

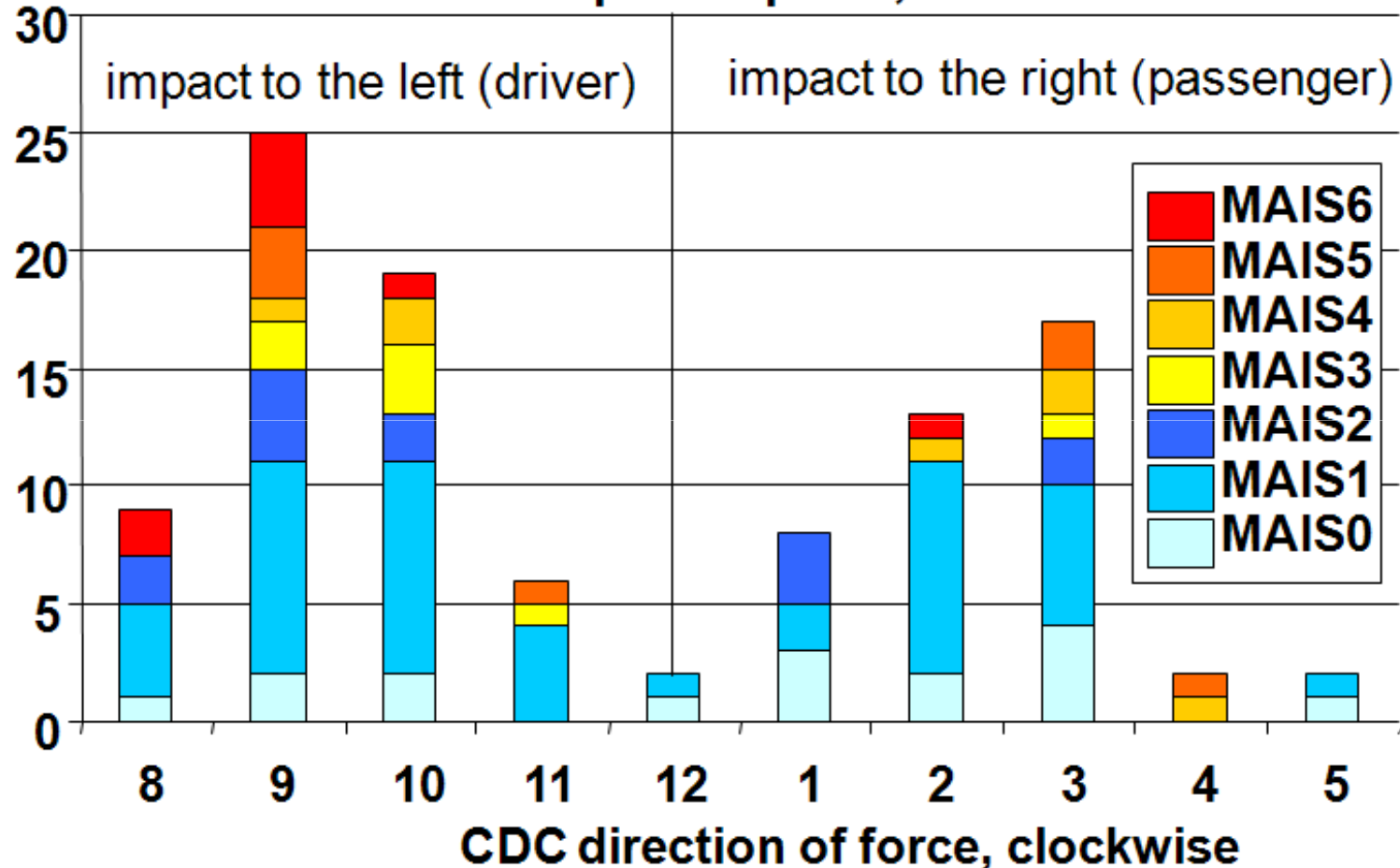
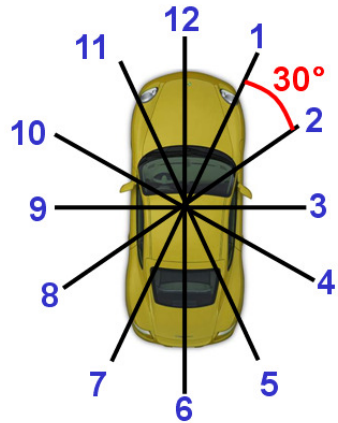


