Side Impact Child Program

Objective: To Develop a test procedure that simulates side impact crashes for the evaluation of all child restraint types

Suzanne Tylko

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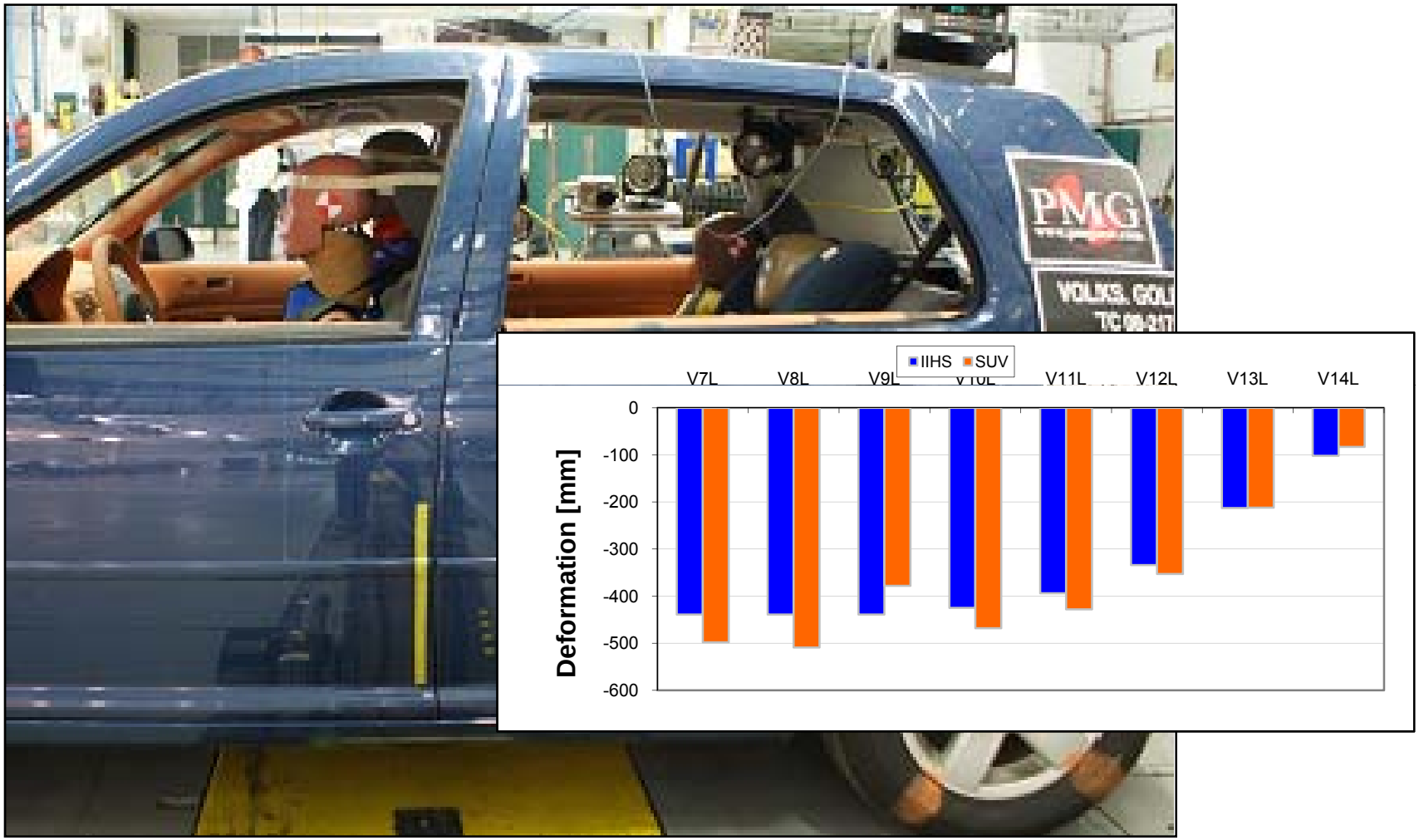
Crash Simulation

