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Injury risk in academy level rugby league match play: a single season prospective cohort study

Dr. Jason Tee, Prof. Kevin Till and Prof. Ben Jones

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Rationale

- The safety of the sport is a major concern for players, parents, coaches, and the sport’s governing body.

- Currently, there is no published research regarding injury in academy level rugby league.

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Methods

Data collection

• Team physiotherapists from three academies collected injury data one season
• Physiotherapists were paid for services as “club injury surveillance officers”

Injury Definition

“Any physical complaint, that was sustained by a player during a rugby match or rugby training, that results in a player being unable to take a full part in future rugby training or match play for a period of >24 hours.”

Fuller et. al., (2007) IRB consensus statement. BJSM

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Participants

- 81 academy level rugby league players
- Age 17.8 ± 0.8 years
- Stature 108 ± 6
- Body mass 87.5 ± 11.3 kg
- Exposure 1022 hours of match play

Competition Demands

Season - February to August

20 matches in 27 weeks (plus play off matches)

Matches

- High-speed running and sprinting
- Short bouts of standing, walking and jogging
- Frequent collisions and wrestling bouts

Johnston et al., Sports Med 2014

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Injury outcomes

Injury incidence:
85 injuries/1000 h (95%CI 67-103)

Mean severity:
22 ± 19 days

Injury burden:
1870 days per 1000 h match play

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Comparison with professional competition

No difference in incidence, severity or burden European Super League
Fitzpatrick et al., 2017 J Sci Med Sport

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Most costly injuries

- Shoulder injuries account for 28% of total injury burden
- Concussion occurring more frequently than professional rugby league

### Injuries

- Shoulder dislocation (114)
- Shoulder cartilage injury (219)
- Achilles Tendon injury (126)
- Shoulder and ligament injury (116 each)
- Hip/Groin Tendon injury (74)
- Knee ligament injury (322)
- Anterior thigh contusion (40)
- Ankle ligament sprain (322)
- Concussion (316)

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<table>
<thead>
<tr>
<th>Injury</th>
<th>Academy Rugby League</th>
<th>European Super League</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concussion</td>
<td>316 days/1000 h</td>
<td>55 days/1000 h</td>
</tr>
<tr>
<td>Shoulder</td>
<td>525 days/1000 h</td>
<td>276 /1000 h</td>
</tr>
<tr>
<td>Hamstring</td>
<td>29 days /1000 h</td>
<td>101 /1000 h</td>
</tr>
<tr>
<td>Knee</td>
<td>261 days /1000 h</td>
<td>470 /1000 h</td>
</tr>
<tr>
<td>Ankle</td>
<td>322 /1000 h</td>
<td>256 /1000 h</td>
</tr>
</tbody>
</table>

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Injury risk factors

Backs vs. forwards

- 63% Forwards
- 37% Backs

Time in match

- 1st quarter 10%
- 2nd quarter 36%
- 3rd quarter 21%
- 4th quarter 33%

63% Forwards
37% Backs

% of total injury burden

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Injury risk factors

Contact vs. Non-contact

- 72% Contact
- 28% Non-contact

Contact event

- 63% Tackled
- 29% Tackler
- 2% Collision
- 6% Ruck area involvement

% of total injury burden

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Summary

• First research to document the injury risk of Academy level rugby league in the UK.
• The injury risk and burden is the same in RFL Academy rugby league and European Super League rugby competitions.
• Teams can expect to lose 32 player days to injury per match played.
• On average, teams will have 4 players (15% squad) unavailable for selection each week due to injury.
• Forwards are at a much higher injury risk than backs
• The majority of injuries are the result of tackle events with the tackled player injured more often than the tackler.

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Call to action!

What next?

Injury intervention focusing on
• Tackle technique
• Shoulder strength and stability
• Ankle strength and stability

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