

Submitted by the expert from Republic of Korea

Informal document **GRSP-56-34**  
(56th GRSP, 9-12 December 2014,  
agenda item 22(a))



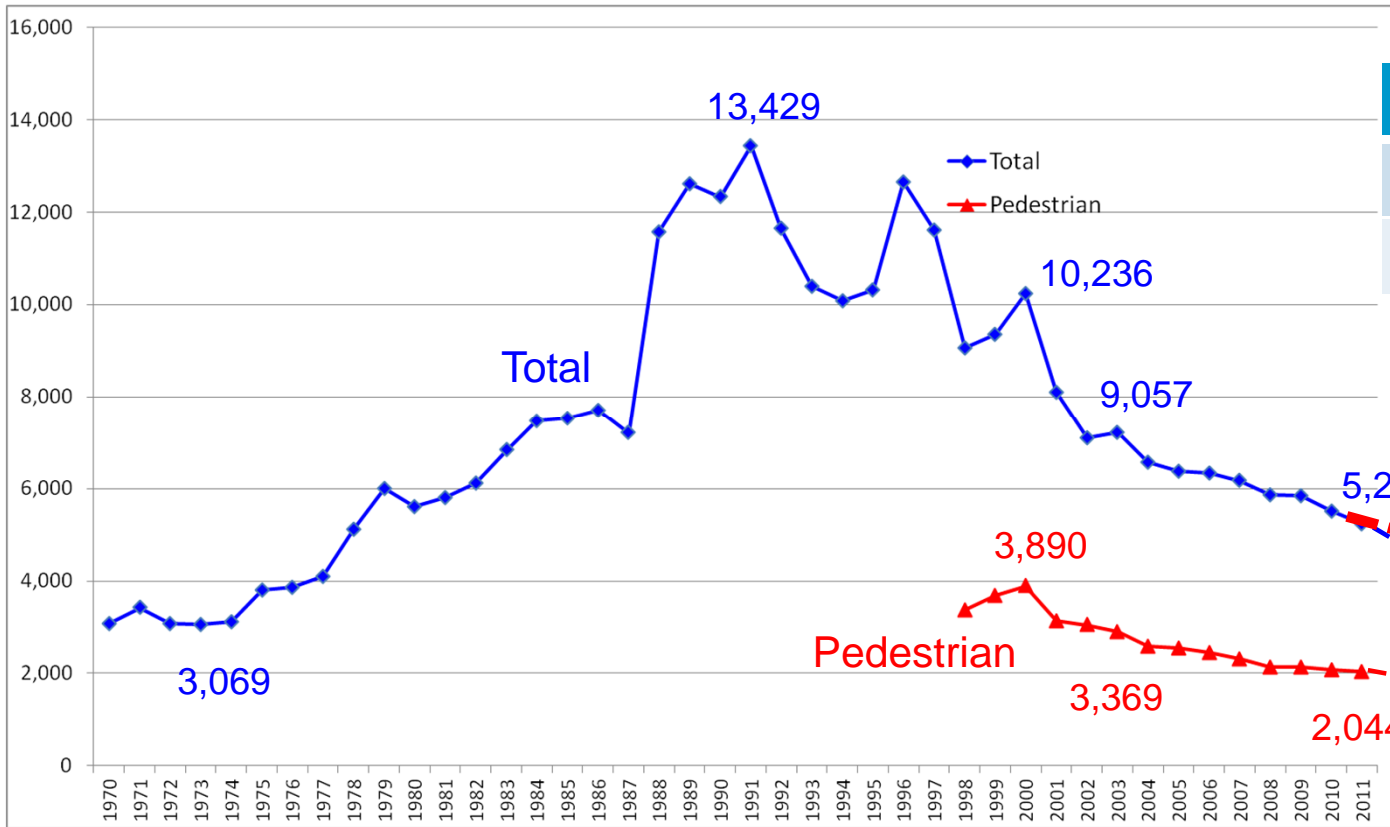
# 2014 KNCAP Updated Status

Korea Ministry of Land, Infrastructure and Transport

# Traffic Fatality National Target

Number

2012 Statistics



Deaths	5,229
Injuries	344,565
Deaths per 100,000 people	10.8

Trends  
Goals  
2017

Source: KOROAD(2011)