1. Intrusion
2. Energy transfer
3. Load path

Occupant Protection

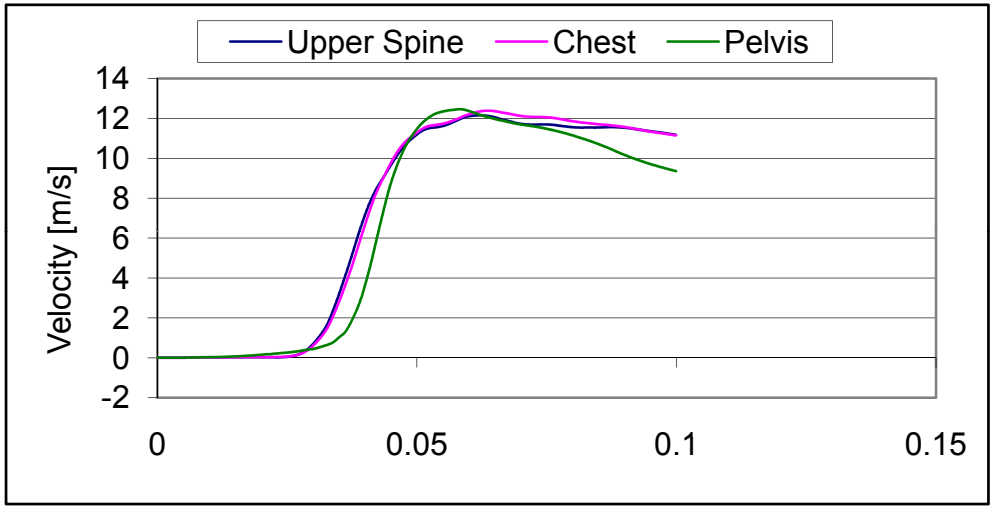


Q3s RESPONSES

	Head	Chest	Pelvis
IIHS	**79.1**	**61.1**	**-126.4**
SUV	**61.5**	**130.8**	**-150**

