

UPDATE ON NHTSA'S OBLIQUE RESEARCH PROGRAM

James Saunders

Dan Parent

National Highway Traffic Safety Administration



THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

CURRENT RESEARCH OBJECTIVE

- **QUESTION**

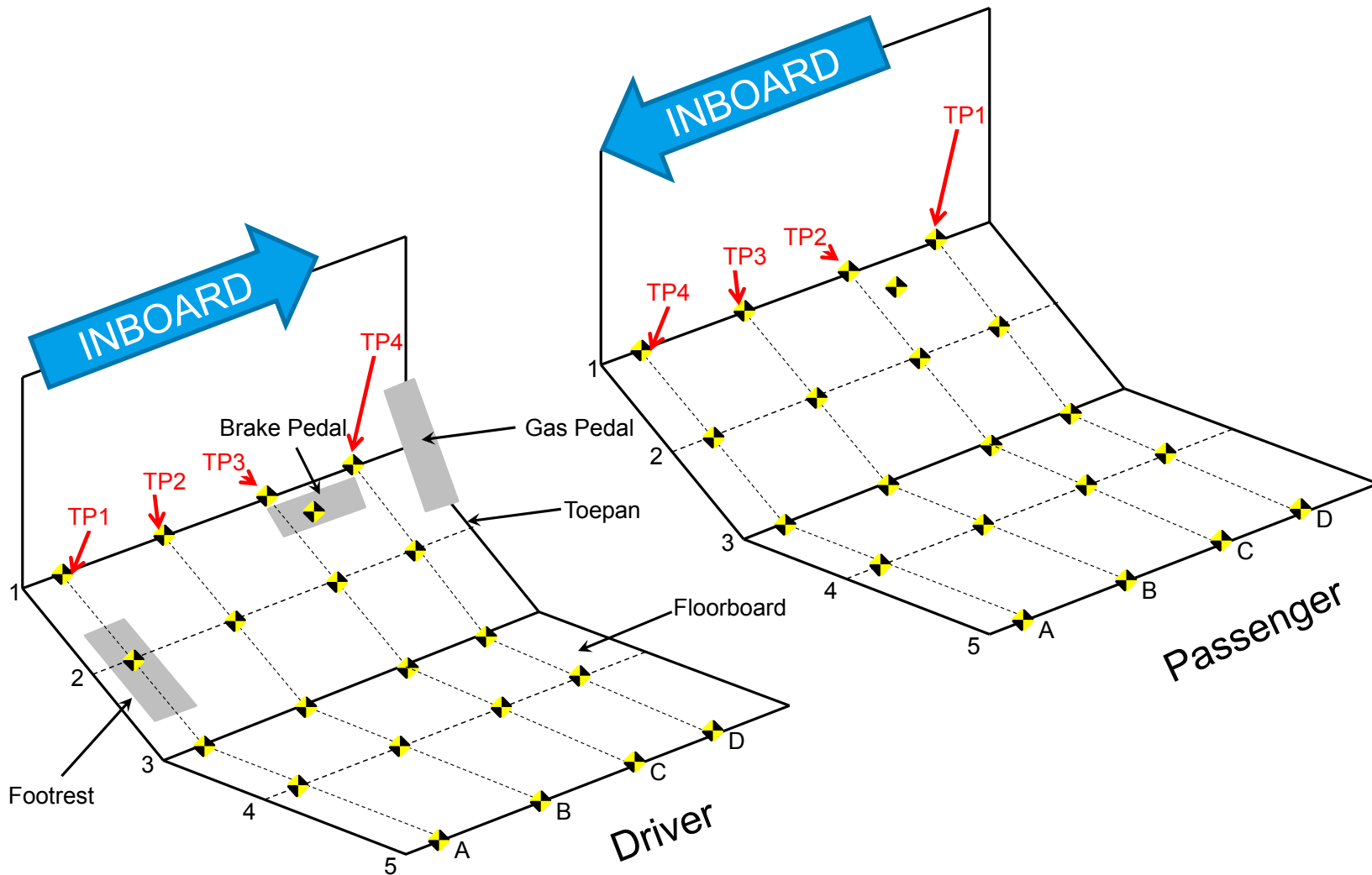
- Is there a difference in vehicle response, occupant response, and injury risk between left-side and right-side impacts?

