

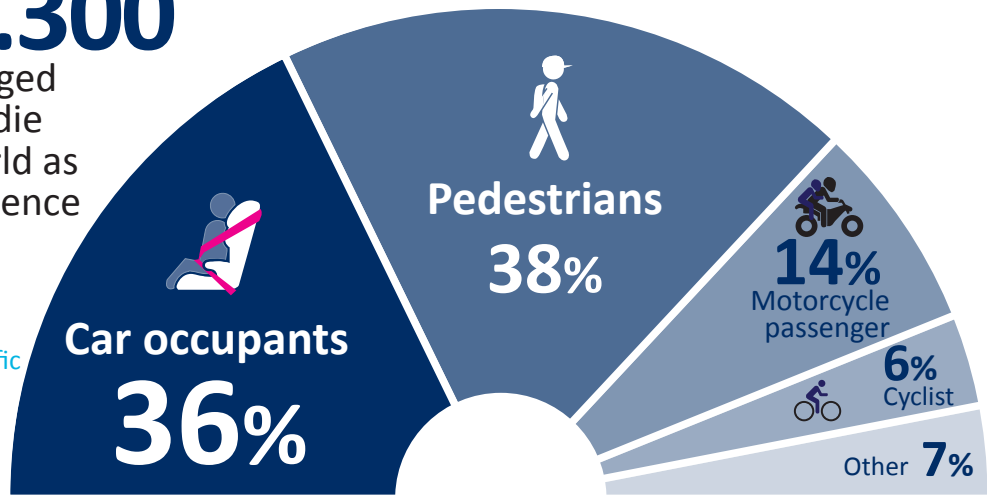
# CRS AND ROAD SAFETY

Every year,

# 186.300

children aged under 18 die in the world as a consequence of traffic accidents.

36% of dead children in traffic accidents were occupants in a four-wheeled vehicle.



 **Every eight minutes a child dies in a car accident**

## Legislation: countries with specific regulations on CRS

**96** countries have a specific act on CRS use

**56%** countries  
Child restrain law

**44%**  
No child restrain law

But they only represent 32% of the global population

**32%**

**68%**

...and only 23% adequately supervises its enforcement

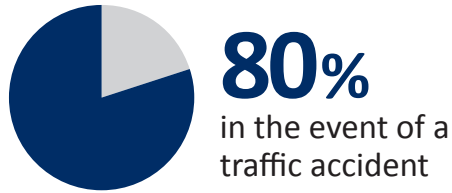
**23%**

**77%**



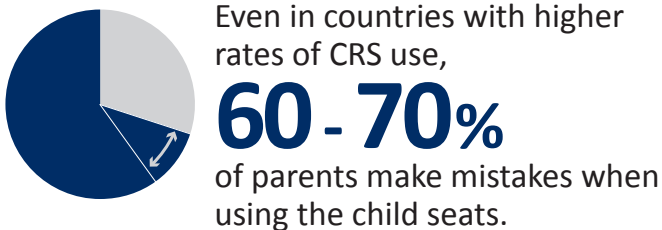
## EFFECTIVENESS AND MISUSE

Child Restraint Systems (CRS) reduce the child passenger's death risk by:



**i But only when properly used !**

- ✓ The child seat must be adequate for each of the child's growth phases.
- ✓ It must be correctly attached to the vehicle.
- ✓ The child must be properly restrained by a harness or belt.

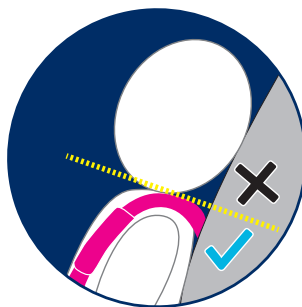


Sources: Safe Kids Worldwide (USA data) and CASPER Project (European data).

In 60% of child seats with harness, the child is incorrectly restrained:



The harness must rest tight on the body with protectors correctly positioned and without any twists.



Top straps must be at the same level or below the shoulders.



Waist straps must be placed as low as possible on the child's lap.



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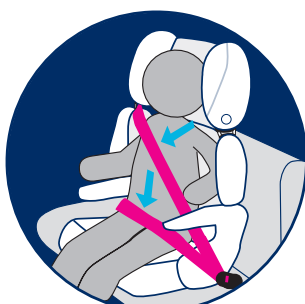


## 25% of child seats with belts are incorrectly attached to the vehicle

The belt must run through the child seat guides placed under the armrests.



Loose belts or placed under the armpit are the most common examples of misuse in child restraints with belts.

