

Child Restraint Standards

WHO Road Safety Workshop

11 October 2016

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Consumer Organisations

History in advocating safe transport of children in cars

- Raise awareness
- Allow consumers to make informed choice
- Influence Regulations

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Consumer Organizations

Umbrella Organizations:



Participating in



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Child Restraint Systems

- Car child seats or Child Restraint Systems (CRS):
 - Designed to guarantee correct restraint of a child in a passenger vehicle.
 - One of the most important and effective passive safety devices in the vehicle

186,300 children
die every year in road
accidents



CRS reduce the
risk of death in
80%

Source: FIA toolkit for child safety in cars.

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Global Status Report on Road Safety

- Effectiveness of Child Restraint Systems (CRS) varies per category:
 - RWF infant carrier: 90% reduced risk compared to unrestrained
 - Booster seats 77% reduced risk compared to unrestrained

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Basic Principles

- Children should benefit same level of protection as adults
- CRS and car manufacturers (OEM's) share responsibility
 - Car manufacturers facilitate CRS interface, and allow CRS to benefit from built in provisions
 - CRS manufacturers develop compatible CRS that protect children well.

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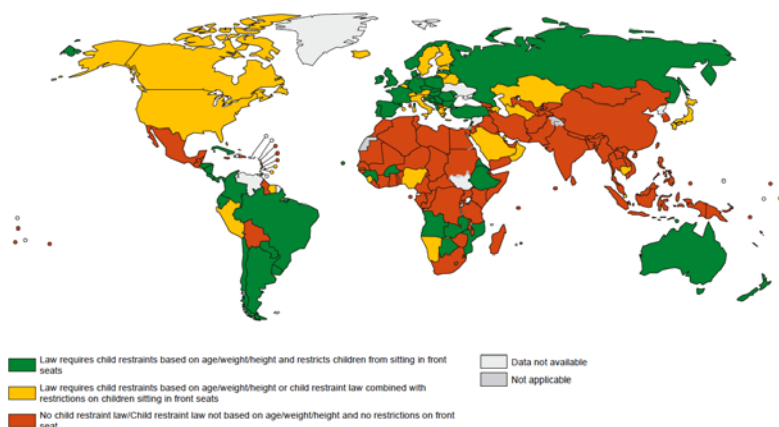
Legal Requirements

- Standards of Approval
 - Set minimal level of protection (technical requirements etc)
 - Define car CRS interface (ideally 'plug and play')
- Laws regarding use of CRS
 - Mandatory use of CRS for children up to certain weight / length/age
 - Sanctions when violated

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Global Status Report on Road Safety

Countries meeting best practice criteria on child restraint laws



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Standards



UN-R 44
(and others)



FMVSS213

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Standards



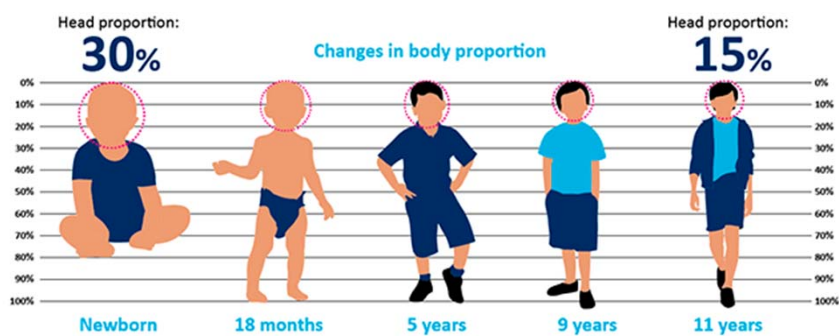
UN-ECE 1958 agreement:
Regulation 44

Uniform provisions concerning the approval of restraining devices for child occupants of power-driven vehicles ("Child Restraint Systems")

- 43 contracting parties signed up
- A.o. front and rear impact / roll over test
- Definitions of envelopes, belt length, anchorages

