strain           | 9 (7 - 12)                    | 23.0% (21.0 - 24.9)        | 19.7% (17.5 - 21.8) | 2.1 (1.9 - 2.3) | 11.0 (9.5 - 12.5) | 1.1 (0.9 - 1.2) | 98.1% (96.8 - 99.5) | 52.7% (48.1 - 57.7) | 45.2% (40.4 - 49.7) |
| Ankle: Sprain                             | 3 (1 - 4)                     | 6.8% (5.6 - 7.9)           | 7.4% (6.0 - 8.8)   | 0.6 (0.5 - 0.7) | 3.8 (2.9 - 4.7) | 0.2 (0.2 - 0.3) | 94.6% (89.6 - 99.0) | 47.9% (37.9 - 57.9) | 46.9% (36.9 - 56.9) |
| Groin: Adductor-Related                   | 2 (1 - 4)                     | 5.9% (4.8 - 6.9)           | 6.0% (4.7 - 7.2)   | 0.5 (0.4 - 0.7) | 2.5 (1.8 - 3.3) | 0.3 (0.2 - 0.4) | 98.8% (96.5 - 100) | 41.2% (30.6 - 50.6) | 58.8% (49.4 - 69.4) |
| Quadriceps: Muscle Strain                 | 2 (1 - 4)                     | 5.2% (4.2 - 6.4)           | 5.8% (4.5 - 7.1)   | 0.5 (0.4 - 0.6) | 2.0 (1.3 - 2.6) | 0.3 (0.2 - 0.4) | 94.4% (87.3 - 98.6) | 50.7% (38.0 - 62.0) | 47.9% (36.6 - 60.6) |
| Calf: Muscle/Tendon Strain                | 1 (0 - 4)                     | 4.3% (3.4 - 5.3)           | 4.5% (3.4 - 5.6)   | 0.4 (0.3 - 0.5) | 2.0 (1.3 - 2.7) | 0.2 (0.1 - 0.3) | 94.4% (87.3 - 98.6) | 50.7% (38.0 - 62.0) | 47.9% (36.6 - 60.6) |
| Quadriceps: Bruising/Haematoma            | 1 (0 - 3)                     | 3.9% (3.0 - 4.8)           | 4.1% (3.1 - 5.2)   | 0.4 (0.3 - 0.4) | 2.8 (2.1 - 3.6) | 0.1 (0.0 - 0.1) | 7.9% (1.6 - 15.9)  | 81.0% (71.4 - 90.5) | 17.5% (7.9 - 27.0) |
| Groin: Hip-related                        | 1 (0 - 3)                     | 2.7% (2.0 - 3.5)           | 2.9% (2.0 - 3.9)   | 0.3 (0.2 - 0.3) | 0.9 (0.5 - 1.3) | 0.1 (0.1 - 0.2) | 68.2% (54.5 - 81.8) | 35.6% (21.6 - 49.5) | 46.7% (32.1 - 61.2) |
| Shoulder AC Joint Sprain                  | 1 (0 - 2)                     | 2.4% (1.7 - 3.1)           | 2.9% (2.0 - 3.8)   | 0.2 (0.2 - 0.3) | 1.8 (1.2 - 2.5) | 0.04 (0.0 - 0.1) | 15.0% (5.0 - 27.4) | 82.5% (70.0 - 92.5) | 15.0% (5.0 - 27.5) |
| Ankle: General                            | 1 (0 - 2)                     | 2.4% (1.7 - 3.1)           | 2.7% (1.8 - 3.6)   | 0.2 (0.2 - 0.3) | 1.1 (0.6 - 1.6) | 0.1 (0.1 - 0.2) | 76.9% (64.1 - 89.7) | 51.3% (33.3 - 66.7) | 41.0% (25.6 - 56.4) |