Policy goals: Reduction of traffic accident fatalities by 30% during the period 2013~2017



# Korean New Car Assessment Program

Main Purpose of NCAP

Inform car buyers of vehicles' comparative safety rating

Promote the development of safer vehicles to automobile manufacturers

## Korean NCAP

- Since 1999
- Based on the law  
Motor Vehicle Control Act - Article 32 of 2 (Aug.2002)

### <Results announcement>

- Publish booklet (Korean only)
- [www.car.go.kr/kncap](http://www.car.go.kr/kncap) (website)
- [m.car.go.kr/kncap](http://m.car.go.kr/kncap) (mobile)

2001 Kia Sephia 4-DR.

<http://www.nhtsa.dot.gov/ncap>  
Posted 12/26/2001

Frontal Star Rating

Driver's Side	Passenger's Side
★★★★	★★★★

Frontal Vehicle Weight: 2598 lbs

Side Impact Star Rating

Front Occupant	Rear Occupant
★★★	1

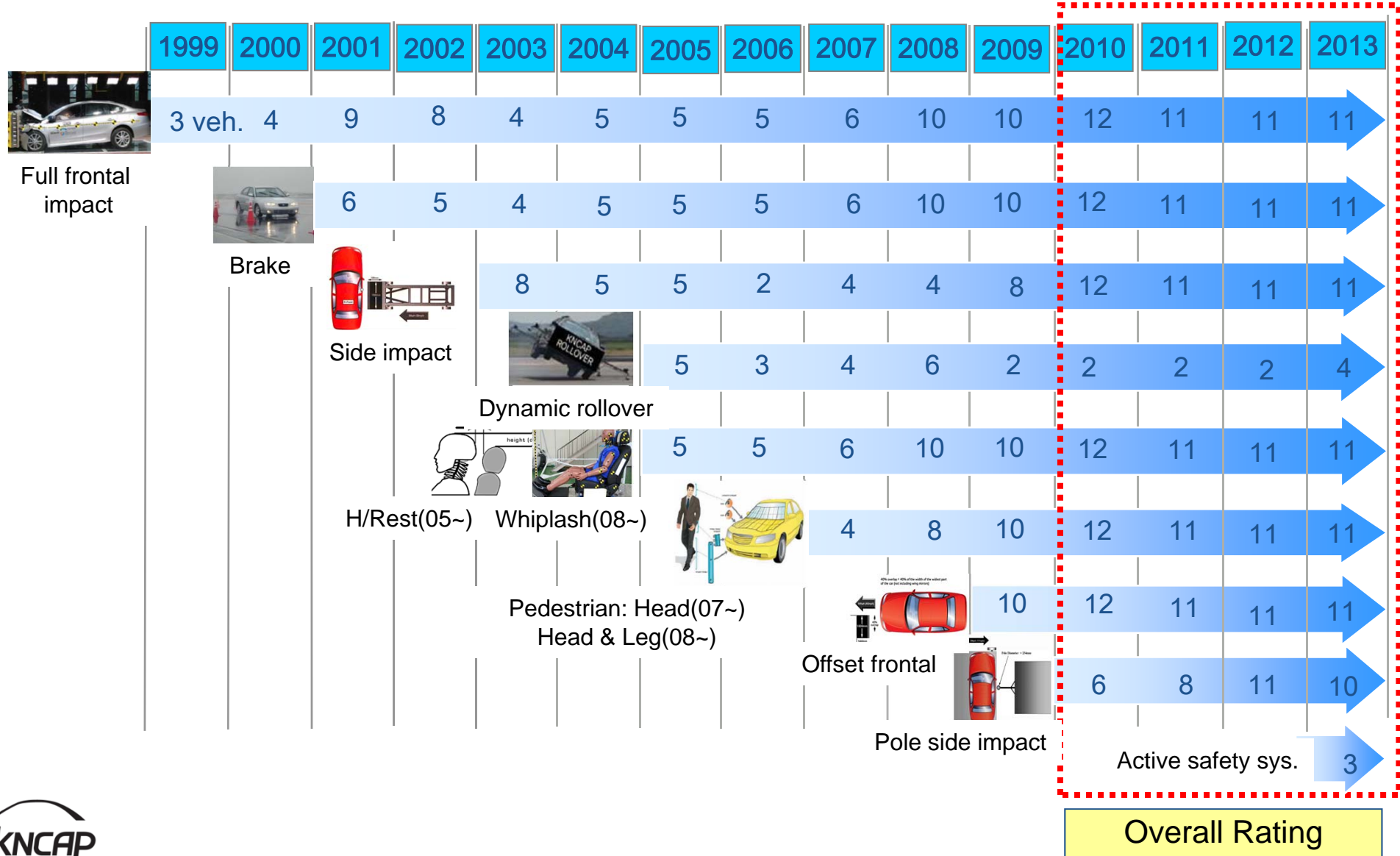
Rollover Resistance: Not Rated

현대 EF 쏘나타 (EF SONATA) 운전자석 ★★★★★  
전방탑승자석 ★★★★★



# Progress of KNCAP

- 9 Items, total tested vehicles by 2013, 118 Vehicles: Sedan 112, Bus 4, Small Truck 2



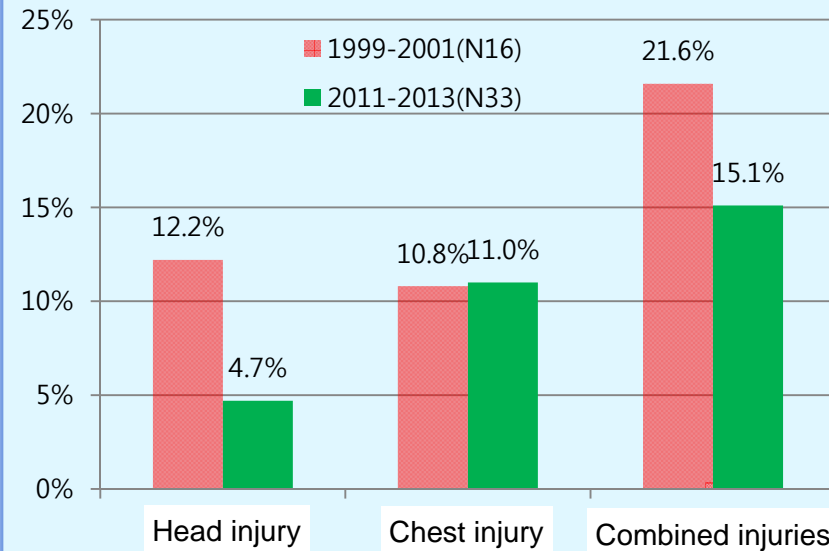
# Effects of KNCAP: Full Frontal Impact Test

## Full Frontal Impact Test



- Impact Speed: 56 km/h
- Driver: 50%ile Male
- Passenger: 50%ile Male(~2012)  
5%ile Female(2013~)

## Average Probability of Injury(AIS 4+)



※ Average for first 3 years (1999-2001)  
vs. Average for recent 3 years (2010-2012)

