

# A Global CPS Survey:



Products, Policies, and Practices  
Denise Donaldson, Safe Ride News, CPST-I  
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# Objectives



- ✦ “Geek Out” on Car Seats!
- ✦ Develop a better understanding and respect for other approaches to CPS. BIG PICTURE
- ✦ Gain insights into new technology that may appear here in the U.S.

# Methodology



- ✦ Online Survey of CPS industry professionals
- ✦ Analysis of “International Conference – Protection of Children in Cars” materials.  
(December 2010, Munich, Germany)
- ✦ In-person research in England and Sweden
- ✦ Other sources (Internet, CPS Listserv, etc.)

# Safe Kids Worldwide

Australia  
Austria  
Brazil  
Canada  
China  
Germany  
India  
Israel  
Jordan  
Korea  
Mexico  
New Zealand  
Philippines  
South Africa  
Thailand  
Uganda  
United Arab Emirates  
United States  
Vietnam



SKW is in 19 countries worldwide and encourages expansion into new areas.

# Challenges and Opportunities





# European Union



# European CR Categories



- ✦ Directive from United Nations, standard ECE R44.04
- ✦ ECE = Economic Commission for Europe, an agency to encourage cooperation among European nations
- ✦ European CR categories called “Groups”
- ✦ Four groups, 0-3, determined by weight

# European CR Categories

## Choosing your baby's car seat

Safety advice	Group 0/0+ (infant carrier)	Group 0+/1 (combination)	Group 1	Group 2	Group 3 (booster seat)	Group 1, 2, 3	Group 2, 3
<ul style="list-style-type: none"> <li>The latest European regulations define several groups, each one suitable for a range of weights</li> <li>Never fit a car seat where there is a passenger airbag</li> <li>Isifix is now a worldwide standard fitting system that fits the seat directly to the car instead of using a seat belt</li> <li>All our car seats and infant carriers comply with ECE R44-03</li> </ul>	<ul style="list-style-type: none"> <li>Group 0 up to 10kg (22lbs) / birth to 6-9 months</li> <li>Group 0+ up to 13kg (29lbs) / birth to 12-15 months</li> <li>Rearward facing</li> <li>Secured to seat by adult 3 point lap and diagonal seat belts, with separate integral harness</li> <li>Many have a base that remains in the car for easy fitting</li> <li>Baby's head should not protrude over top of car seat shell</li> </ul>	<ul style="list-style-type: none"> <li>Up to 18kg (40lbs) / birth to 4 years</li> <li>Rearward facing up to 13kg (29lbs)</li> <li>Forward facing over a minimum of 9kg (20lbs) and when baby can sit up unaided</li> <li>Car seats are tested according to the weight of the child they are designed for</li> <li>For optimum support of the head, it is advisable to keep your baby rearward facing until they reach the maximum permissible weight</li> </ul>	<ul style="list-style-type: none"> <li>9-18kg (20-40lbs) / 9 months to 4 years</li> <li>Forward facing</li> <li>Secured to seat by adult 3 point lap and diagonal seat belt</li> <li>Often have multiple recline positions</li> <li>Separate integral harness for your baby</li> <li>From Group 1 car seats upwards the child has out grown the seat when the top of the seat reaches eye level or the maximum permissible weight is reached</li> </ul>	<ul style="list-style-type: none"> <li>15-25kg (33-55lbs) / 4 to 6 years</li> <li>Forward facing</li> <li>High backed booster seat</li> <li>Seat belt guides allow you to use the adult lap and diagonal belt but ensure that it is guided away from the face and neck for comfort and safety</li> <li>Back rests are usually height and width adjustable to grow with your child</li> </ul>	<ul style="list-style-type: none"> <li>22-36kg (49-79lbs) / 6 to 11 years</li> <li>Forward facing</li> <li>Designed to provide the correct positioning of the adult lap belt across the thighs and the diagonal seat belt over the shoulder</li> </ul>	<ul style="list-style-type: none"> <li>9-36kg (20-79lbs) / 9 months to 11 years</li> <li>Forward facing</li> <li>Integral harness used on Group 1 seat can be removed so the adult lap and diagonal seat belt can be used for Group 2 and 3</li> <li>Back rests are usually height and width adjustable to grow with your child</li> <li>Some back seats are removable to leave a standard booster seat</li> </ul>	<ul style="list-style-type: none"> <li>15-36kg (33-79lbs) / 4 to 11 years</li> <li>Forward facing</li> <li>Uses adult seat lap and diagonal seat belt</li> </ul>

Expert advice at John Lewis

# European CR Categories



<b>Group 0</b>	<b>Group 0+</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
up to 10 kg (22 lbs)	up to 13kg (29lbs)	9-18 kg (20-40 lbs)	15 - 25 kg (33-55 lbs)	22 - 36 kg (48-79 lbs)
Infant seat, rearward only	Infant seat, rearward only	Forward- facing CR w/ Harness	Booster Seat or Cushion	Booster Seat or Cushion
from birth to 6-9 months	from birth to 12-15 months	from 9 months – 4 years	from 4 to 6 years	from 6 to 11 years

# European COP Laws



- ✦ 2003 Directive of the European Parliament
- ✦ European Union countries directed to enact laws for child passengers up to 12 years or 4' 5"

# ECE Terminology



- ✦ Child-Safety Chair
- ✦ Carry Cot
- ✦ Y-Shaped Belt
- ✦ Inclined Position
- ✦ Trolley
- ✦ ISOFIX (always rigid!)