| Groin: Other                              | 1 (0 - 3)                     | 2.3% (1.6 - 3.1)           | 2.6% (1.7 - 3.4)   | 0.2 (0.2 - 0.3) | 0.7 (0.3 - 1.0) | 0.1 (0.1 - 0.2) | 89.5% (78.9 - 97.4) | 31.6% (16.8 - 46.4) | 47.4% (31.5 - 63.2) |
| Groin: Iliopsoas-Related                  | 1 (0 - 3)                     | 2.1% (1.5 - 2.9)           | 2.5% (1.7 - 3.3)   | 0.2 (0.2 - 0.3) | 0.8 (0.4 - 1.3) | 0.1 (0.1 - 0.2) | 88.6% (77.1 - 97.1) | 42.9% (26.5 - 65.3) | 48.6% (32.0 - 65.1) |
| Knee: Patellar Tendinopathy               | 0 (0 - 1)                     | 2.1% (1.4 - 2.8)           | 2.3% (1.5 - 3.1)   | 0.2 (0.1 - 0.3) | 1.3 (0.8 - 1.8) | 0.03 (0.0 - 0.1) | 97.1% (91.2 - 100) | 67.6% (52.9 - 82.4) | 11.8% (2.9 - 23.5) |
| Shoulder: General                         | 0 (0 - 1)                     | 1.7% (1.2 - 2.3)           | 2.1% (1.3 - 2.9)   | 0.2 (0.1 - 0.3) | 1.0 (0.5 - 1.5) | 0.06 (0.0 - 0.1) | 25.0% (17.1 - 42.9) | 64.3% (46.4 - 82.1) | 35.7% (17.9 - 53.6) |
| Knee: MCL Sprain                          | 1 (0 - 2)                     | 1.6% (1.0 - 2.3)           | 1.7% (1.0 - 2.4)   | 0.2 (0.1 - 0.2) | 1.2 (0.7 - 1.7) | 0.03 (0.0 - 0.1) | 42.3% (23.1 - 61.5) | 80.8% (65.4 - 96.2) | 15.4% (3.8 - 30.8) |
| Knee: General                             | 0 (0 - 1)                     | 1.6% (1.0 - 2.2)           | 2.0% (1.2 - 2.7)   | 0.2 (0.1 - 0.2) | 0.6 (0.3 - 1.0) | 0.1 (0.0 - 0.1) | 61.5% (42.4 - 80.8) | 42.3% (23.1 - 61.5) | 53.8% (34.6 - 73.1) |
| Back: Disc Pathology                      | 0 (0 - 1)                     | 1.5% (1.0 - 2.1)           | 1.7% (1.0 - 2.3)   | 0.2 (0.1 - 0.2) | 0.4 (0.1 - 0.8) | 0.1 (0.0 - 0.1) | 96.0% (88.0 - 100) | 32.0% (16.0 - 52.0) | 44.0% (24.0 - 64.0) |
| Knee: Bruising/Haematoma                  | 0 (0 - 1)                     | 1.5% (0.9 - 2.2)           | 2.5% (1.7 - 3.3)   | 0.2 (0.1 - 0.3) | 1.3 (0.8 - 1.8) | 0.06 (0.0 - 0.1) | 37.1% (22.9 - 54.3) | 65.7% (48.6 - 82.8) | 25.7% (11.4 - 40.0) |
Table 4 (on next page)

