The UEFA Elite Club Injury Study (E C I S) was initiated by and is funded and supported by UEFA.

This report has been produced on behalf of the UEFA Medical Committee by:
Professor Jan Ekstrand, MD, PhD, Linkoping University
Former first vice-chairman of the UEFA Medical Committee

Correspondence should be addressed to:

Injury Study Group
Professor Jan Ekstrand
Hertig Karlsatan 2
582 21 Linköping
Sweden
jan.ekstrand@telia.com

Håkan Bengtsson Anna Hallén
info.frq@telia.com info.frq@telia.com

UEFA
Marc Vouillamoz
Head of Medical and Anti-Doping Unit
marc.vouillamoz@uefa.ch

Niki Papadimitriou
UEFA Medical Assistant
niki.papadimitriou@uefa.com

Route de Genève 46
1260 Nyon 2
Switzerland
+41 848 00 27 27
+41 22 707 27 34 (fax)
Table of Contents

1 Participating clubs .................................................................................................................. 3
2 Presentation ............................................................................................................................ 3
3 Interpretation of results .......................................................................................................... 4
4 Exposure ................................................................................................................................ 5
5 General injuries ...................................................................................................................... 8
  5.1 General injury patterns ....................................................................................................... 8
6 Training injuries ...................................................................................................................... 12
  6.1 Training injury rate ........................................................................................................... 12
  6.2 Days’ absence for training injuries .................................................................................... 14
  6.3 Burden of training injuries ............................................................................................... 14
7 Match injuries ........................................................................................................................ 16
  7.1 Match injury rate .............................................................................................................. 16
  7.2 Days’ absence for match injuries ....................................................................................... 18
  7.3 Burden of match injuries .................................................................................................. 18
8 Severe injuries ........................................................................................................................ 20
  8.1 Severe injury patterns ...................................................................................................... 20
  8.2 Severe injury rate ............................................................................................................. 21
9 Muscle injuries ...................................................................................................................... 23
  9.1 Muscle injury patterns ..................................................................................................... 23
  9.2 Muscle injury rate ........................................................................................................... 24
  9.3 Days’ absence for muscle injuries .................................................................................... 26
  9.4 Burden of muscle injuries ............................................................................................... 27
10 Ligament injuries .................................................................................................................. 29
  10.1 Ligament injury patterns ................................................................................................. 29
  10.2 Ligament injury rate ....................................................................................................... 30
  10.3 Days’ absence for ligament injuries ................................................................................. 32
  10.4 Burden of ligament injuries ........................................................................................... 33
11 Re-injuries .............................................................................................................................. 35
  11.1 Re-injury patterns ........................................................................................................... 35
  11.2 Re-injury proportion ........................................................................................................ 36
12 Squad attendance/availability and absence ......................................................................... 38
  12.1 Squad attendance/availability ......................................................................................... 38
  12.2 Squad absence ............................................................................................................... 42
    12.2.1 Absence due to injury .................................................................................................. 43
  12.3 Number of training sessions/matches missed because of injury ........................................ 46
1 Participating clubs
This season report contains fictional results from July to May of the 2018/19 season for 25 Example Teams.

2 Presentation
The report is divided into nine sections, with data on exposure, general injuries, training injuries, match injuries, severe injuries, muscle injuries, ligament injuries, re-injuries, and, squad attendance/availability and absence. These sections contain data of the 2018/19 season from your club in comparison with other participating clubs described as means of the whole season as well as specifically for each month (July-May). Each section also contains historic data which gives you the opportunity to compare the current season with data from your club and other participating clubs in previous seasons. The injury sections are generally split into four sub-sections:

- **Injury patterns**: the relative distribution of injuries of this kind, looking at injury location, type, overuse/trauma, contact/non-contact, severity and re-injury rate.

- **Injury rate**: the number of injuries of this kind relative to exposure time, allowing the individual injury rate to be evaluated. Injury rate is expressed as the number of injuries/1,000 hours of exposure.