# United Kingdom



✧ The United Kingdom is made up of England, Scotland, Northern Ireland and Wales

✧ Area:

94,000 sq. mi.

✧ Population:

62 million

✧ GDP per capita:

\$35,000

# What's Different in the UK?

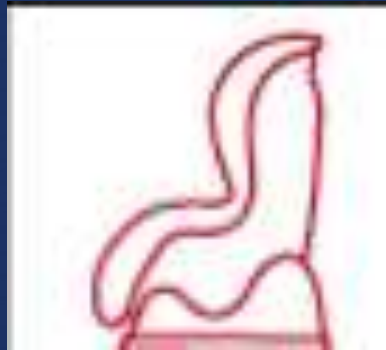


- ✦ CRs can be “Seat Belt Installation Only,” “ISOFIX Only,” or a combination of both.
- ✦ Convertible CRs are fairly rare
- ✦ Infant seats to 29 lbs (O+), but are too short to hold older infants
- ✦ Most infants move to FF CR around 9 mos.

# Typical Stages in the UK



Around 9  
mos.



Usually at about  
40 lbs. (18 kg)



# CR Shopping In England



Peter Jones (London)  
and Daniel (Windsor)  
Department Stores

Lingerie fitting service, 2

Nursery advice, 3

Personal fashion advice, 2

# What's Different in the UK?

- ✦ Stabilizing foot (foot prop) on many FF and RF car seats.
- ✦ No harness retainer clips.
- ✦ Top tethers not typical.
- ✦ Infant seats (Group 0 and 0+) without a base are common.



Photo: Maxi Cosi

Maxi Cosi FamilyFix System  
(w/ Pebble, left, and Pearl, right)

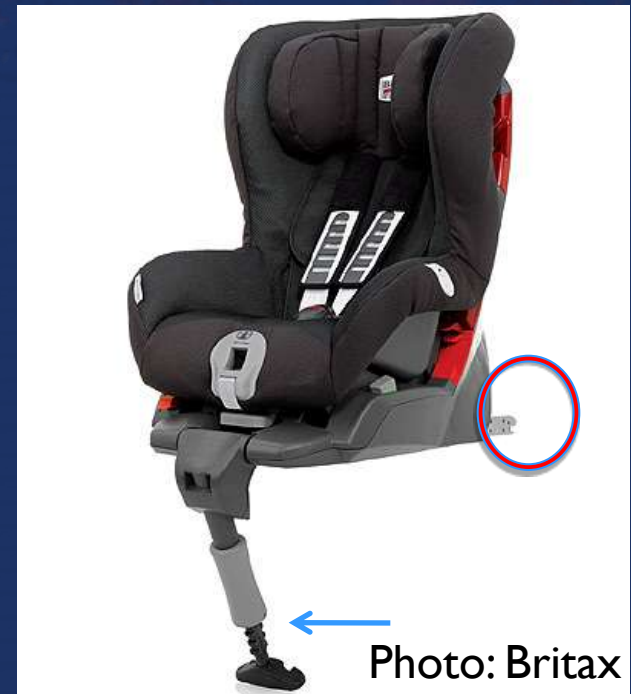


Photo: Britax

Britax Safefix Plus (above)

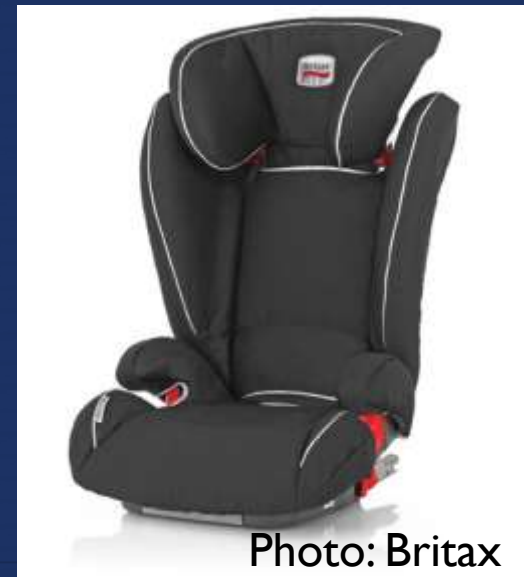


Photo: Britax

Britax  
Kidfix

# Maxi Cosi Tobi belt path and lock-offs.



Source: Maxi Cosi



Some CRs have features to make loading the child easier.