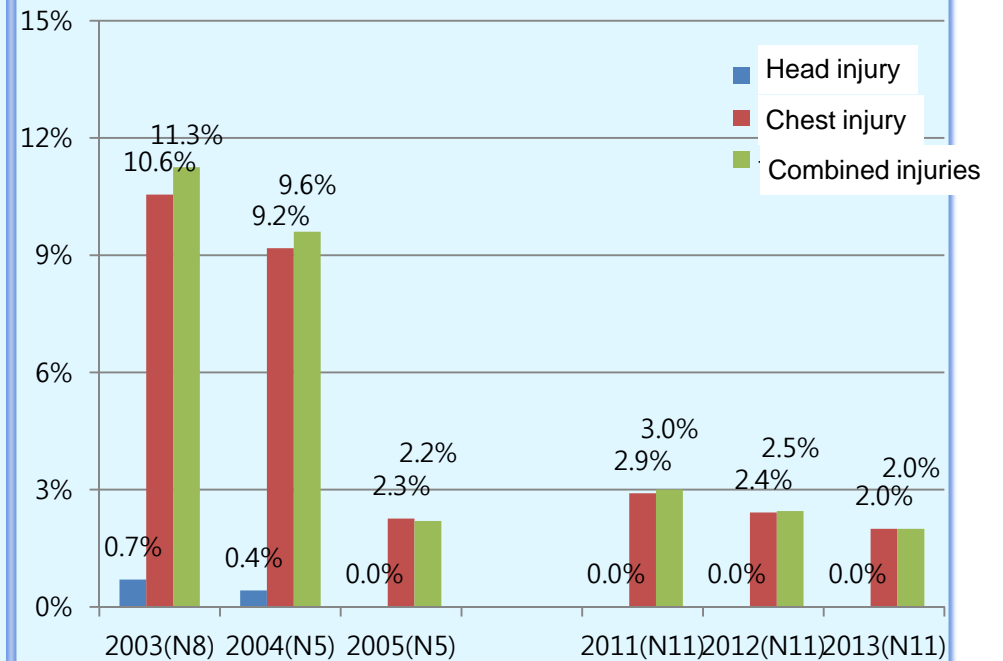
# Effects of KNCAP: Side Impact Test

## Side Impact Test



- Moving Barrier: 950 kg
- Impact Speed: 55 km/h
- Driver: 50%ile EuroSID II

## Average Probability of Injury(AIS 3+)



### Comparison of initial data and recent data

- Combined injuries: 11.3%  $\Rightarrow$  3.0%



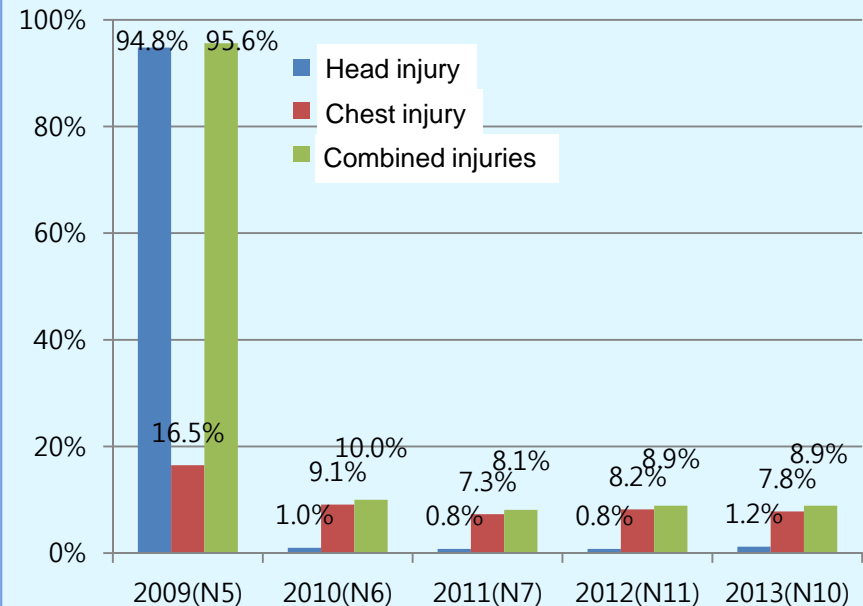
# Effects of KNCAP: Pole Side Impact Test