- **APPROACH**

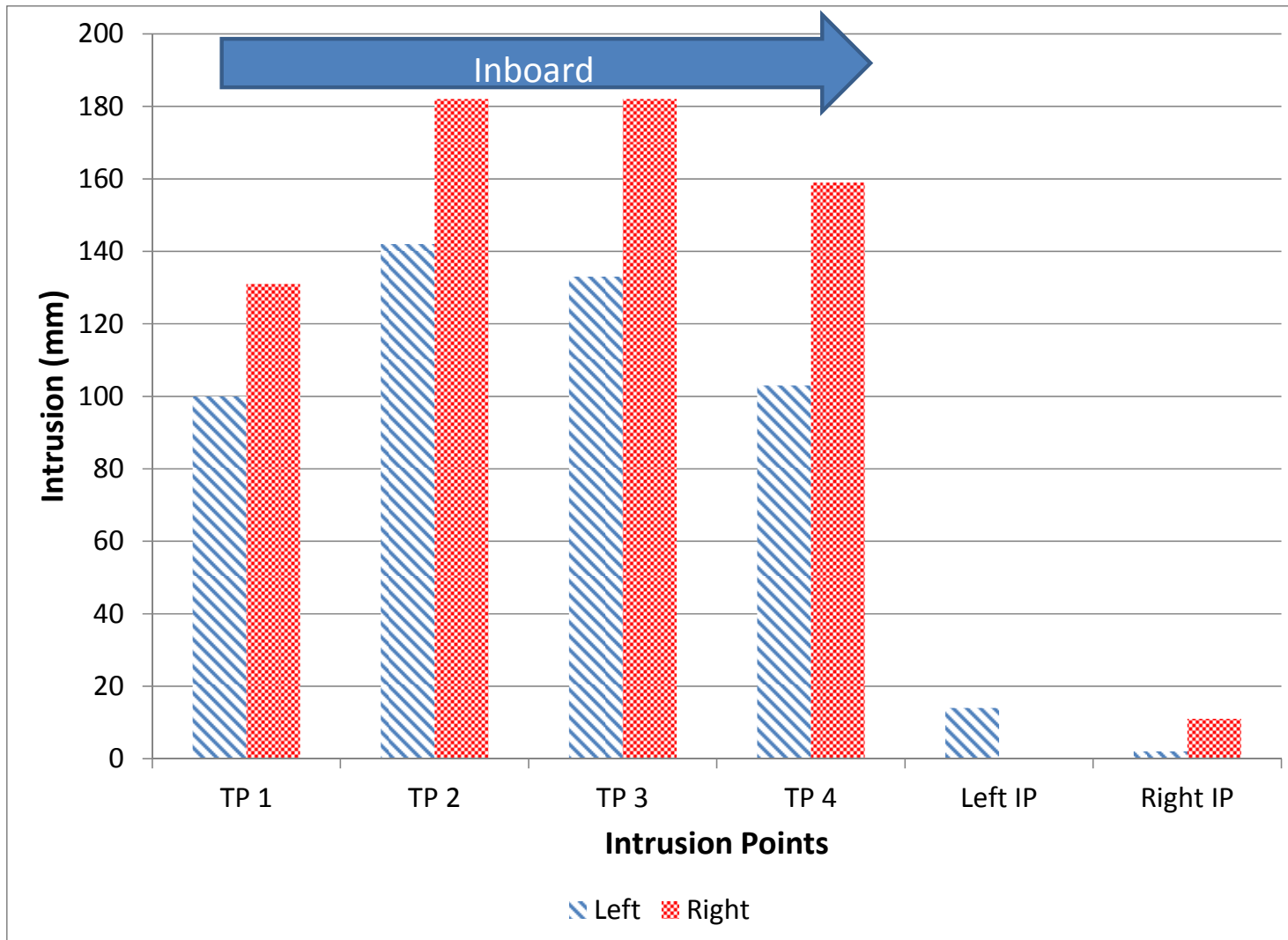
- Test three pairs of vehicles that comply with FMVSS No. 226 side curtain and achieved an acceptable or better rating in the IIHS Small Overlap Impact test procedure in the NHTSA Oblique RMDB test procedure