This CR  
has a crotch  
buckle on a  
stiff hinge  
mechanism.



# Sweden



✧ Sweden has many similarities with other Scandinavian countries: Finland, Norway and Denmark

✧ Area:

174,000 sq. mi.

✧ Population:

9 million +

✧ GDP per capita:

\$36,000



# Sweden = Rear Facing!

Sweden leads the world in promoting the advantages of riding rear facing.

CRs typically hold children rear facing to weights in excess of 50 lbs.

Most kids ride rear facing until 3 or 4 years, some as old as 6!

# Typical Stages in Sweden



Around 3 or 4 years

# How do they do it?

Years ago, Swedes identified benefits of RF and developed CRs and cars to suit this.

Two main differences:

- Swedish-style tethering
- Installation in the vehicle front seat not frowned on, used if necessary

# Swedish Rear-Facing Scenario



Photo from [www.carseat.se](http://www.carseat.se)

# Sakta Car Seat Store



# Sweden = Rear Facing!



This Maxi Cosi FamilyFix system, popular in England, is also sold in Sweden – but not the FF option, since this child would ride RF there.

Photo: Maxi Cosi



In Sweden, a dual rear tether is common.



# What else is different in Sweden?

- Rebound mitigation – tethering and/or bar
- Foot props
- No harness retainer clips
- No switchable seat belts
- CRs may be ISOFIX or not
- Line to show where CR may overhang

# Rear Tether Attached to CR with Buckle



# Angle Prop on Britax CR



# Britax CR Label



# Typical Labeling



Maxi Cosi CR

# Overhang Line



Maxi Cosi CR

Duologic CR fits into a base-like structure and can be removed to carry. Looks big, but fits in small cars.



# Italy



✧ Italy is a southern European country and may share similarities with others in that region.

✧ Area:

116,000 sq. mi.

✧ Population:

60 million +

✧ GDP per capita:

\$29,000

# CPS in Italy/Southern Europe

Like other European countries, follows ECE R44.04

Stages followed essentially like UK

ISOFIX or Seat Belt

Infant seats usually have no base

CR use drops off after age 4, despite law

# Austria



✧ Austria is a central European country and may share CPS similarities with others in the region.

✧ Area:

32,000 sq. mi.

✧ Population:

8 million +

✧ GDP per capita:

\$39,000

# CPS in Austria/Central Europe

Like other European countries, follows ECE  
R44.04

Stages followed essentially like UK

Energy-Absorbing Shields replace some harnesses

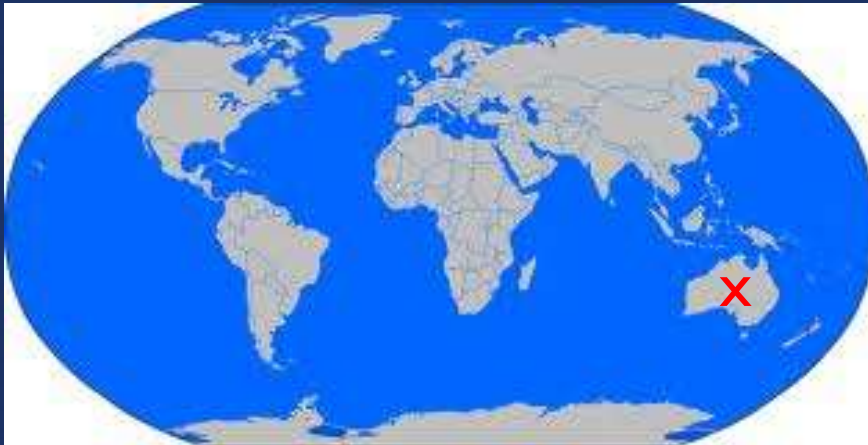
Infant seats usually have no base

CR use drops off after age 4, despite law. (Austrian law goes beyond EU to age 14 or 4' 11")

# Kiddy “Comfort Pro”



# Australia



✧ Shares technology, regulations, and practices with New Zealand.

✧ Area:

2.9 million sq. mi.