Consequences of the most common clinical entities

*Likelihood of recurrence statistic in row "All Injuries" refers to proportion of players sustaining a subsequent injury following a return to sport.
### Table 4 – Consequences of the most common clinical entities

| Injury Burden | Percentage of Unavailability | Likelihood of Recurrence | Match-Play Incidence |
|----------------|-----------------------------|--------------------------|----------------------|
| Mean Time-Loss | -                           | -                        | -                    |
| All Injuries   | 25.9 (23.5 - 28.4)          | 238.3 (206.8 - 272.6)    | 71.8% (63.5 - 80.2)* | 50.5 (47.2 - 53.8)  |
| Hamstring: Muscle/Tendon Strain | 25.2 (20.5 - 31.0) | 52.9 (39.0 - 71.3) | 22.2% (18.8 - 26.2) | 44.1% (38.0 - 50.1) | 11.0 (9.5 - 12.5) |
| Ankle: Sprain   | 24.5 (18.1 - 32.9)          | 14.7 (9.1 - 23.0)        | 6.2% (4.4 - 8.4)     | 13.3% (6.5 - 20.0)  | 3.8 (2.9 - 4.7)   |
| Groin: Adductor-Related | 25.3 (15.9 - 37.1) | 12.7 (6.4 - 26.0) | 5.3% (3.1 - 9.5) | 21.5% (12.5 - 30.6) | 2.5 (1.8 - 3.3) |
| Quadriceps: Muscle Strain     | 24.7 (15.5 - 38.9) | 12.4 (6.2 - 23.3) | 5.2% (3.0 - 8.6) | 10.4% (3.6 - 17.2) | 2.0 (1.3 - 2.6) |
| Calf: Muscle/Tendon Strain    | 29.2 (19.2 - 42.3)          | 11.7 (5.8 - 21.2)        | 4.9% (2.8 - 7.8)     | 18.3% (8.5 - 28.1)  | 2.0 (1.3 - 2.7)   |
| Quadriceps: Bruising/Haematoma | 9.7 (7.8 - 11.9)  | 3.9 (2.3 - 4.8)         | 1.6% (1.1 - 1.7)     | 14.5% (5.2 - 23.9)  | 2.8 (2.1 - 3.6)   |
| Groin: Hip-related            | 32.1 (19.0 - 47.3)          | 9.6 (3.8 - 14.2)         | 4.0% (1.8 - 5.2)     | 12.8% (2.3 - 23.3)  | 0.9 (0.5 - 1.3)   |
| Shoulder AC Joint Sprain      | 34.2 (20.0 - 54.0)          | 6.8 (4.0 - 16.2)         | 2.9% (1.9 - 5.9)     | 5.3% (1.8 - 12.4)   | 1.8 (1.2 - 2.5)   |
| Ankle: General               | 28.8 (17.7 - 38.3)          | 5.4 (3.5 - 11.5)         | 2.2% (1.7 - 4.2)     | 8.3% (0.7 - 17.4)   | 1.1 (0.6 - 1.6)   |
| Groin: Other                 | 18.1 (9.7 - 29.1)           | 3.6 (1.9 - 8.7)          | 1.5% (0.9 - 3.2)     | 11.8% (0.9 - 22.6)  | 0.7 (0.3 - 1.0)   |
| Groin: Iliopsoas-Related      | 13.3 (10.1 - 17.1)          | 2.7 (1.0 - 5.1)          | 1.1% (0.5 - 1.9)     | 6.1% (2.1 - 14.2)   | 0.8 (0.4 - 1.3)   |
| Knee: Patellar Tendinopathy  | 41.7 (22.7 - 64.3)          | 8.3 (2.3 - 19.3)         | 3.5% (1.1 - 7.1)     | 20.0% (5.7 - 34.3)  | 1.3 (0.8 - 1.8)   |
| Shoulder: General            | 15.8 (10.9 - 20.8)          | 3.2 (1.1 - 4.2)          | 1.3% (0.5 - 1.5)     | None Registered     | 1.0 (0.5 - 1.5)   |
| Knee: MCL Sprain             | 32.2 (22.0 - 43.4)          | 6.4 (2.2 - 8.7)          | 2.7% (1.1 - 3.2)     | 13.0% (0.7 - 26.8)  | 1.2 (0.7 - 1.7)   |
| Knee: General                | 19.5 (12.1 - 27.3)          | 3.9 (1.2 - 5.5)          | 1.6% (0.6 - 2.0)     | None Registered     | 0.6 (0.3 - 1.0)   |
| Back: Disc Pathology         | 41.9 (12.9 - 85.1)          | 8.4 (1.3 - 17.0)         | 3.5% (0.6 - 6.2)     | 13.6% (0.7 - 28.0)  | 0.4 (0.1 - 0.8)   |
| Knee: Bruising/Haematoma     | 18.8 (10.7 - 31.3)          | 3.8 (1.1 - 6.3)          | 1.6% (0.5 - 3.4)     | 6.1% (2.1 - 14.2)   | 1.3 (0.8 - 1.8)   |
Table 5 (on next page)

Frequency and nature of match-play and training injuries per 1000 hours

Incidence rate ratio (IRR).
## Table 5 – Frequency and Nature of Match-Play and Training Injuries

### Match-Play Injuries

| Incidence | Non-Contact | Contact | NC : C IRR | Acute | Chronic/Overuse | A : C/O IRR |
|-----------|-------------|---------|------------|-------|----------------|-------------|
| **All Regions** | 49.8 (46.5 - 53.0) | 29.1 (26.6 - 31.6) | 21.0 (18.6 - 22.8) | 1.41 (1.23 - 1.60) | 41.9 (38.9 - 38.9) | 7.8 (6.5 - 9.1) | 5.35 (4.48 - 6.39) |
| **Lower Limb** | 38.7 (35.8 - 41.6) | 25.5 (23.2 - 27.9) | 13.2 (11.5 - 14.9) | 1.94 (1.66 - 2.26) | 31.7 (29.1 - 34.3) | 7.0 (5.8 - 8.2) | 4.52 (3.74 - 5.48) |
| **Upper Limb** | 7.1 (5.8 - 8.3) | 2.4 (1.7 - 3.1) | 4.7 (3.7 - 5.7) | 0.51 (0.3 - 0.74) | 6.6 (5.4 - 7.7) | 0.5 (0.2 - 0.8) | 13.11 (6.66 - 25.81) |
| **Trunk** | 2.5 (1.7 - 3.2) | 1.2 (0.7 - 1.7) | 1.3 (0.8 - 1.8) | 0.91 (0.51 - 1.65) | 2.1 (1.4 - 2.8) | 0.3 (0.1 - 0.6) | 6.33 (2.68 - 14.98) |
| **Head/Neck** | 1.6 (1.0 - 2.1) | - | 1.6 (1.0 - 2.1) | - | 1.6 (1.0 - 2.1) | - | - |