NHTSA TEST #	IMPACT SIDE	YEAR	MAKE	MODEL	TEST WEIGHT (KG)	VEHICLE CLASS
8789	Left	2014	Honda	Accord	1744	Mid
9042	Right	2014	Honda	Accord	1749	Mid
9043	Left	2015	Honda	Fit	1426	Mini
8787	Left	2014	Mazda	3	1588	Small
8999	Right	2014	Mazda	3	1582	Small
8788	Left	2014	Mazda	CX-5	1769	Small SUV
8998	Right	2014	Mazda	CX-5	1777	Small SUV
8478	Left	2014	Subaru	Forester	1803	Small SUV
8488	Left	2012	Volvo	S60	1936	Mid

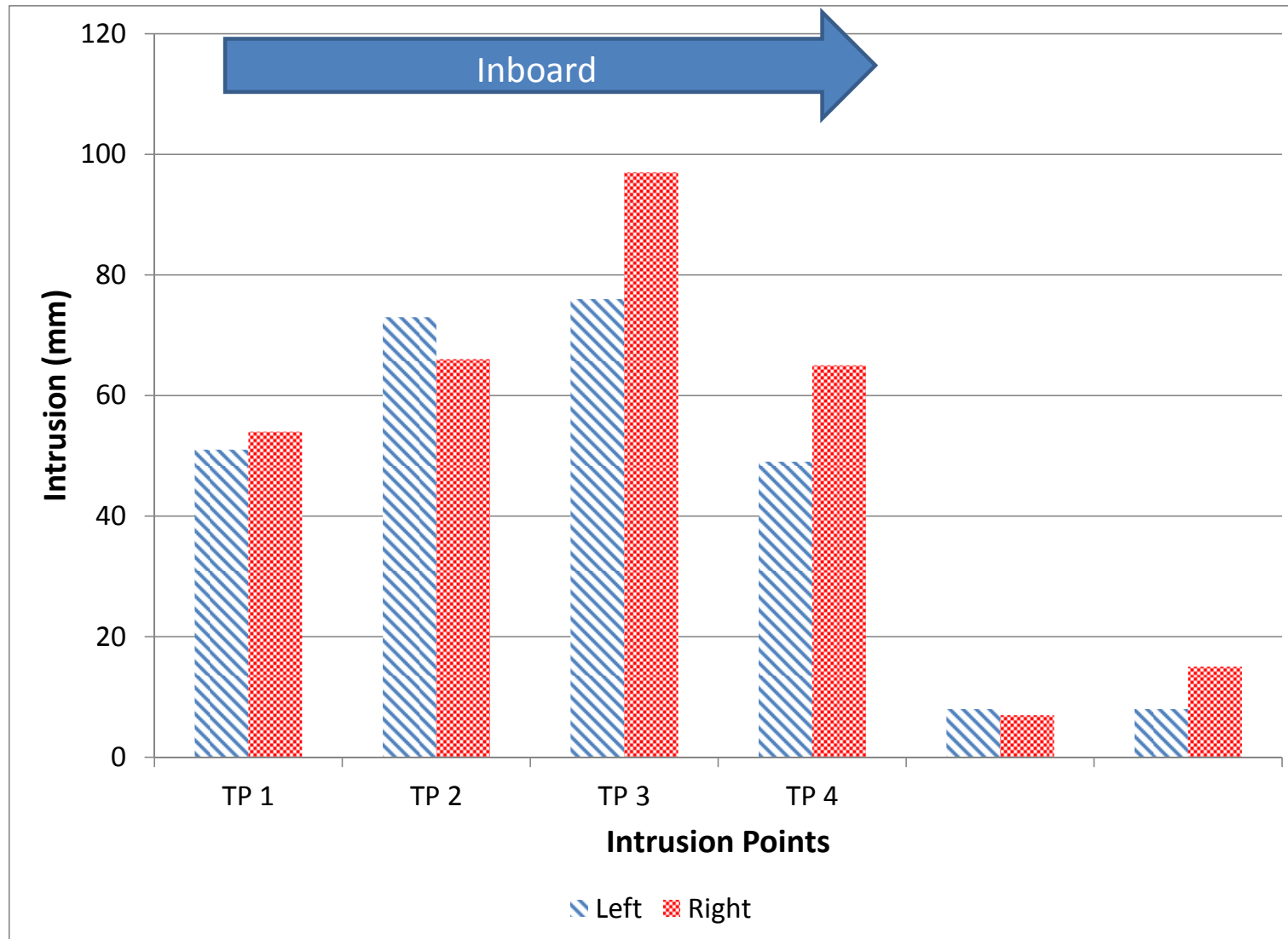
INTERIOR INTRUSION MEASUREMENTS



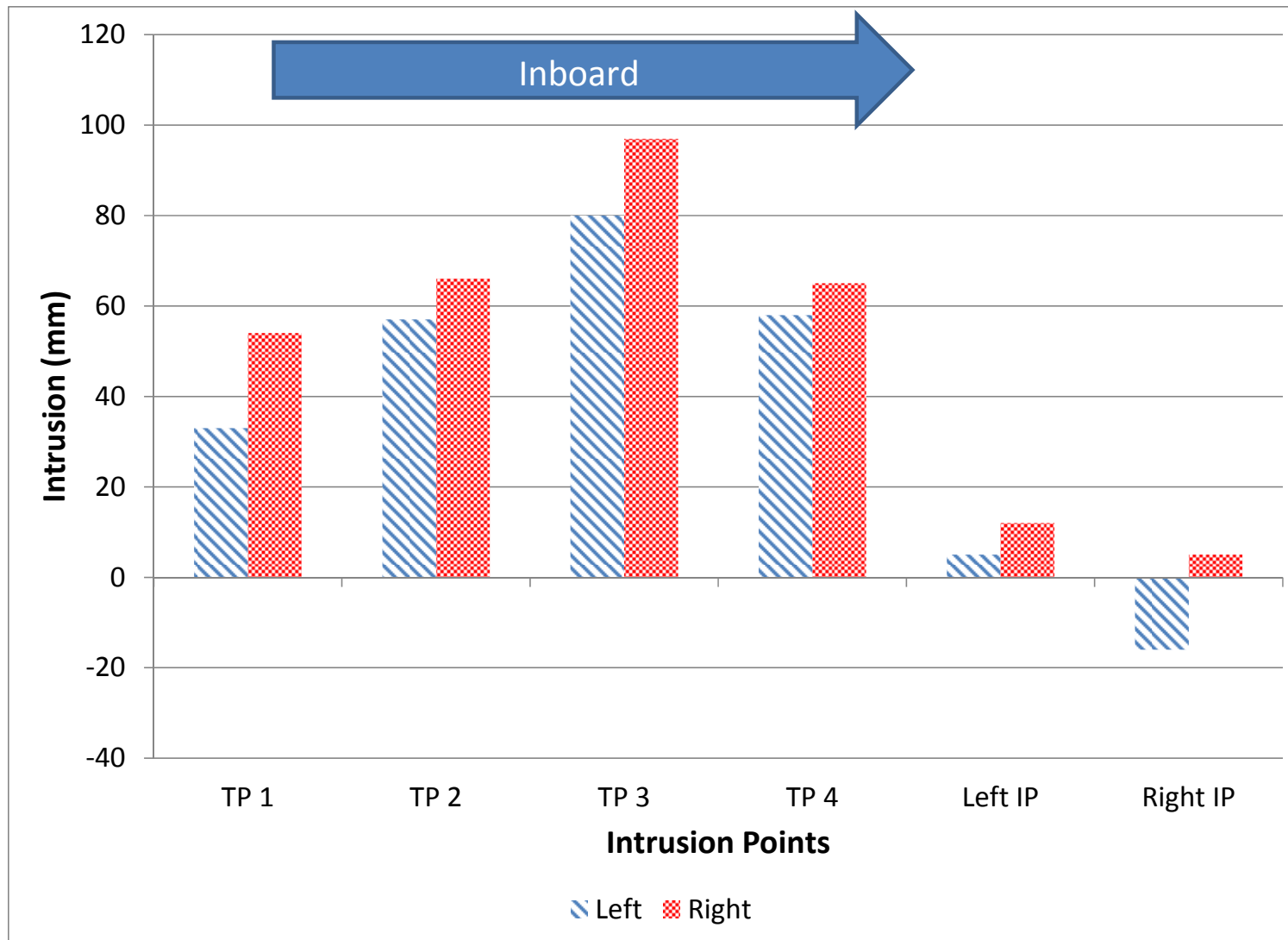
HONDA ACCORD NEAR SIDE INTERIOR INTRUSIONS



MAZDA 3 NEAR SIDE INTERIOR INTRUSIONS



MAZDA CX5 NEAR SIDE INTERIOR INTRUSIONS



Wrong NHTSA number in video. The correct NHTSA number is R20145374

Accord Left Side Impact



THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