## Pole Side Impact Test



- Impact Speed: 29 km/h
- Impact Angle: 90 degree
- Driver: 50%ile EuroSID II

## Average Probability of Injury(AIS 3+)

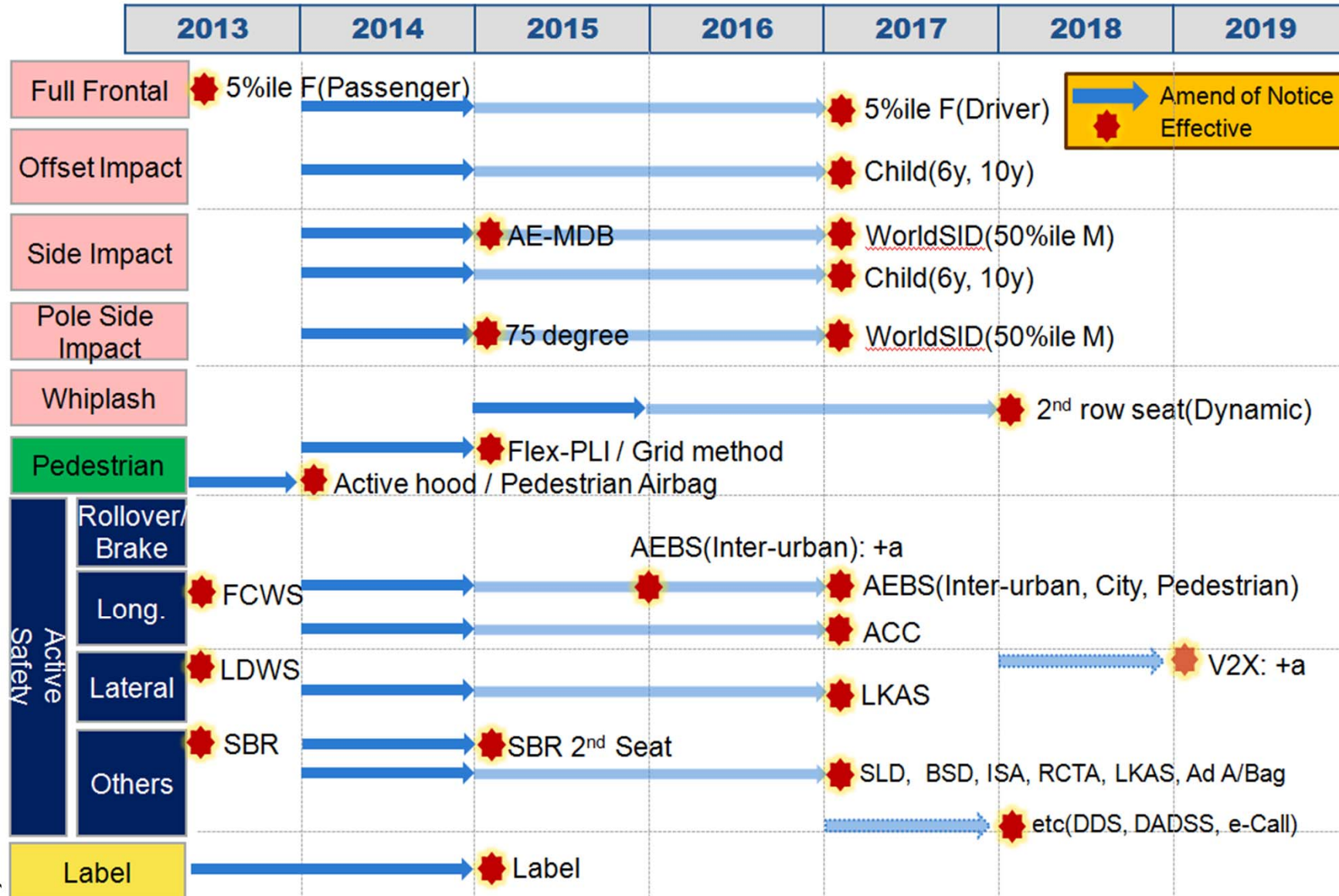




## Comparison of test data(AIS3+)

- Probability of combined injuries

- 2009: 95.6% (No vehicles have curtain airbag)
- 2010+:  $\geq 10\%$  (all vehicles with curtain airbag)

# KNCAP Roadmap (2014-2019)



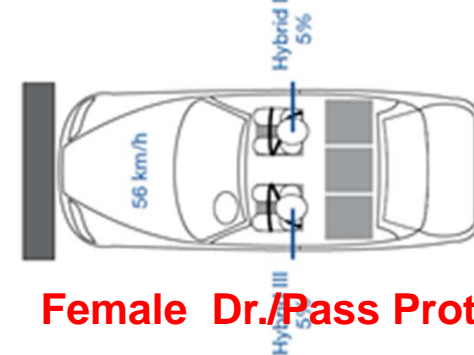
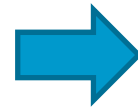
 Amend of Notice Effective  
 Effective



# Update Test Protocols (Current vs. Future)

## Full Frontal Impact

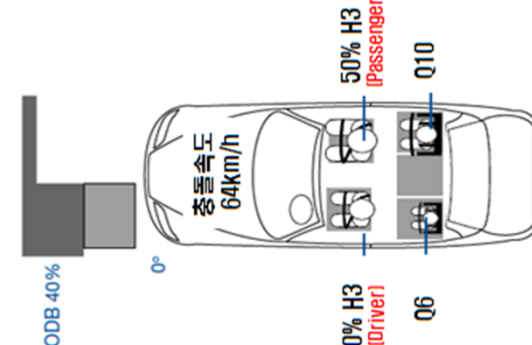