### Training Injuries

| Incidence | Non-Contact | Contact | NC : C IRR | Acute | Chronic/Overuse | A : C/O IRR |
|-----------|-------------|---------|------------|-------|----------------|-------------|
| **All Regions** | 3.9 (3.5 - 4.2) | 2.7 (2.4 - 3.0) | 1.2 (1.0 - 1.3) | 2.34 (1.97 - 2.78) | 2.9 (2.7 - 3.2) | 0.9 (0.8 - 1.1) | 3.24 (2.69 - 3.90) |
| **Lower Limb** | 3.2 (2.9 - 3.5) | 2.4 (2.2 - 2.7) | 0.8 (0.7 - 0.9) | 3.02 (2.48 - 3.69) | 2.4 (2.2 - 2.7) | 0.8 (0.7 - 1.0) | 2.99 (2.45 - 3.65) |
| **Upper Limb** | 0.2 (0.2 - 0.3) | 0.1 (0.0 - 0.1) | 0.2 (0.1 - 0.2) | 0.44 (0.23 - 0.88) | 0.2 (0.2 - 0.3) | 0.02 (0.00 - 0.04) | 12.00 (3.70 - 38.97) |
| **Trunk** | 0.3 (0.2 - 0.4) | 0.2 (0.1 - 0.2) | 0.1 (0.1 - 0.2) | 1.71 (0.94 - 3.10) | 0.2 (0.1 - 0.3) | 0.1 (0.0 - 0.1) | 2.54 (1.34 - 4.82) |
| **Head/Neck** | 0.1 (0.1 - 0.1) | 0.02 (0.00 - 0.04) | 0.1 (0.0 - 0.1) | 0.25 (0.07 - 0.89) | 0.1 (0.1 - 0.1) | - | - |
Table 6 (on next page)

Injury severity

Incidence rate ratio (IRR).
Table 6 – Incidence Rate Ratio Comparing Frequency of Match-Play to Training Injuries Per Type

| Region       | IRR     | Non-Contact | Contact | Acute    | Chronic/Overuse | Mild      | Moderate | Severe   |
|--------------|---------|-------------|---------|----------|-----------------|-----------|----------|----------|
| All Regions  | 12.93 (11.69 - 14.32) | 10.78 (9.50 - 12.24) | 17.97 (15.07 - 21.43) | 14.26 (12.72 - 15.98) | 8.64 (6.86 - 10.89) | 10.94 (9.00 - 13.29) | 13.26 (11.48 - 15.31) | 15.98 (12.78 - 19.99) |
| Lower Limb   | 12.01 (10.73 - 13.45) | 10.54 (9.22 - 12.06) | 16.46 (13.28 - 20.39) | 13.12 (11.54 - 14.92) | 8.68 (6.79 - 11.09) | 10.50 (8.44 - 13.05) | 11.78 (1.07 - 13.79) | 14.90 (11.58 - 19.18) |
| Upper Limb   | 28.94 (20.22 - 41.42) | 31.85 (16.80 - 80.38) | 27.65 (17.93 - 42.65) | 29.13 (20.06 - 42.29) | 26.66 (7.22 - 98.46) | 33.01 (14.33 - 78.94) | 23.96 (14.85 - 38.65) | 61.22 (30.43 - 123.16) |
| Trunk        | 8.50 (5.62 - 12.85)   | 6.44 (3.67 - 11.28)  | 12.02 (6.43 - 22.50)  | 10.23 (6.42 - 16.31)  | 4.10 (1.56 - 10.79)  | 5.43 (2.57 - 11.50)  | 19.39 (9.50 - 39.50)  | 8.00 (3.25 - 19.68)   |
| Head/Neck    | 16.59 (8.86 - 31.05)  | -             | 20.74 (10.55 - 40.77) | 16.59 (8.86 - 31.05)  | -               | 12.22 (4.92 - 30.38) | 41.47 (11.92 - 144.31) | 11.85 (2.85 - 52.94)  |
Table 7 (on next page)