Accord Right Side Impact



THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

Mazda 3 Left Side Impact



THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

Mazda 3 Right Side Impact



THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

Mazda CX5 Left Side Impact



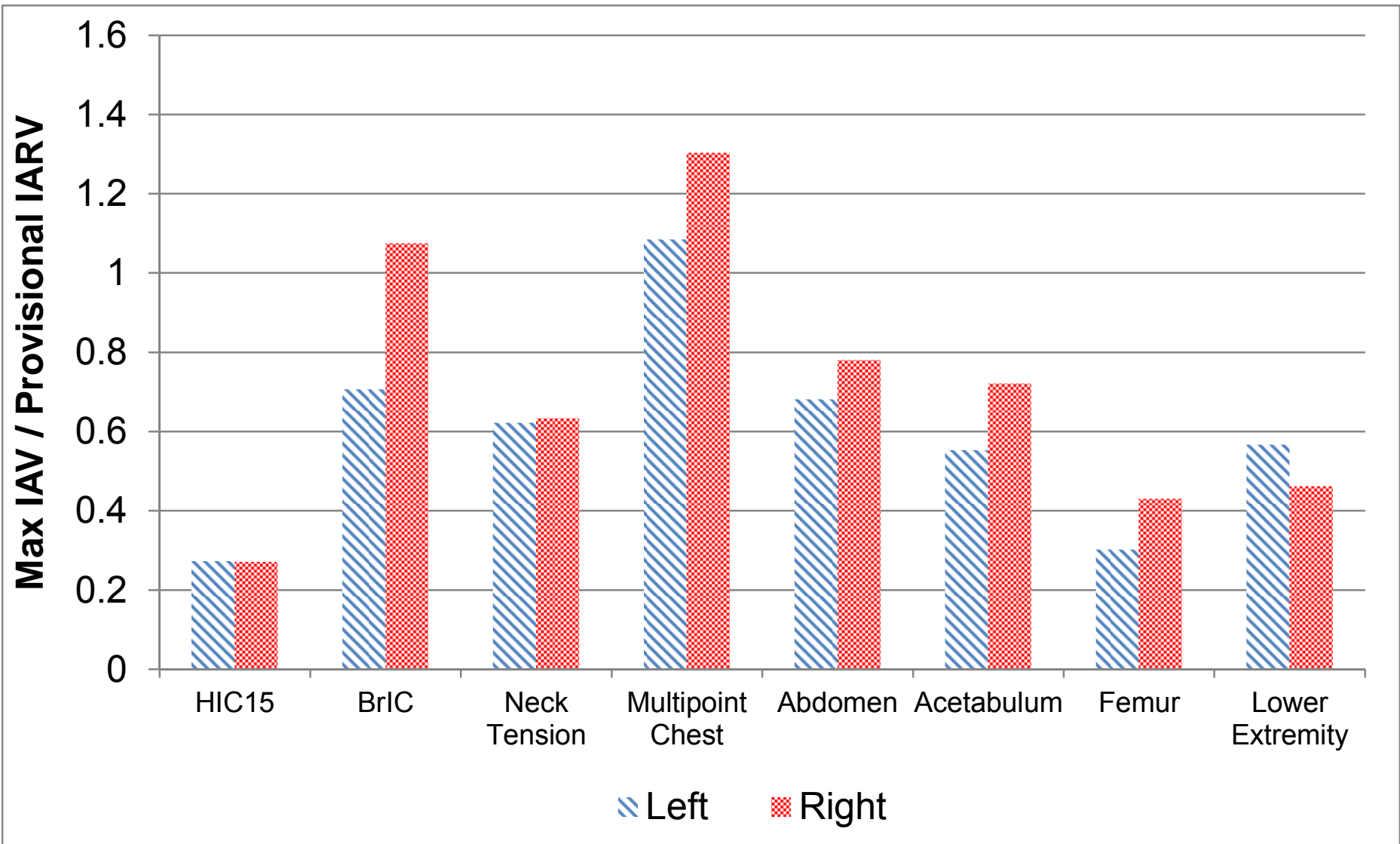
THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