Accident Data: Side Impacts with Poles

Informal Group on a Pole Side Impact GTR (PSI) March 2011

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Federal Highway Research Institute
Section: Passive Vehicle Safety and Biomechanics

GIDAS - MAIS of belted occupants by direction of force in pole impacts, n=103



Result:

Perpendicular is the most frequent **AND** most severe impact direction

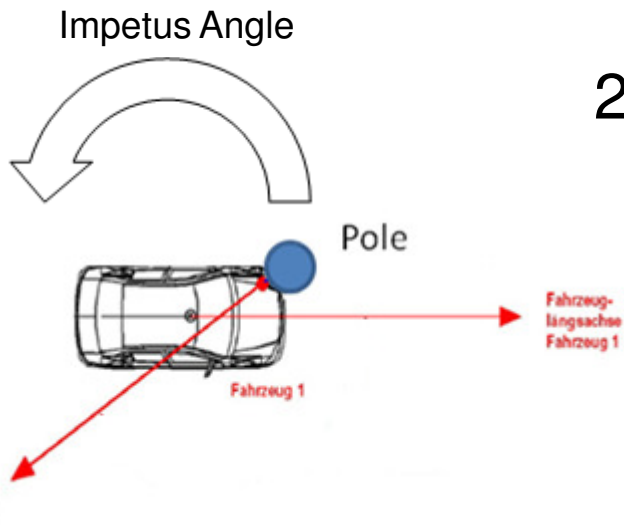
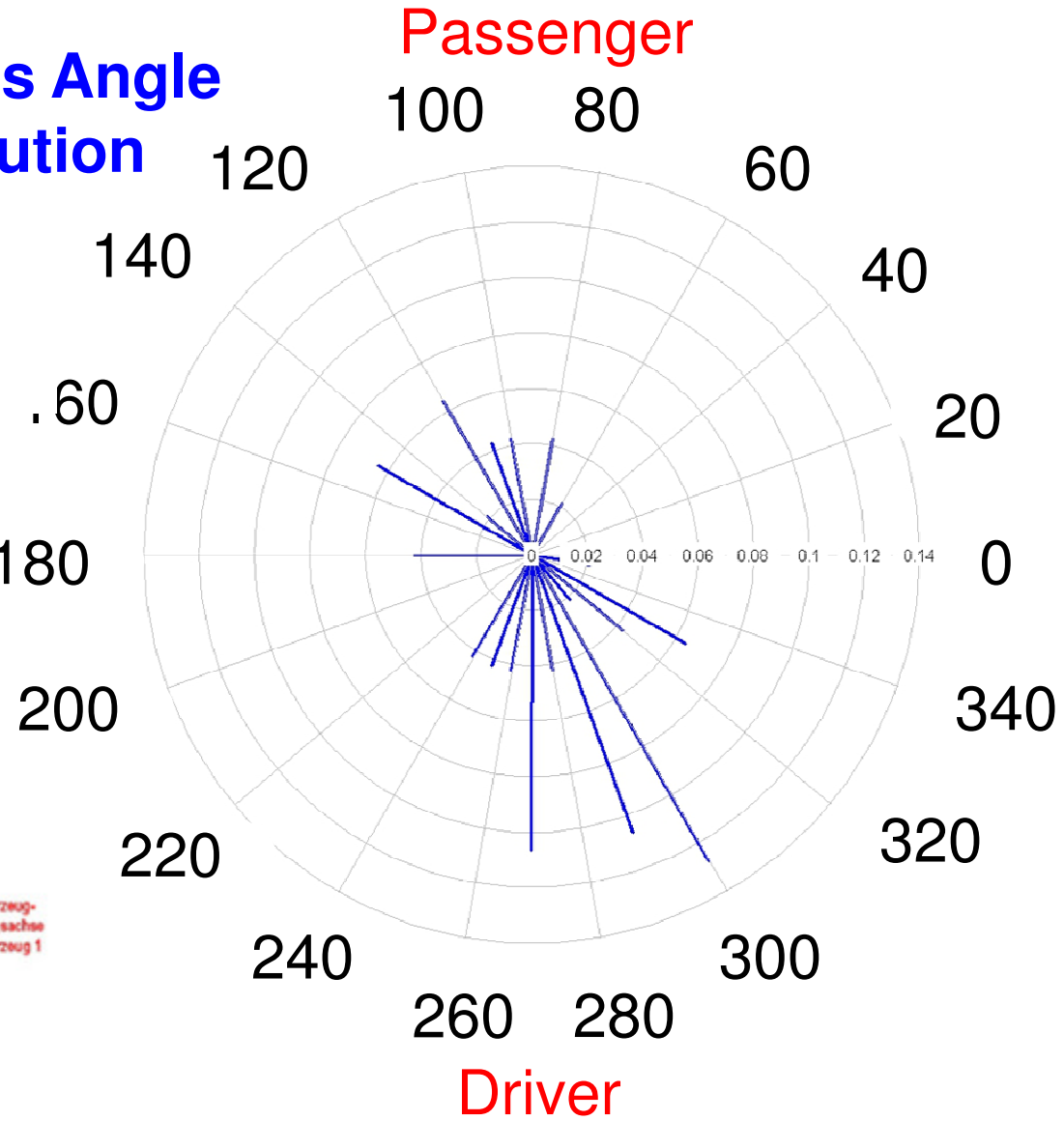
Impetus angle of fatal pole side impacts