Time-loss per activity

Mild (1-7 days), moderate (8-28 days), severe (29+ days). Incidence reported per 1000 exposure hours.
### Table 7 – Injury Severity

| Location            | Mild Incidence | Moderate Incidence | Severe Incidence |
|---------------------|----------------|-------------------|------------------|
| All Injuries        | 2.5 (2.2 - 2.7) | 4.5 (4.2 - 4.8)   | 2.1 (1.9 - 2.3)  |
| Lower limb          | 1.9 (1.7 - 2.1) | 3.7 (3.4 - 4.0)   | 1.6 (1.5 - 1.8)  |
| Upper Limb          | 0.1 (0.1 - 0.2) | 0.3 (0.2 - 0.4)   | 0.2 (0.1 - 0.2)  |
| Trunk               | 0.2 (0.2 - 0.3) | 0.2 (0.2 - 0.3)   | 0.1 (0.1 - 0.2)  |
| Head/Neck           | 0.1 (0.1 - 0.2) | 0.1 (0.1 - 0.2)   | 0.1 (0.0 - 0.1)  |
| Training Injuries   | 1.1 (1.0 - 1.3) | 1.9 (1.7 - 2.1)   | 0.7 (0.6 - 0.9)  |
| Lower limb          | 0.9 (0.8 - 1.1) | 1.7 (1.5 - 1.9)   | 0.6 (0.5 - 0.7)  |
| Upper Limb          | 0.04 (0.01 - 0.08) | 0.14 (0.09 - 0.20) | 0.06 (0.02 - 0.09) |
| Trunk               | 0.11 (0.06 - 0.16) | 0.07 (0.03 - 0.11) | 0.06 (0.02 - 0.10) |
| Head/Neck           | 0.05 (0.02 - 0.08) | 0.02 (0.00 - 0.04) | 0.02 (0.00 - 0.04) |
| Match-Injuries      | 12.5 (10.8 - 14.1) | 25.5 (23.1 - 27.8) | 11.9 (10.3 - 13.5) |
| Lower limb          | 9.8 (8.3 - 11.2) | 19.9 (17.8 - 22.0) | 9.0 (7.6 - 10.3)  |
| Upper Limb          | 1.5 (0.9 - 2.0) | 3.5 (2.6 - 4.3)   | 2.2 (1.5 - 2.9)  |
| Trunk               | 0.6 (0.3 - 1.0) | 1.3 (0.8 - 1.9)   | 0.5 (0.2 - 0.8)  |
| Head/Neck           | 0.6 (0.3 - 1.0) | 0.8 (0.4 - 1.2)   | 0.2 (0.0 - 0.4)  |
Table 8 (on next page)

Time-loss and injury burden per activity

Match-play (MP), training (TR), relative ratio (RR).
Table 8 – Time-Loss Per Activity

|                | Mean Time-Loss Days | Percentage of All Time-Loss | Injury Burden MP : TR RR |
|----------------|---------------------|-----------------------------|--------------------------|
|                | All Injuries        | Match-Play                  | Training                 | All Injuries        | Match-Play                  | Training                 |                           |
| All Regions    | 25.7 (23.4 - 28.3)  | 24.0 (21.6 - 26.6)          | 22.8 (19.3 - 27.2)       | -                     | 51.8% (51.2 - 52.1)         | 39.5% (36.7 - 42.8)       | 13.44 (12.34 - 14.87)     |
| Lower Limb     | 25.4 (22.8 - 28.5)  | 23.5 (21.1 - 26.4)          | 22.6 (18.9 - 27.2)       | 79.1% (77.9 - 80.6)   | 76.1% (76.0 - 77.2)         | 83.0% (82.0 - 83.7)       | 12.58 (11.54 - 13.78)     |
| Upper Limb     | 28.8 (22.5 - 36.4)  | 29.9 (22.3 - 38.3)          | 23.7 (16.8 - 31.3)       | 11.2% (9.6 - 12.8)    | 17.7% (14.6 - 20.4)         | 6.6% (5.5 - 7.3)          | 44.79 (38.49 - 54.50)     |
| Trunk          | 28.9 (18.6 - 42.6)  | 22.4 (13.3 - 35.8)          | 27.0 (13.4 - 45.2)       | 7.4% (5.2 - 9.9)      | 4.6% (3.0 - 6.6)            | 8.9% (5.2 - 12.4)         | 6.94 (6.34 - 8.44)        |
| Head/Neck      | 13.3 (8.8 - 18.2)   | 11.8 (7.8 - 17.4)           | 16.0 (7.5 - 25.3)        | 1.8% (1.3 - 2.2)      | 1.5% (1.1 - 2.0)            | 1.7% (0.9 - 2.3)          | 11.80 (10.4 - 14.44)      |