Mazda CX5 Right Side Impact

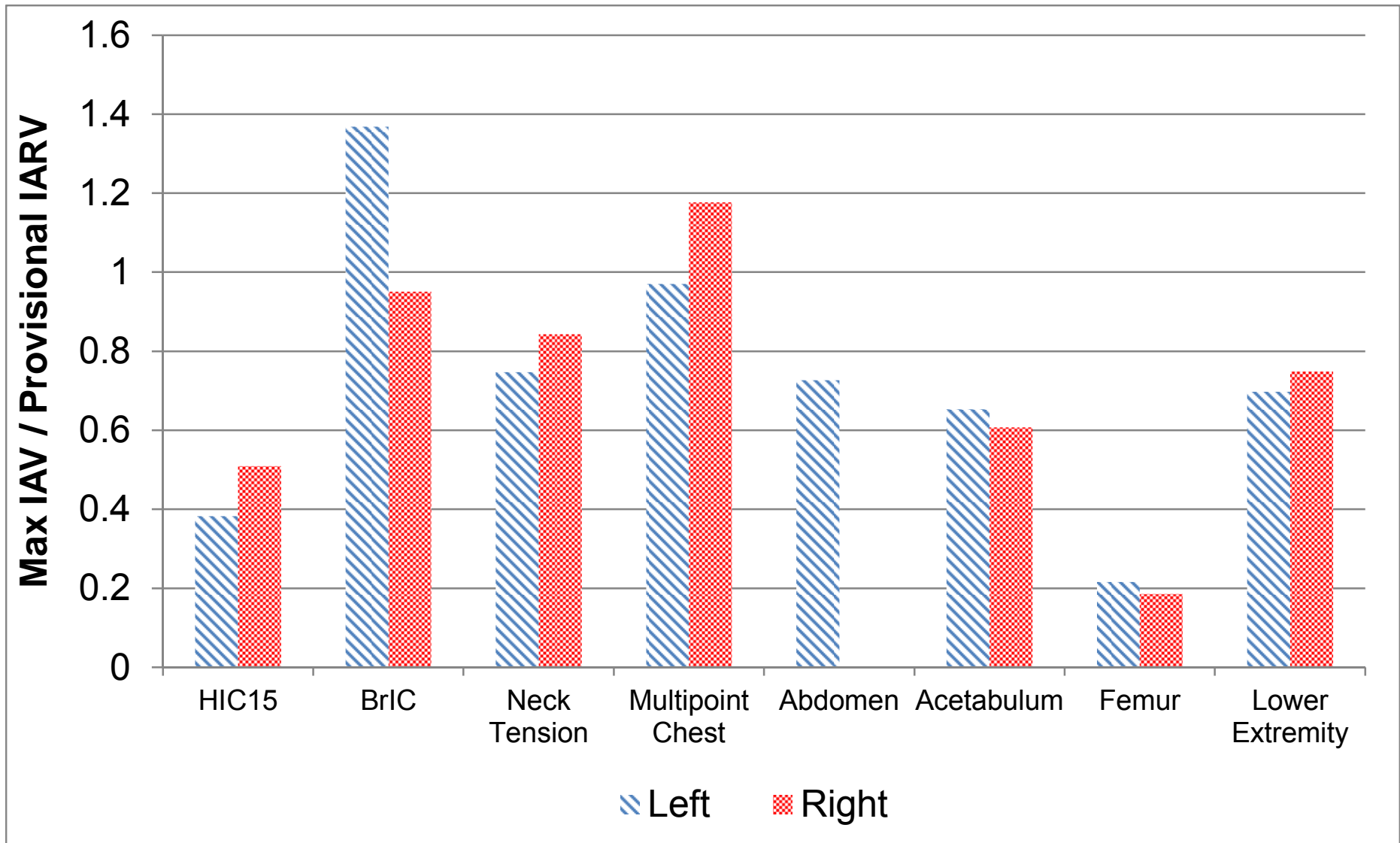


THIS IS A U.S. GOVERNMENT WORK NOT SUBJECT TO COPYRIGHT PROTECTION IN THE U.S.
IT MAY BE COPIED AND DISTRIBUTED WITHOUT PERMISSION AND WITHOUT LIMITATION.