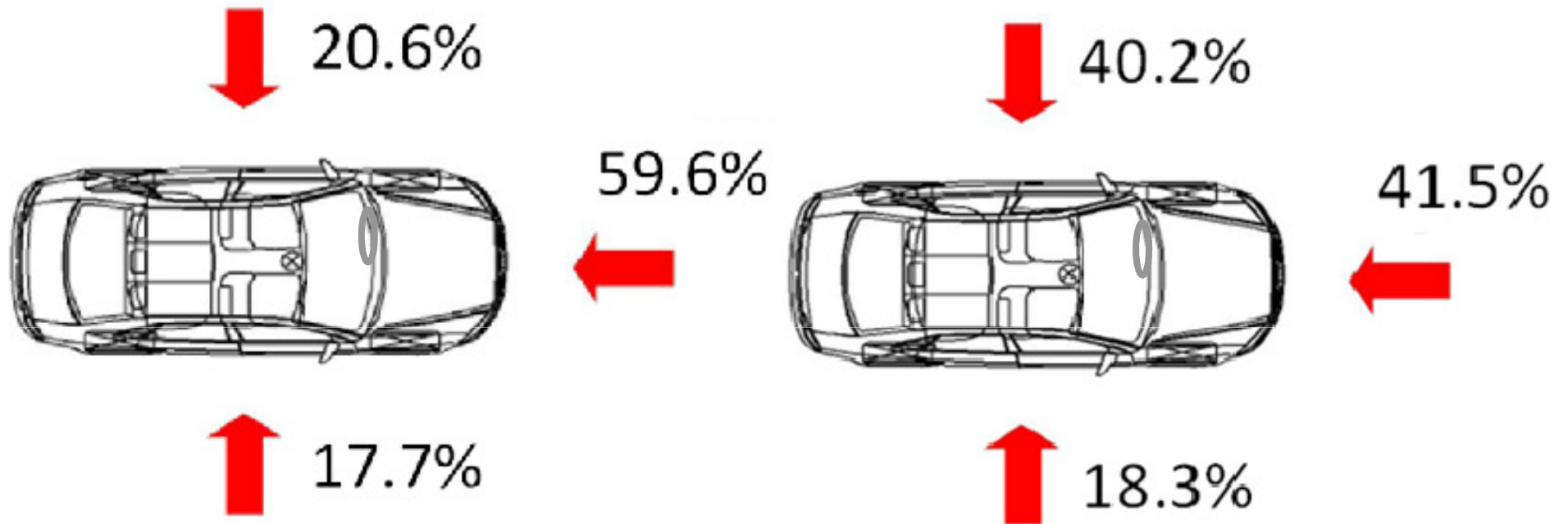


Impetus Angle Distribution

Related to 1999 - 2008
n=48

Front





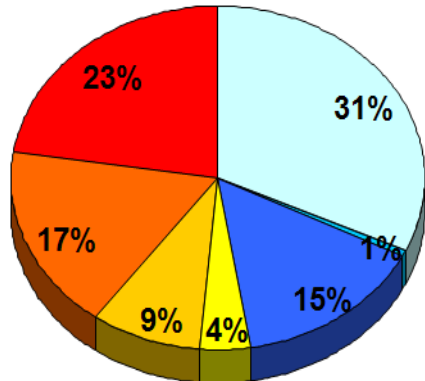
All pole impact passenger cars

Fatal pole impact passenger car

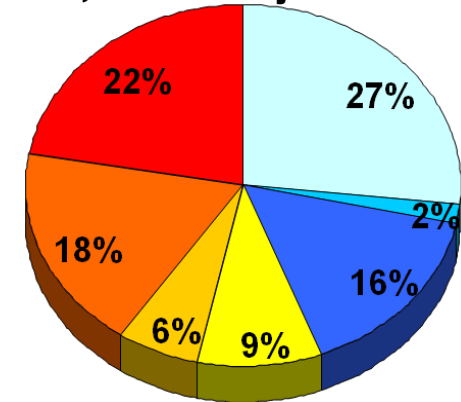
