Lowering of the tackle height

What does the science tell us?
What are we looking to achieve?

Incidence (/1000h) of reported **Concussion** and the proportion (%) of all injuries that were reported concussions at different levels of rugby union in England 2017-2020

A reduction in head injury and concussion risk
Why are we considering the tackle?

Proportion (%) of all concussion that were sustained in the tackle at the different levels of rugby union in England to the tackler and ball carrier

60-75% of concussions occur in the tackle

Note - Adult female community injury surveillance started in 21-22 and has not reported yet and age-group female injury surveillance started in 22-23
What is the approach that has been used?

Define the problem

- Rugby Head acceleration event and concussion risk
- Injury surveillance & smart mouthguard studies

Identify risk and potential protective factors

- Evaluation of risk factors
  - Video analysis of HIA & concussion tackle risk 2016 –
  - Smart mouthguard studies 2022-

Develop and evaluate reduction strategies

- Evaluate strategies
  - Championship cup arm-pit height evaluation 18-19
  - Stellenbosch arm-pit height evaluation 2019
  - FFR waist-height evaluation 2019 -
  - RFU age-group arm-pit height 2021-2

Assure effective implementation

- Formulation of RFU position
- Agree approach for roll out
Video analysis of Tackles (2016 – present)

Higher contact on the ball carrier and closer head proximity of players in relation to one another → increase in head injury & concussion risk

Subsequent evaluations on U20s, Elite Women and two more recent cohorts of adult men have all generated the same findings.
Develop & evaluate real-world reduction strategies

Arm-pit height
No formal coaching of tackle technique
Compensatory player behaviour change
No change in overall concussion risk

Arm-pit height
No formal coaching of tackle technique
Player behaviour change
Trend to reduction in concussion & injury risk
No change in overall concussion risk

Waist height
No forward projection of BC at contact
No simultaneous assist tackle
Formal coaching of tackle technique
Decline in penalties for illegal tackles
Reduction in suspected concussions
Positive changes in shape of the game

Arm-pit tackle height in English age-group game 21-22
No significant change in concussion risk (Y-RISP)
Why we think the navel is the optimal height

**Community Men**
Levels 5-9, 2690 tackles from 10 games

- **4% (10 PER MATCH)**, Head and Neck
- **13% (35 PER MATCH)**, Shoulder and Armpit
- **52% (141 PER MATCH)**, Torso
- **17% (45 PER MATCH)**, Upper Leg
- **3% (8 PER MATCH)**, Lower Leg
- **11% (29 PER MATCH)**, Unknown

**U-18 Schools**
3481 tackles from 16 games

- **5% (11 PER MATCH)**, Head and Neck
- **15% (33 PER MATCH)**, Shoulder and Armpit
- **44% (96 PER MATCH)**, Torso
- **19% (41 PER MATCH)**, Upper Leg
- **3% (7 PER MATCH)**, Lower Leg
- **14% (31 PER MATCH)**, Unknown

Current point of tackler contact on the ball carrier (the tackler’s head will be higher than this)
Won’t this increase the head injury risk for the tackler?

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Risk</th>
<th>Incident Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torso</td>
<td>0.9</td>
<td>1 in 1125</td>
</tr>
<tr>
<td>Upper leg</td>
<td>0.9</td>
<td>1 in 1083</td>
</tr>
<tr>
<td>Lower leg</td>
<td>1.8</td>
<td>1 in 573</td>
</tr>
<tr>
<td>Hip</td>
<td>2.0</td>
<td>1 in 491</td>
</tr>
<tr>
<td>Shoulder</td>
<td>3.4</td>
<td>1 in 299</td>
</tr>
<tr>
<td>Arm</td>
<td>4.0</td>
<td>1 in 252</td>
</tr>
<tr>
<td>Knee</td>
<td>6.2</td>
<td>1 in 161</td>
</tr>
<tr>
<td>Elbow</td>
<td>6.4</td>
<td>1 in 157</td>
</tr>
<tr>
<td>Head</td>
<td>11.8/1000</td>
<td>1 in 85</td>
</tr>
</tbody>
</table>

Head to head contact is the highest risk for the tackler compared to all other body parts.
As a consequence we can expect the head injury risk to reduce for the tackler.
Why do we need to consider late dipping by the ball carrier?

To enable a bent tackler to safely tackle a bent ball carrier head-on

To provide the tackler with a safe and effective tackle choice

Encouraging evasion by the ball carrier has been shown to reduce head injury risk
What effect do we anticipate these changes will have?

We believe that this proposed reduction in tackle height will reduce head injury and concussion risk.

We need to be prepared to be patient.

We will continue to monitor Concussion risk, HAE exposure (selected populations), game shape,...and make changes if these are needed.
Thank you

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