- **Days’ absence**: the mean number of days lost because of injuries of this kind.

- **Injury burden**: a combined measure of the frequency (injury rate) and severity (days’ absence) of injuries of this kind giving the burden of injury for the player and the consequences for the team. Injury burden is expressed as the number of days of absence/1,000 hours of exposure. Example: Team A with 10 injuries in 5,000 hours, each resulting in an absence of 10 days on average, has an injury burden of 20 days/1,000 hours. Team B with 20 injuries in 5,000 hours, each resulting in an absence of 5 days on average, also has an injury burden of 20 days/1,000 hours.
3 Interpretation of results

When comparing your club’s results with those of other participating clubs, please bear the following in mind:

- Because of the limited amounts of data collected over one season, the injury rates presented are sometimes based on just a few actual injuries. This means that some results should be interpreted with caution.

- The overall number of injuries varies between clubs, mainly because of the number of minor injuries. It is therefore important to look not only at the overall injury rate, but also at the data on severe injuries and squad availability, as these variables may have a greater impact on the club.

- In the case of players who were still injured at the end of the season, we have used either the club’s estimated return date or an approximation of severity based on the mean absence for this particular injury. Some data on the number of days' absence and injury risk presented in the report could therefore be based on approximate values/estimates.

We hope that you will find this report useful in your daily work treating and preventing injuries at your club. Please do not hesitate to contact FRG if you have any questions about how to interpret the results.
4 Exposure

In total, 180 000 hours of exposure were recorded during the season in the 25 Example Teams, with approximately 150 000 training hours (83%) and 30 000 match hours (17%). Team x reported 8 000 hours of total exposure, with 7 000 training hours (88%) and 1 000 match hours (12%).

On average, teams reported 230 training sessions and 60 matches over the review period. Since the reporting period differed between teams, we have also calculated a monthly training and match load. On average, teams had 21 training sessions and 4.9 matches each month, giving an average training-to-match exposure ratio of 6.0 hours of training for each hour of match play.

Figure 1. Number of training sessions per month
Figure 2. Number of matches per month

Figure 3. Number of training sessions (blue bars) and matches (red bars) for Team X over the season
Figure 4. Ratio of training hours to match hours

Figure 5. Ratio of training hours to match hours for Team X over the season in comparison to previous seasons
5 General injuries

5.1 General injury patterns

The figures below show the relative distribution (%) of different injuries. In total the 20 UEFA Champions League teams reported 868 injuries, with 410 training injuries (47%) and 458 match injuries (53%). There were 177 severe injuries (20%), 437 muscle injuries (50%) and 126 ligament injuries (15%).

Team x reported xx injuries (xx training injuries; xx match injuries) during the season, including xx severe injuries, xx muscle injuries and xx ligament injuries.

*Figure 6.* Distribution of injury locations
**Figure 7.** Distribution of injury types

<table>
<thead>
<tr>
<th></th>
<th>Team X Current season</th>
<th>All Teams Current Season</th>
<th>Team X Previous Seasons</th>
<th>All Teams Previous Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscle injuries</td>
<td>36%</td>
<td>36%</td>
<td>38%</td>
<td>35%</td>
</tr>
<tr>
<td>Ligament injuries</td>
<td>12%</td>
<td>21%</td>
<td>14%</td>
<td>19%</td>
</tr>
<tr>
<td>Contusions</td>
<td>42%</td>
<td>33%</td>
<td>40%</td>
<td>34%</td>
</tr>
<tr>
<td>Other</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Figure 8.** Distribution of overuse/traumatic injuries