Injured body regions



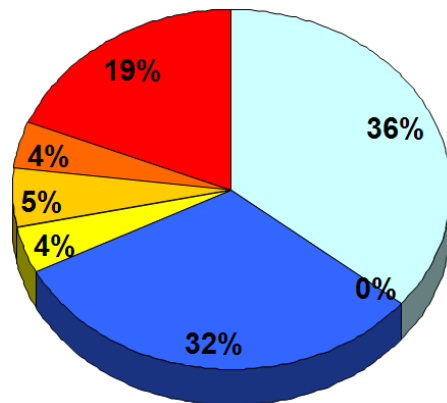
GIDAS - AIS1+ injuries by body regions, belted occupants, n=420 injuries



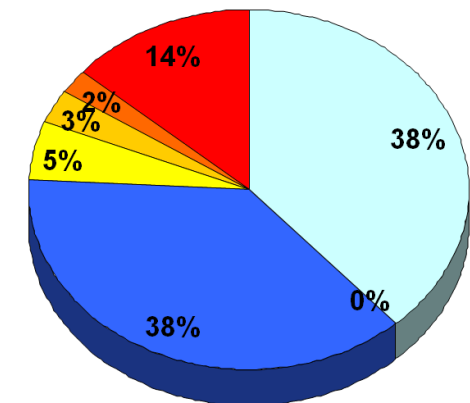
CCIS - AIS1+ injuries by body regions, belted occupants, n=980 injuries