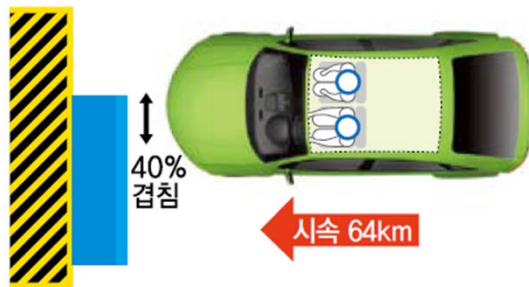
- Test vehicle is crashed to the rigid barrier with 56 km/h velocity
- 50%ile male dummy(driver seat) and 5%ile female dummy(passenger seat)
- Evaluate passenger injuries(for example head, chest and upper legs)



**Female Dr./Pass Protections**

## Offset Impact

- Test vehicle is crashed to the 40% offset barrier with 64 km/h velocity
- 50%ile male dummies(driver and passenger seat)
- Evaluate passenger injuries(for example head, chest, upper and lower legs)

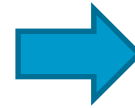
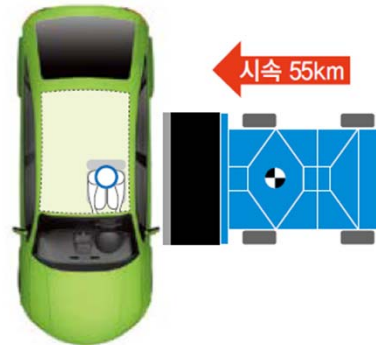