Kinematics as a Function of Impactor

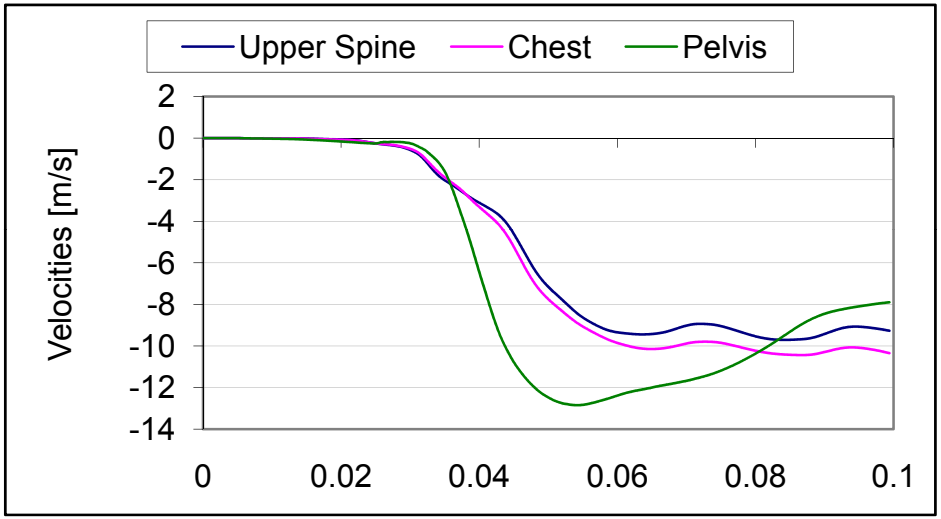
RIGID WALL



Relative velocity between pelvis & spine -1.5 m/s

Kinematics as a Function of Impactor

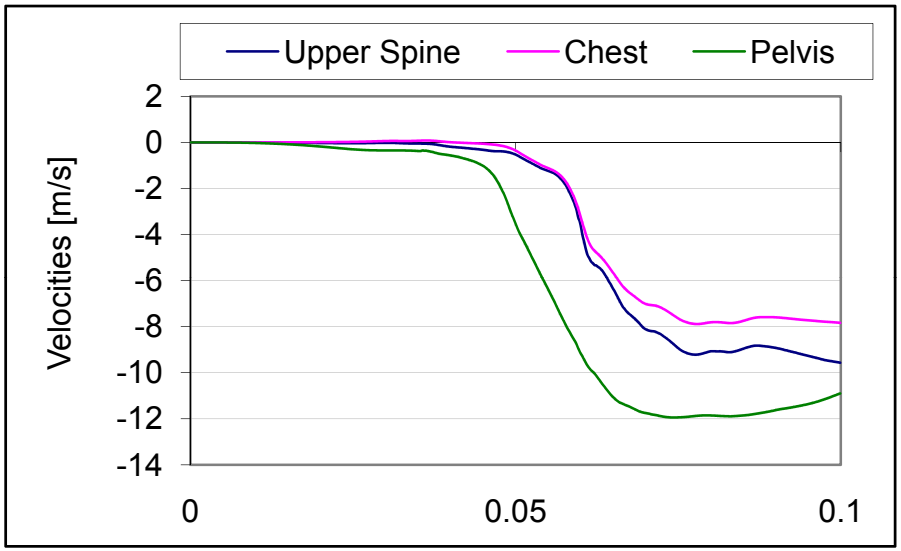
CHAMFERED WALL



Relative velocity between pelvis & spine +2.9 m/s

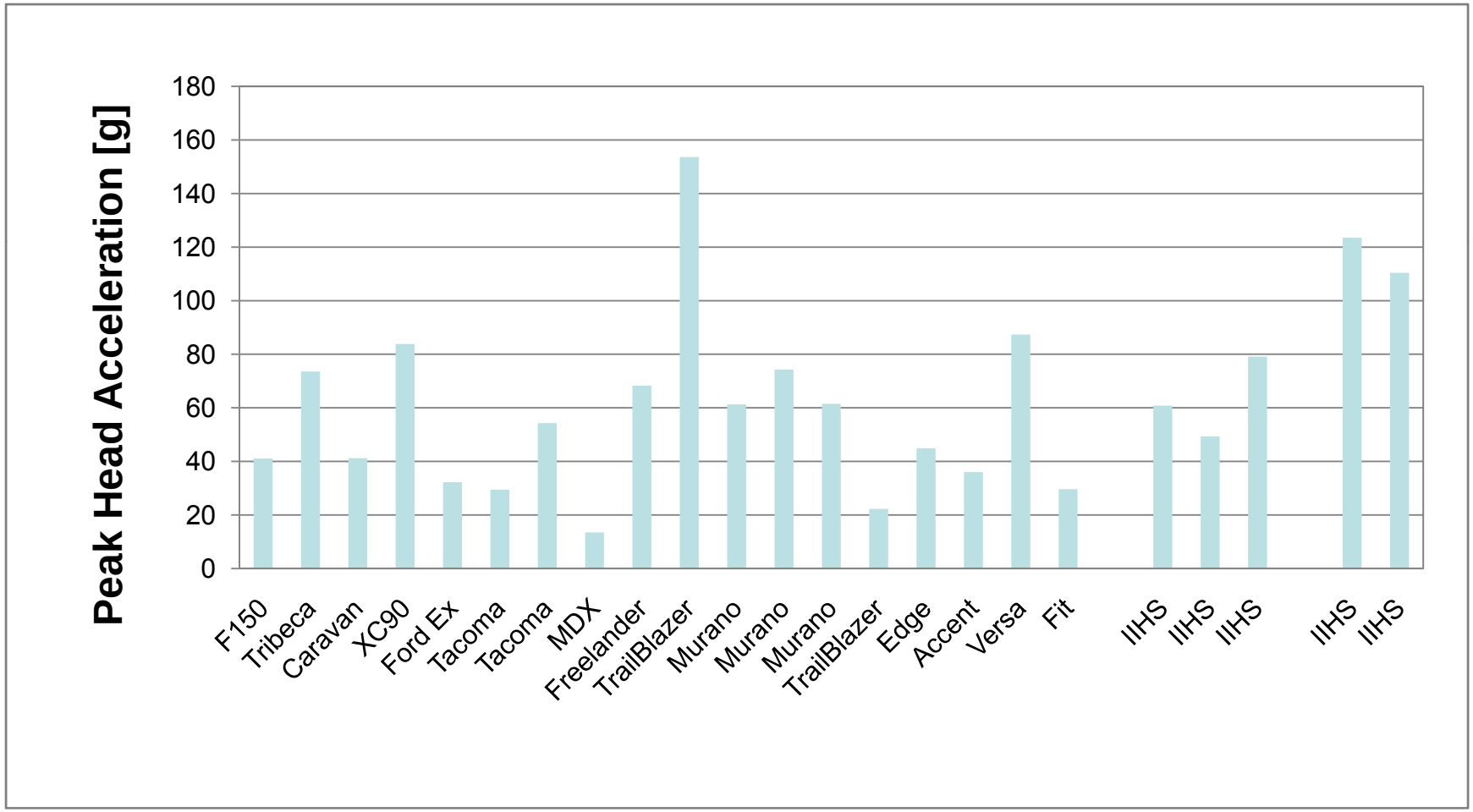
Kinematics as a Function of Impactor

SMALL CAR

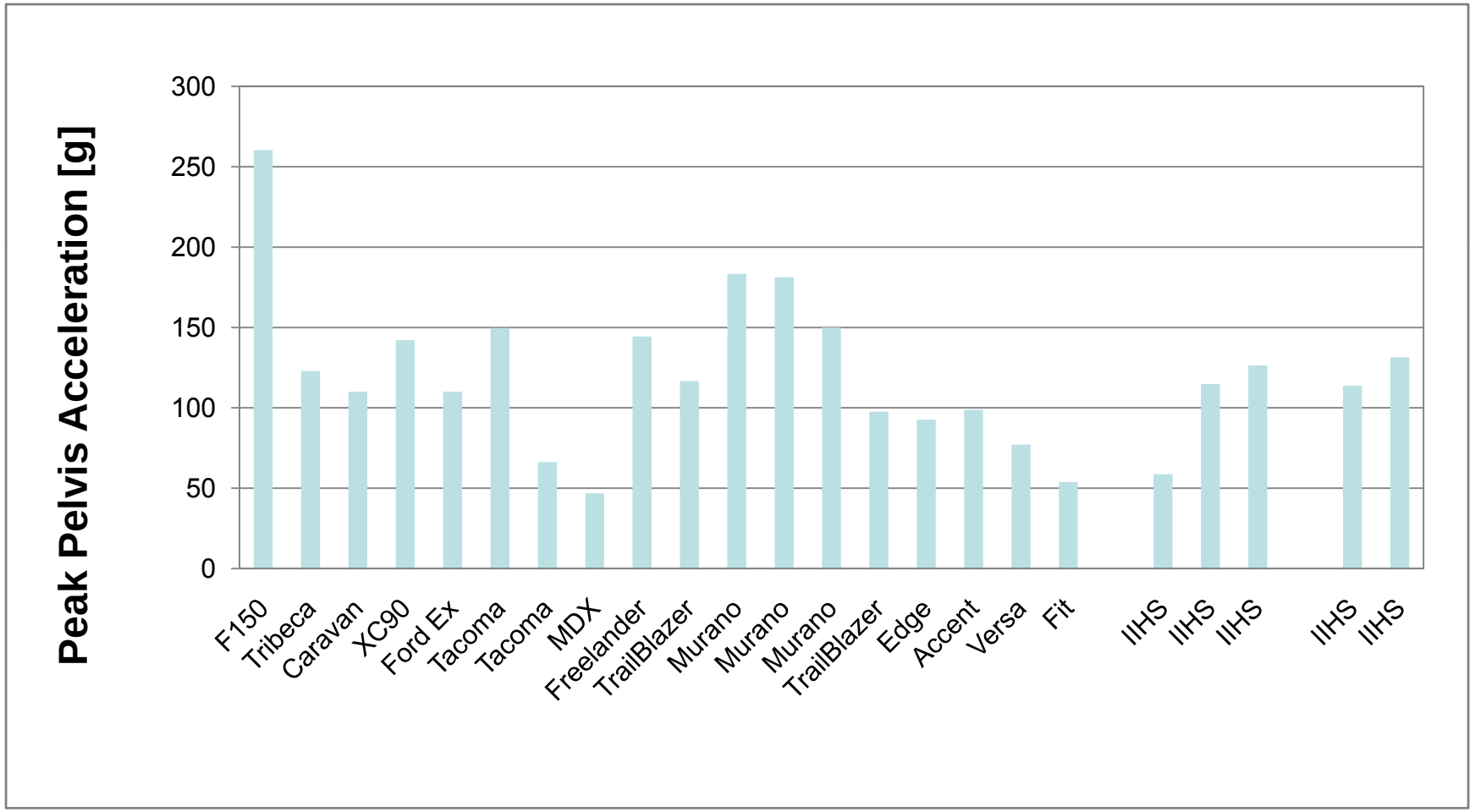


Relative velocity between pelvis & spine +2.8 m/s

HEAD


Peak Head Acceleration [g]
180
160
140
120
100
80
60
40
20
0
F150
Tribeca
Caravan
XC90
Ford Ex
Tacoma
Tacoma
MDX
Freelander
TrailBlazer
Murano
Murano
Murano
TrailBlazer
Edge
Accent
Versa
Fit
IIHS
IIHS
IIHS
IIHS
IIHS

PELVIS


Peak Pelvis Acceleration [g]
300
250
200
150
100
50
0
F150
Tribeca
Caravan
XC90
Ford Ex
Tacoma
Tacoma
MDX
Freelander
TrailBlazer
Murano
Murano
Murano
TrailBlazer
Edge
Accent
Versa
Fit
IIHS
IIHS
IIHS
IIHS
IIHS

Crash Simulation Method

1. Reproducible on different sleds;
2. Interface between the child seat and door;
3. Energy transfer
4. Load path
5. Validate to car-to-car results