GIDAS - AIS3+ injuries by body regions, belted occupants, n=95 injuries



CCIS - AIS3+ injuries by body regions, belted occupants, n=233 injuries

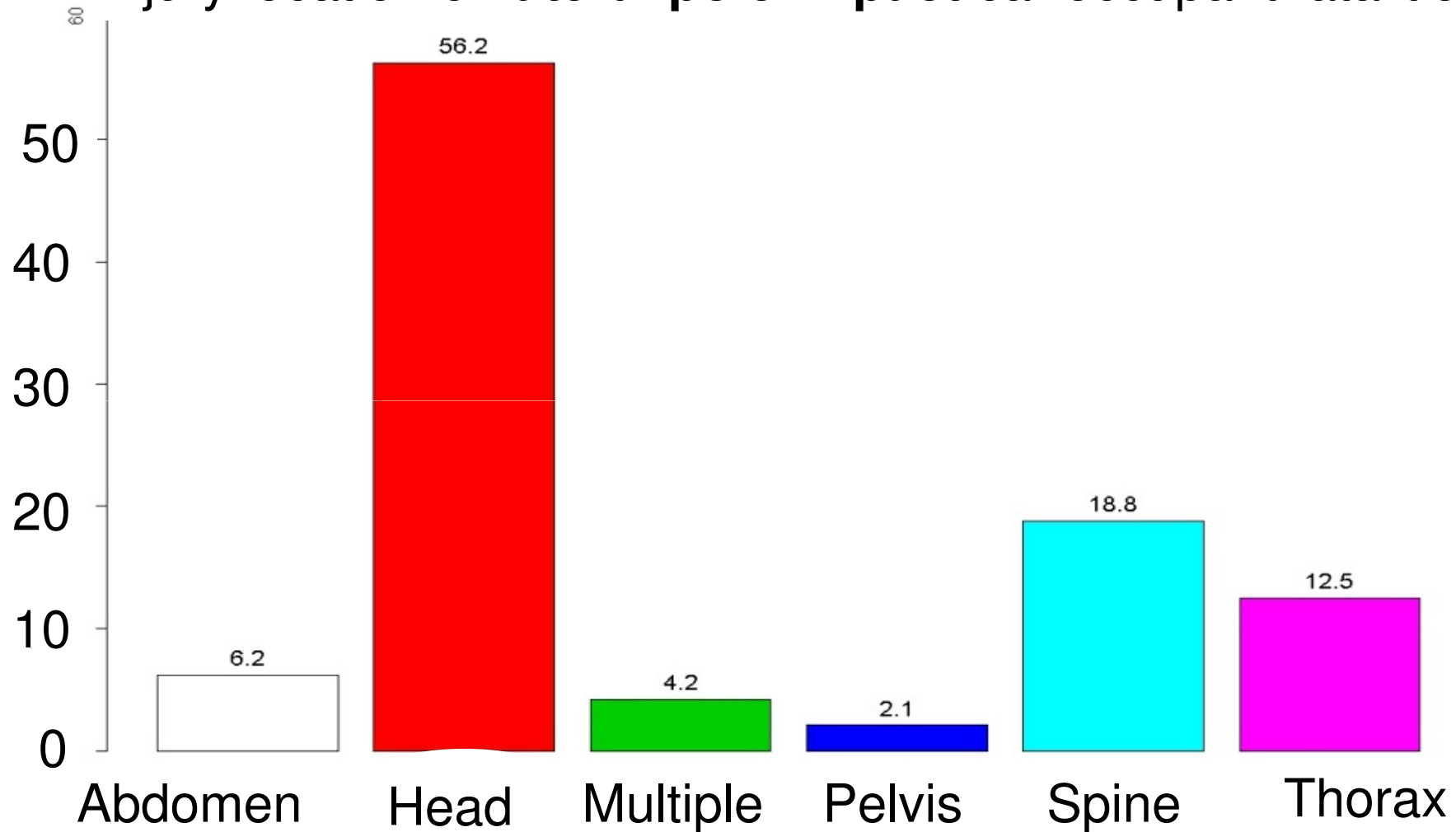


- head and face
- neck
- thorax
- abdomen
- spine
- upper ex
- lower ex

Result:

For all injury severities the head and thorax injuries are very dominant, for low severities also the spine is of importance

Injury location of lateral pole impact car occupant fatalities

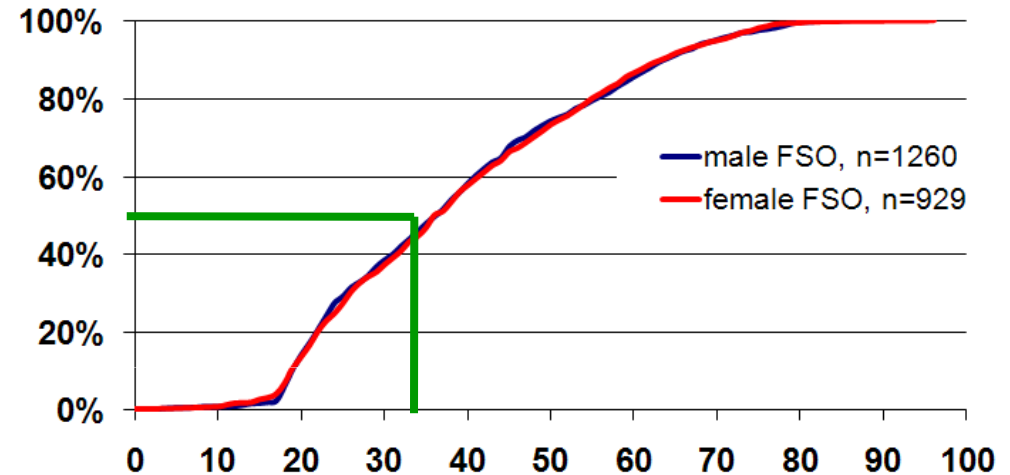


Occupant age distribution in single side impacts

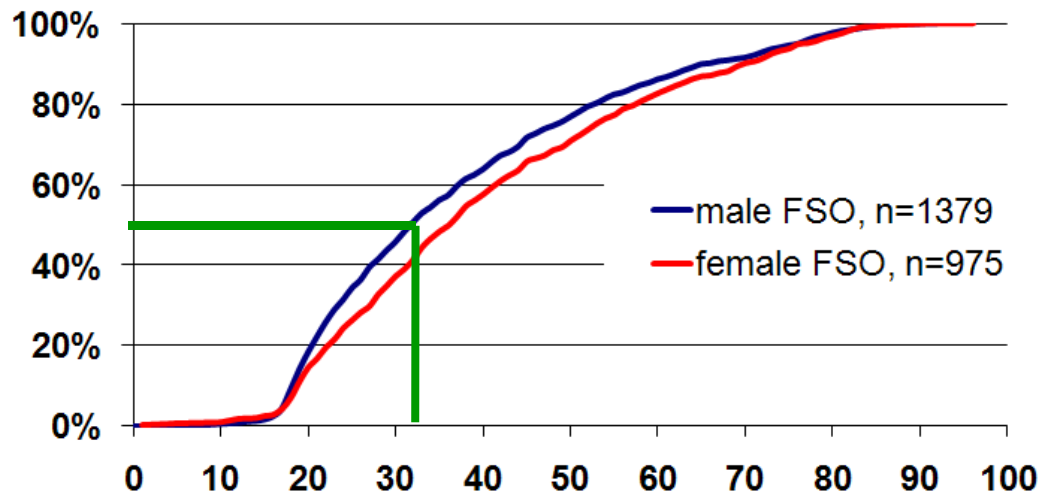
Result:

Marginal difference between male and female in CCIS, in GIDAS no difference between male and female

GIDAS – Age distribution in passenger cars with single side impact



CCIS – Age distribution in passenger cars with single side impact



Result:

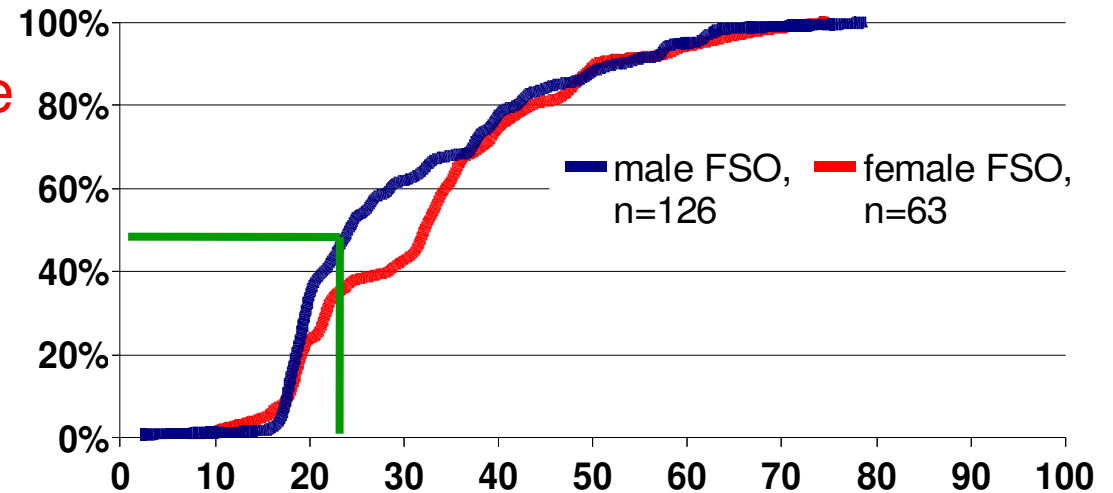
The 50% value is at about 32 years

Occupant age distribution in pole side impacts

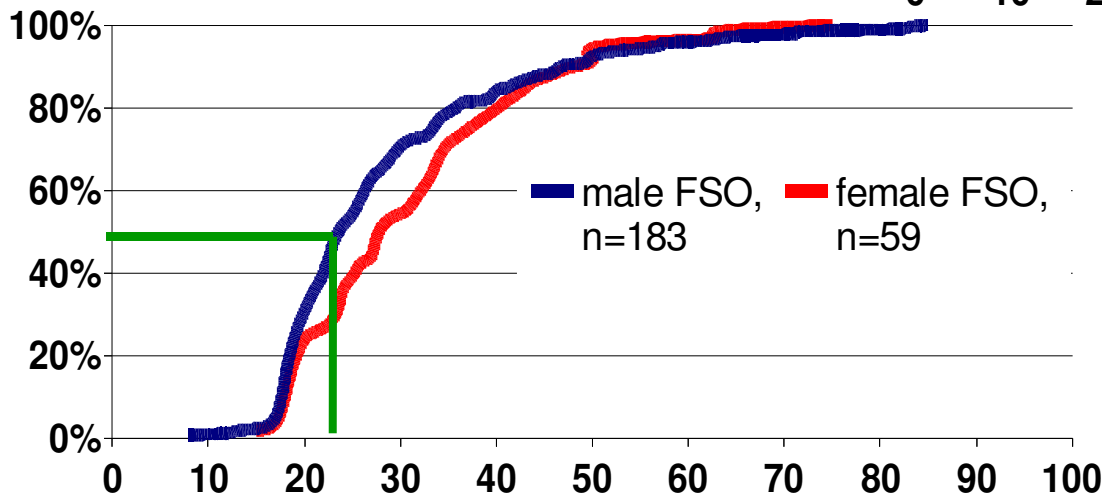
Result:

Young man are most dominate in side to pole impacts

GIDAS – Age distribution in passenger cars with single side to pole



CCIS – Age distribution in passenger cars with single side to pole

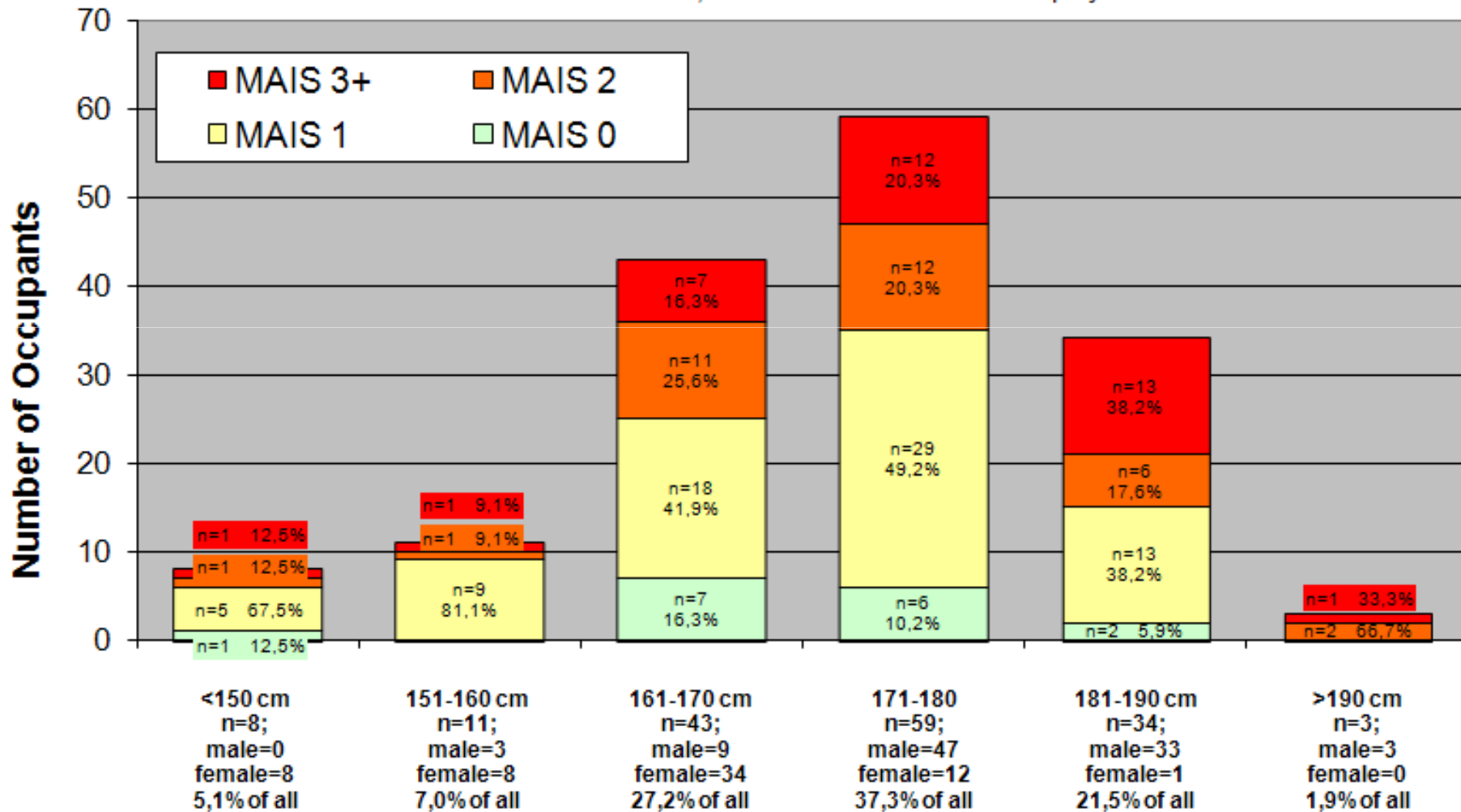


Result:

The 50% value decreases from 32 years in all side impacts down to 24 years in pole side impacts

Passenger Car Occupants in Single Side Impacts to Pole by Occupant Height,

Source: GIDAS 2010, n=158 all unknown not displayed



Thank you for your attention