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Body proportions



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Types of CRS

Infant carriers
Group 0+ (<13kg)



Toddler seats
Group 1 (9-18kg)



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Types of CRS

Booster seats
Group 2/3 (15-36kg)



Booster cushion
Group 2/3 (15-22-36kg)



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Installation in car

Seatbelt



Isofix



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From Reg 44 to Reg 129

Reg 44:

- Developed in the 1980s and since then many times amended / updated
- Concerns
 - Difficult to understand for consumers
 - Misuse risks (lower level of protection)
 - No encouragement to transport toddlers (>13kg) rearward facing
 - No side impact test procedure



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Misuse

Wrong belt routing



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Side impact protection

With side protection



Without side protection



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Regulation 129

(Enhanced Child Restraint Systems)

- will replace Reg 44 (Child Restraint Systems)¹⁾
- Main characteristics:
 - Introduction side impact test
 - RWF transport mandatory until 15 months
 - Reduced misuse
 - Stature based classification
 - Q-dummies
 - Improved car compatibility



¹⁾ Required modification of EU Seat Belt Wearing Directive

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R44 vs R129

Regulation 44: Child Restraint Systems (CRS)

- Mass based classification
- Fixed weight groups
- (semi)Universal / vehicle specific
- Forward facing >9kg
- P-dummies
- No side impact test

Regulation 129: Enhanced Child Restraint Systems (ECRS)

- Stature based classification
- Size ranges (not fixed)
- Universal / vehicle specific
- Rearward facing < 15 m
- Q-dummies
- Side impact test

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Current Status

Regulation 44: Child Restraint Systems (CRS)

- Isofix withdrawn:
 - no new approvals from 1 sept 2017
 - no extensions from 1 sept 2020
- Booster cushions **only group 3**
(for children >125cm)



Regulation 129 (i-Size): Enhanced Child Restraint Systems (ECRS)

- Phase 1: June 2013
Isofix baby / toddler seats <105cm
- Phase 2: mid 2017
booster with backrest <135cm, Isofix optional
- Phase 3: t.b.d.
belted baby / toddler seats



No new R44 approvals once R129 is finalised

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Challenges

- Low awareness in countries with young (or no) history of mandatory CRS use
- Availability of affordable products
- Weak market surveillance

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Way forward

- Apply
 - Usage laws
 - UN Regulations
- Awareness campaigns (local “car seat check” systems)
- Encourage use with incentive schemes
- Consumer Information Programs
 - Several NCAPs include Child Occupant Protection Rating
 - CRS test programs reward best practices

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LATIN NCAP September | 2016




Chevrolet Spark GT - NO Airbags

  <p>0.00 max. 34.00 - Adult Occupant</p>	  <p>8.78 max. 49.00 - Child Occupant</p>
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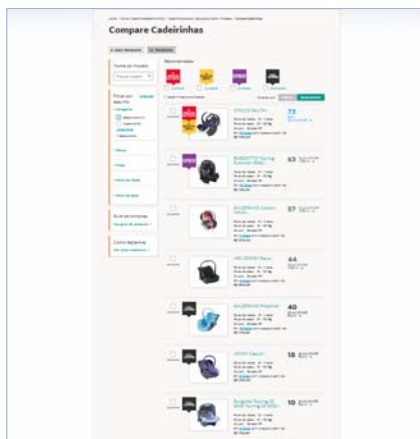
Latin NCAP



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CRS test for Latin America

- Frontal impact
(NCAP severity)
- Side impact
- Ease of use



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Side impact

Burigotto Touring 3030 (2014)



Burigotto Touring 3042
Evolution (2015)



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Toolkit



http://www.roadafety.fia-grants.com/TOOLKIT_CONTENTS/index2.html

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Summing up

- Implement UN R44 where no Regulation is in place
- Encourage side protection provisions
- Speed up introduction of LATCH / Isofix seats
- Encourage RWF transport of toddlers
- Allow UN R129 approved products

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Thank you!

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