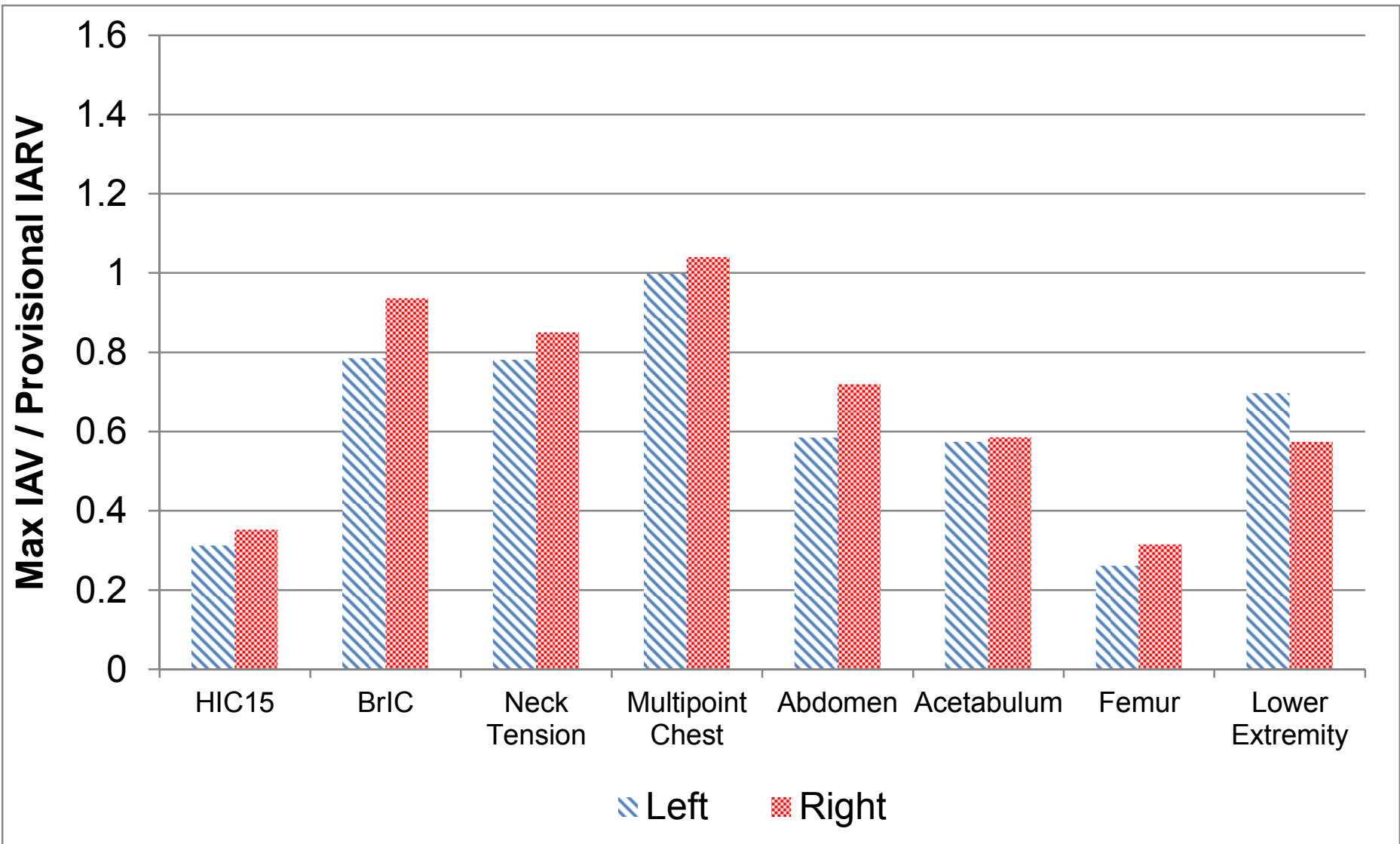
HONDA ACCORD INJURY NEAR SIDE OCCUPANT



MAZDA 3 INJURY NEAR SIDE OCCUPANT



MAZDA CX5 INJURY NEAR SIDE OCCUPANT



OBSERVATIONS

- **Toepan intrusion trend was to have higher intrusions inboard**
 - TP3 for right side impact had higher intrusions
- **Near side THOR goes between the FMVSS No. 226 side curtain air bag and frontal air bag**
- **Far side THOR slides off the frontal air bag and comes out of the shoulder belt**

FUTURE RESEARCH

- **Request for proposals to develop restraint countermeasure**
- **Modelling study to determine structure countermeasures**
- **Additional Left and right oblique testing**
- **Conduct repeatability and reproducibility testing with multiple test facilities**