**Old Child Protections**

# Update Test Protocols (Current vs. Future)

## Side Impact

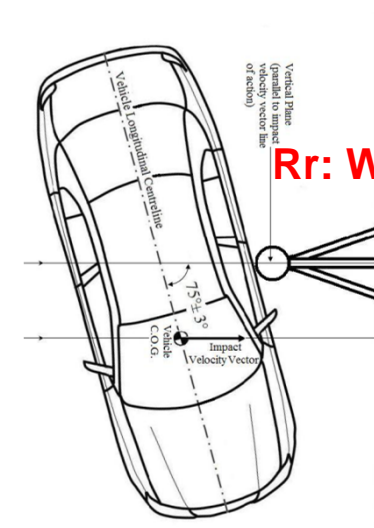
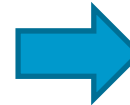
- The movable barrier crashes to test vehicle with 55 km/h velocity
- 50%ile EuroSID II dummy(driver seat)
- Evaluate passenger injuries(for example head, chest and pelvis).



**Dr: WorldSID 50%**  
**Rr: Q6, Q10**

## Pole Side Impact

- Impact speed: 29 km/h
- 50%ile EuroSID II dummy(driver seat)
- Evaluate passenger head injury

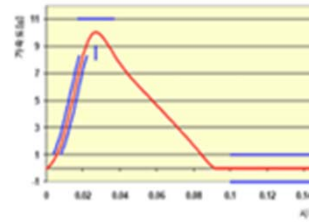


**Rr: WorldSID 50%**

# Update Test Protocols (Current vs. Future)

## Whiplash

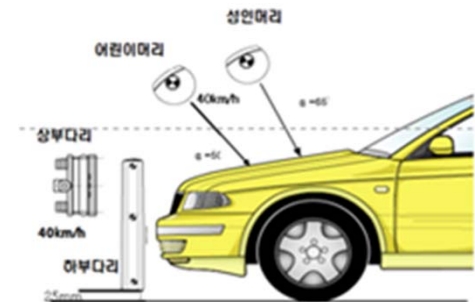
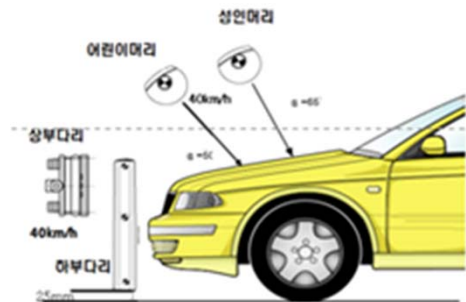
- This test is rear crash using sled equipment
- Test velocity is 16 km/h and dummy is BioRID II



