Update on the WorldSID injury risk curves

on behalf of ISO/WG6 and ACEA-TFD

GRSP Pole Impact Informal Group
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WorldSID 50th injury risk curves

The development of the WorldSID 50th injury risk curves was performed on behalf of ISO/WG6 and ACEA-TFD and aimed at promoting a scientific consensus from biomechanical experts from international institutions, car manufacturers as well as universities regarding the proposed injury risk curves.

Thanks to the participation of numerous biomechanical experts, WorldSID 50th injury risk curves were published in ISO/WG6/TR12350 and Stapp in 2009.
Issue #1: statistical method

- In 2009, the injury risk curves were given with several statistical methods because there was no consensus on the method to be used in the literature.

- Since then, progress on the statistical methods within ISO/WG6.
  - At the last ISO/WG6 meeting, it was agreed to choose the survival analysis as a basis to build the injury risk curves.
In 2009, the WorldSID 50th injury risk curves were built as a function of the commonly used measurements.

The measurements to be considered as injury criterion will be discussed in ISO/WG6.

For example, the pelvis injury risk curves were built as a function of the $Y_{3\text{ ms}}$ pelvis acceleration and of the pubic force. What is the more relevant injury risk curve?
WorldSID 5th injury risk curves

- As for the WorldSID 50th, the development of the WorldSID 5th injury risk curves will be performed on behalf of ISO/WG6 and ACEA-TFD and will aim at promoting a scientific consensus from biomechanical experts.

- The methodology developed for the WorldSID 50th will apply with some preliminary discussions on scaling of the test conditions.
  - 1st web meeting on the 22nd of February.

- ISO/WG6/TR12350 will be updated with the WorldSID 5th injury risk curves.
summary

50th centile

- Agreement on raw data ✓
- Agreement on the processing method ✓
- Construction of WS 50th curves based on several potential injury predictors ✓
- Agreement on the best predictor(s)
- Agreement on the recommended threshold(s)

- Do the same for the WS5th curve(s) In progress