<table>
<thead>
<tr>
<th></th>
<th>Team X Current season</th>
<th>All Teams Current Season</th>
<th>Team X Previous Seasons</th>
<th>All Teams Previous Seasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overuse injuries</td>
<td>71%</td>
<td>66%</td>
<td>68%</td>
<td>65%</td>
</tr>
<tr>
<td>Traumatic injuries</td>
<td>29%</td>
<td>34%</td>
<td>32%</td>
<td>35%</td>
</tr>
</tbody>
</table>
Figure 9. Distribution of contact/non-contact injuries

Figure 10. Distribution of injury severities
Figure 11. Distribution of re-injuries

![Bar chart showing distribution of re-injuries across different team and season categories.](chart.png)
6 Training injuries

6.1 Training injury rate

The mean training injury rate for all teams was 1.7 injuries for every 1,000 training hours, with individual rates ranging from 0.1 to 4.9 at the various clubs.

Figure 12. Training injury rate

Figure 13. Training injury rates in previous seasons
Figure 14. Training injury rates for Team X over the season in comparison to previous seasons.
6.2 Days’ absence for training injuries
The average absence for training injuries among the teams was 18 days, ranging from 8 to 31 days at the various clubs.

Figure 15. Days’ absence for training injuries

6.3 Burden of training injuries
The mean injury burden in training was 36 days’ absence/1,000 hours, ranging from 2 to 82 at the various clubs.

Figure 16. Training injury burden
**Figure 17.** Training injury burden in previous seasons

**Figure 18.** Training injury burden for Team X over the season in comparison to previous seasons
7 Match injuries

7.1 Match injury rate
The mean match injury rate for all teams was 21 injuries for every 1 000 match hours, with individual rates ranging from 8 to 31.

**Figure 19.** Match injury rate

**Figure 20.** Match injury rates in previous seasons
**Figure 21.** Match injury rate for Team X over the season in comparison to previous seasons.
7.2 Days’ absence for match injuries
The average absence for match injuries among the teams was 23 days, ranging from 7 to 44 days at the various clubs.

Figure 22. Days’ absence for match injuries

7.3 Burden of match injuries
The mean injury burden in match play was 430 days’ absence/1,000 hours, ranging from 168 to 694 at the various clubs.

Figure 23. Match injury burden
**Figure 24.** Match injury burden in previous seasons

**Figure 25.** Match injury burden for Team X over the season in comparison to previous seasons
8 Severe injuries

8.1 Severe injury patterns

Injuries resulting in more than four weeks’ absence are classified as severe injuries.

**Figure 26.** Distribution of severe injury locations

**Figure 27.** Distribution of severe injury types
8.2 Severe injury rate

The mean severe injury rate for all teams was 1.4 severe injuries for every 1,000 hours, with individual rates ranging from 0.1 to 2.9. Please note that since total absences are unknown where players were still injured at the time of writing, the true figures may differ slightly from those presented here.

**Figure 28.** Severe injury rate

![Severe injury rate chart](image)

**Figure 29.** Severe injury rates in previous seasons

![Severe injury rates in previous seasons chart](image)
Figure 30. Severe injury rates for Team X over the season in comparison to previous seasons.
9 Muscle injuries

9.1 Muscle injury patterns

Figure 31. Distribution of muscle injury locations

Figure 32. Distribution of muscle injury severities
9.2 Muscle injury rate
The mean muscle injury rate for all teams was 2.8 injuries for every 1,000 hours, with individual rates ranging from 0.1 to 5.5.

Figure 34. Muscle injury rate
Figure 35. Muscle injury rates in previous seasons

Figure 36. Muscle injury rates for Team X over the season in comparison to previous seasons
9.3 Days’ absence for muscle injury

The average absence for muscle injuries among the teams was 18 days, ranging from 10 to 29 days at the various clubs.

*Figure 37.* Days’ absence for muscle injuries
9.4 Burden of muscle injuries

The mean injury burden for muscle injury was 37 days’ absence/1,000 hours, ranging from 12 to 60 at the various clubs.

