Comparison of the R44 Test Data using ISOFIX Booster / Seatbelt Booster

JASIC
Test Procedure

Dummy (Hybrid III 3YO or Q3)

CRS

ECE Seat

Sled

Sled Acceleration, Velocity (ECE R44)

Sled Test System
Dummy

Hybrid III
3YO

Q3
Test Video

Without ISOFIX

With ISOFIX(ISOFIT)
Test Video

Without ISOFIX

With ISOFIX (ISOFIT)
Hybrid III 3YO Acceleration Time Histories

Hybrid III 3YO Head Acceleration

Hybrid III 3YO Chest Acceleration

Hybrid III 3YO Pelvis Acceleration
Q3 Acceleration Time Histories

Q3 Head Acceleration

Q3 Chest Acceleration

Q3 Toe Acceleration
## Injury Measures

<table>
<thead>
<tr>
<th>Dummy</th>
<th>Hybrid III 3YO</th>
<th></th>
<th>Q3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CRS with ISOFIX</td>
<td>Seatbelt</td>
<td>with ISOFIX</td>
<td>Seatbelt</td>
</tr>
<tr>
<td>HIC15</td>
<td>349.6</td>
<td>297.5</td>
<td>448.9</td>
<td>389.5</td>
</tr>
<tr>
<td>HIC36</td>
<td>653.2</td>
<td>512.6</td>
<td>871.6</td>
<td>639.1</td>
</tr>
<tr>
<td>Head 3ms Acceleration</td>
<td>56.6</td>
<td>53.8</td>
<td>65.7</td>
<td>60.3</td>
</tr>
<tr>
<td>Chest 3ms Acceleration</td>
<td>47.3</td>
<td>39.6</td>
<td>37.5</td>
<td>34.0</td>
</tr>
<tr>
<td>Chest Deflection</td>
<td>35.4</td>
<td>35.5</td>
<td>38.0</td>
<td>32.2</td>
</tr>
<tr>
<td>Nij (Ntf)</td>
<td>0.66</td>
<td>0.96</td>
<td>0.86</td>
<td>1.04</td>
</tr>
<tr>
<td>Nij (Nte)</td>
<td>0.63</td>
<td>0.89</td>
<td>0.51</td>
<td>0.92</td>
</tr>
<tr>
<td>Nij (Ncf)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.13</td>
<td>0.00</td>
</tr>
<tr>
<td>Nij (Nce)</td>
<td>0.21</td>
<td>0.00</td>
<td>0.17</td>
<td>0.00</td>
</tr>
<tr>
<td>Neck Fx(front)</td>
<td>991.0</td>
<td>649.2</td>
<td>378.3</td>
<td>299.4</td>
</tr>
<tr>
<td>Neck Fx(rear)</td>
<td>4.4</td>
<td>0.3</td>
<td>52.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Neck Fz(extension)</td>
<td>1356.6</td>
<td>1252.6</td>
<td>2925.9</td>
<td>1857.7</td>
</tr>
<tr>
<td>Neck Fz(Compression)</td>
<td>99.4</td>
<td>51.3</td>
<td>34.8</td>
<td>4.3</td>
</tr>
<tr>
<td>Neck My(Front)</td>
<td>53.8</td>
<td>39.7</td>
<td>13.5</td>
<td>13.3</td>
</tr>
<tr>
<td>Neck My (Rear)</td>
<td>18.3</td>
<td>14.9</td>
<td>16.7</td>
<td>12.3</td>
</tr>
<tr>
<td>Head excursion</td>
<td>393.3</td>
<td>401.5</td>
<td>407.0</td>
<td>429.0</td>
</tr>
</tbody>
</table>
Hybrid III 3YO Injury Measures
Q3 Injury Measures

- **HIC15**
  - ISO FIX: [Value]
  - Seatbelt: [Value]

- **Head excision**
  - ISO FIX: [Value]
  - Seatbelt: [Value]

- **Chest 3ms Acceleration (G)**
  - ISO FIX: [Value]
  - Seatbelt: [Value]

- **Neck Compression Moment - Neck Extension Moment**
  - ISO FIX: [Value]
  - Seatbelt: [Value]
Conclusion

• Q3 dummy and Hybrid III 3YO dummy Accelerations were almost similar both ISOFIX and seatbelt.

• The maximum injury measures were almost similar both ISOFIX and seatbelt.