**Add 2<sup>nd</sup> Row Seat Dynamic Tests**

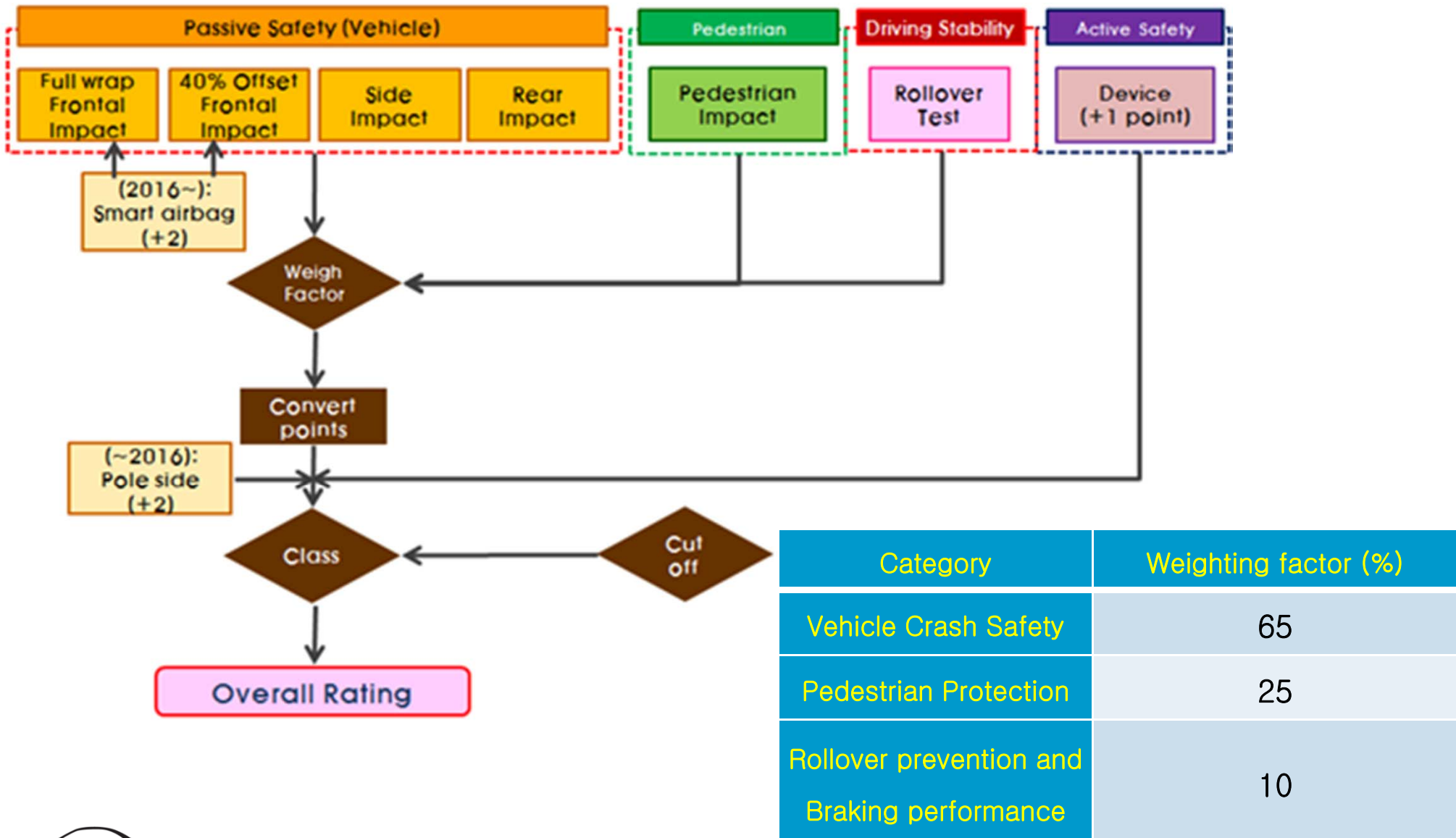
## Pedestrian Protection

- Head and leg form are impacted on vehicle hood and bumper with 40 km/h velocity
- Evaluate head and leg injuries



**Active Hood or Pedestrian Airbag Test if avail.**

# Overall Rating Evaluation Procedures



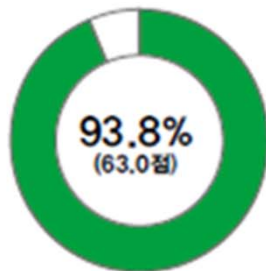
# New Overall Rating Scoring Display System

## Overall Rating

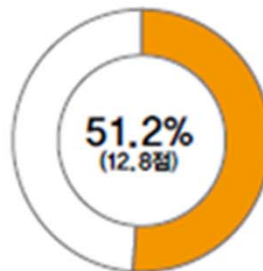


## Category

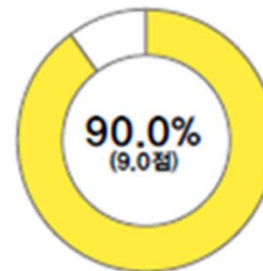
Passive Safety



Pedestrian



Driving Stability



Active Safety





**Thank you for your attention!**

[www.car.go.kr/kncap](http://www.car.go.kr/kncap) (website)

[m.car.go.kr/kncap](http://m.car.go.kr/kncap) (mobile)