**Figure 38.** Muscle injury burden

**Figure 39.** Muscle injury burden in previous seasons
Figure 40. Muscle injury burden for Team X over the season in comparison to previous seasons.
10 Ligament injuries

10.1 Ligament injury patterns

**Figure 41.** Distribution of ligament injury locations

**Figure 42.** Distribution of ligament injury severities
Figure 43. Distribution of re-injuries for ligament injuries

10.2 Ligament injury rate
The mean ligament injury rate for all teams was 1.6 injuries for every 1,000 hours, with individual rates ranging from 0.1 to 2.9 at the various clubs.

Figure 44. Ligament injury rate
**Figure 45.** Ligament injury rates in previous seasons

![Graph showing ligament injury rates in previous seasons](image)

**Figure 46.** Ligament injury rates for Team X over the season in comparison to previous seasons

![Graph showing ligament injury rates for Team X over the season](image)
10.3 Days’ absence for ligament injuries

The average absence for ligament injuries among the teams was 23 days, ranging from 11 to 33 days at the various clubs.

*Figure 47.* Days’ absence for ligament injuries
10.4 Burden of ligament injuries

The mean burden for ligament injury was 35 days’ absence/1 000 hours, ranging from 5 to 60 at the various clubs.

**Figure 48.** Ligament injury burden

**Figure 49.** Ligament injury burden in previous seasons
Figure 50. Ligament injury burden for Team X over the season in comparison to previous seasons.
11 Re-injuries

11.1 Re-injury patterns

*Figure 51.* Distribution of re-injury locations

*Figure 52.* Distribution of re-injury types
11.2 Re-injury proportion

On average, 16% of injuries sustained were re-injuries, ranging from 5% to 25% at the various clubs.
Figure 55. Re-injury proportions in previous seasons
12 Squad attendance/availability and absence
All data in the charts in this section is in the form of percentages.

12.1 Squad attendance/availability
Squad attendance/availability refers to the average percentage of players who participated in training sessions or were available for match selection over the review period. An attendance/availability rate of 100% would mean that no player was absent because of injury, illness, international duty or any other reason.

Figure 56. Squad attendance rates for training
**Figure 57.** Squad attendance rates for training in previous seasons

**Figure 58.** Squad attendance in training for Team X over the season in comparison to previous seasons
**Figure 59.** Squad availability rates for matches

![Bar chart showing match availability and absence rates for various teams and seasons.]

**Figure 60.** Squad availability rates for matches in previous seasons

![Line chart showing match availability for Team X and All Teams across different seasons.]
**Figure 61.** Squad availability for matches for Team X over the season in comparison to previous seasons.

![Chart showing squad availability for matches for Team X over the season in comparison to previous seasons.](chart.png)
12.2 Squad absence
The charts below break players’ absences down by reason.

*Figure 62.* Reasons for absence from training sessions

![Chart 1](chart1.png)

*Figure 63.* Reasons for absence from matches

![Chart 2](chart2.png)
12.2.1 Absence due to injury

Figure 64. Absence from training sessions due to injury

Figure 65. Absence from training sessions due to injury in previous seasons
**Figure 66.** Absence from training sessions due to injury for Team X over the season in comparison to previous seasons

**Figure 67.** Absence from matches due to injury
Figure 68. Absence from matches due to injury in previous seasons

Figure 69. Absence from matches due to injury for Team X over the season in comparison to previous seasons
12.3 Number of training sessions/matches missed because of injury

The consequences of injuries have also been assessed in terms of the number of training sessions and matches that players missed during the review period. On average, across all clubs, each player missed 1.7 training sessions and 0.4 matches each month because of injury. Data specific to each club is presented below.

Figure 70. Number of training sessions missed per player per month owing to injury

![Figure 70](image_url)

**Missed trainings per player per month**

- ET: 1.2
- ALL: 3.8

Figure 71. Number of matches missed per player per month owing to injury

![Figure 71](image_url)

**Missed matches per player per month**

- ET: 0.4
- ALL: 0.9