Explanation of the Bio-Rating Method of Maltese M. R. (NHTSA) and Application the Method to Flex-PLI 2003R using UVA Dynamic Bending Corridors for Mid-Thigh, Knee, and Mid-Leg

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**Dummy-to-Human Comparison**

- Human surrogate and dummy response signals are overlayed
- The dummy response (D), surrogate mean (\(\bar{\mu}\)), and standard deviation (SD) are then combined to quantify (R) how well the dummy matches the cadaver.
Rating Dummy Biofidelity

<table>
<thead>
<tr>
<th>0 &lt;= B &lt;= 1</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &lt; B &lt;= 2</td>
<td>Good</td>
</tr>
<tr>
<td>2 &lt; B &lt;= 3</td>
<td>Moderate</td>
</tr>
<tr>
<td>3 &lt; B</td>
<td>Poor</td>
</tr>
</tbody>
</table>

Smaller/Better

Example

Bio Rating Method of Maltese M. R. (NHTSA), cont.

![Graph showing thorax plate force over time with various curves and markers for SID, ES2, and WorldSID with mean +/- std dev markers.](image)
Bio-Rating of FlexPLI 2003R for UVA Dynamic Mid-Leg Bending Corridor
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Bio-Rating of FlexPLI 2003R for UVA Dynamic Knee Joint Bending Corridor
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