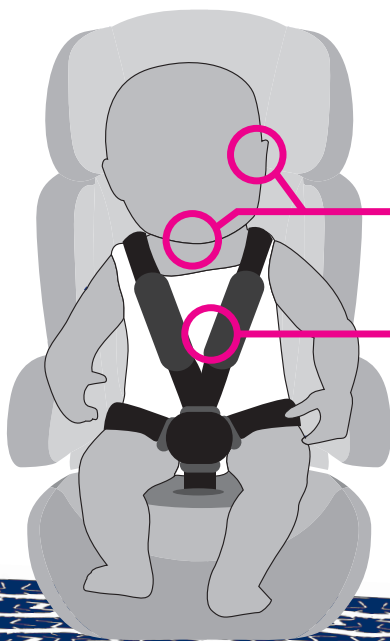


The belt must run through the upper anchorage of the backrest and over the outer part of the shoulder (not touching the neck). The horizontal band must restrain the child by the pelvis (not the abdomen).



It must be tight without being loose or twisted.

## Most common examples of misuse: main risk zones



### HEAD AND NECK

Serious risk of injury due to incorrect restrain with harness or belt.

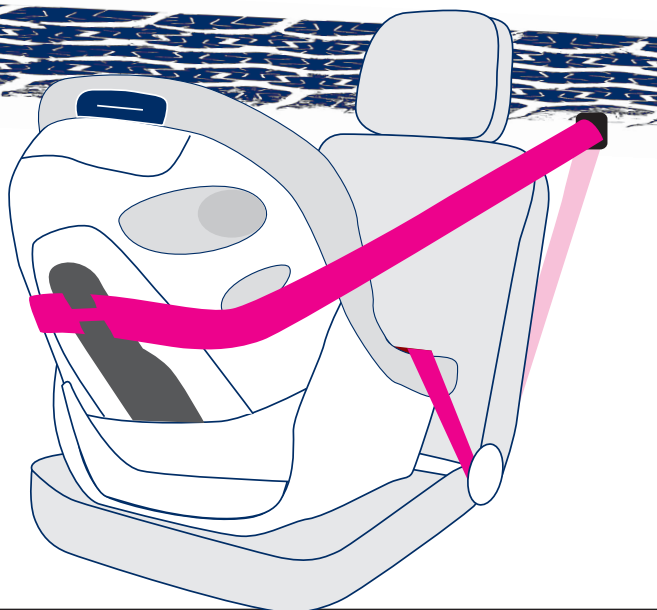
### TORSO

Risk of serious injury due to incorrect restrain with belt or incorrect restrain of child seat to the vehicle.

## SRI Placement: Rear-face Installation

**It is recommended to keep the child seat rear facing until the child is 15 months old.**

In case of collision, it reduces the pressure on the neck and backbone which are not sufficiently formed yet. Airbags must always be deactivated if a child seat is placed on the passenger's seat.



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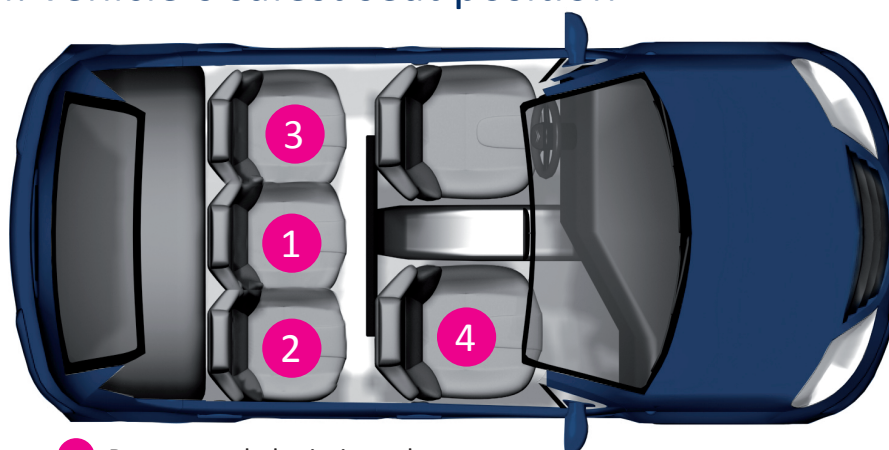




Volvo developed in 1964 the first rear facing CRS. It installed the prototype on its model PV544.

## CRS position: vehicle's safest seat position

### Seating position of the child seat



+ Recommended priority order

**Rear positions are recommended for all child seat models:**  
The risk of serious injury is 15% lower on rear positions.

**The safest position is mid back** (away from possible lateral impacts and vehicle's rigid elements) only if it has a three-point seat belt.

### Main sources

Global status report on road safety 2013/15 (WHO).

Ten strategies to preserve child road safety (campaign #Savekidslive).

Seat belts and child restraint systems. A manual of road safety for decision-makers and professionals (FIA Foundation).

Seatbelts: current issues (University of California Berkeley Traffic Safety Center Newsletter, 2002).