✧ Population:

22 million +

✧ GDP per capita:

\$39,000



# Australian/NZ Rules Changing

Recent changes In Australia/New Zealand:

- \* 2009 update to Road Rules  
Includes required CR use to age 7
- \* 2010 update to AU/NZ I 754 Standards  
Shifts focus to age, rather than weights



# New Australian/NZ CR Types

Type A1 – Rear facing w/ harness to 6 months

Type A2 – Rear facing w/ harness to 12 months

Type A3 – Car bed

Type B – Forward facing; 6 months to 4 years

Type C – Harness (no chair); 4-10 years

Type D – Rearward facing chair; up to 4 years

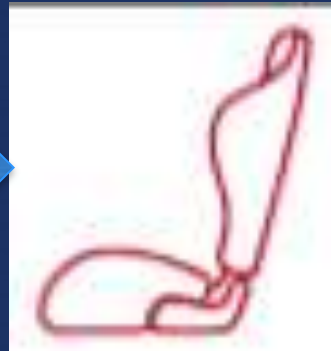
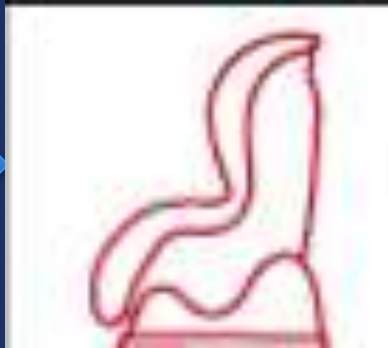
Type E – Booster — use with a Type C  
harness or seat belt, 4-8 years

Type F – NEW! Booster — use with a Type C  
harness or seat belt, 4-10 years

# Typical Stages in Australia/New Zealand



Around  
6 months



Around  
20-40 lbs.



# Terminology Down Under

Capsules

Bassinet

Lap & Sash

Upper Anchorage Strap

Ute

Belt Converter or Gated Buckle

# Australia = Tethers!

In Australia/NZ, tethers are required for all RF and FF car seats (optional on some BPBs).

Rear Tethering always in the “Australian” method.

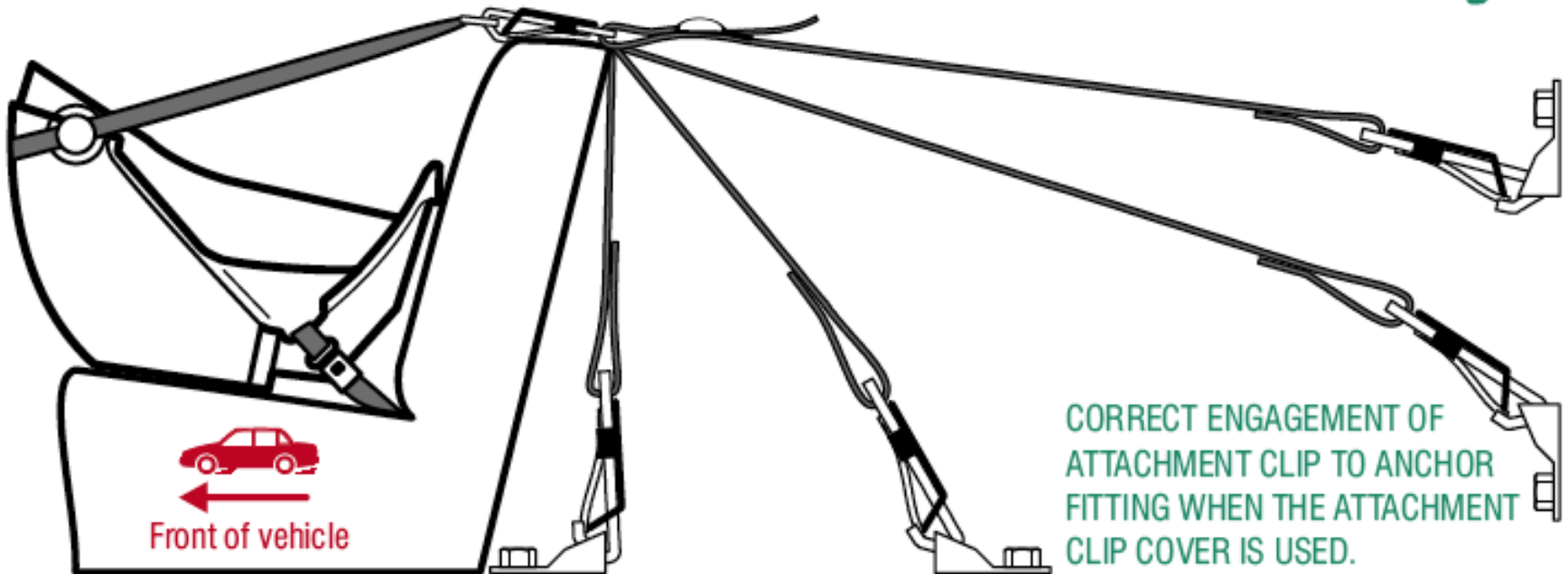
Usage rates high.

Does rear-tethering make people more likely to use forward facing, out of habit?

# “Baby Safety” Capsule

**Note:** Fittings have been enlarged and straps have been lengthened/shortened to improve clarity of the diagram.

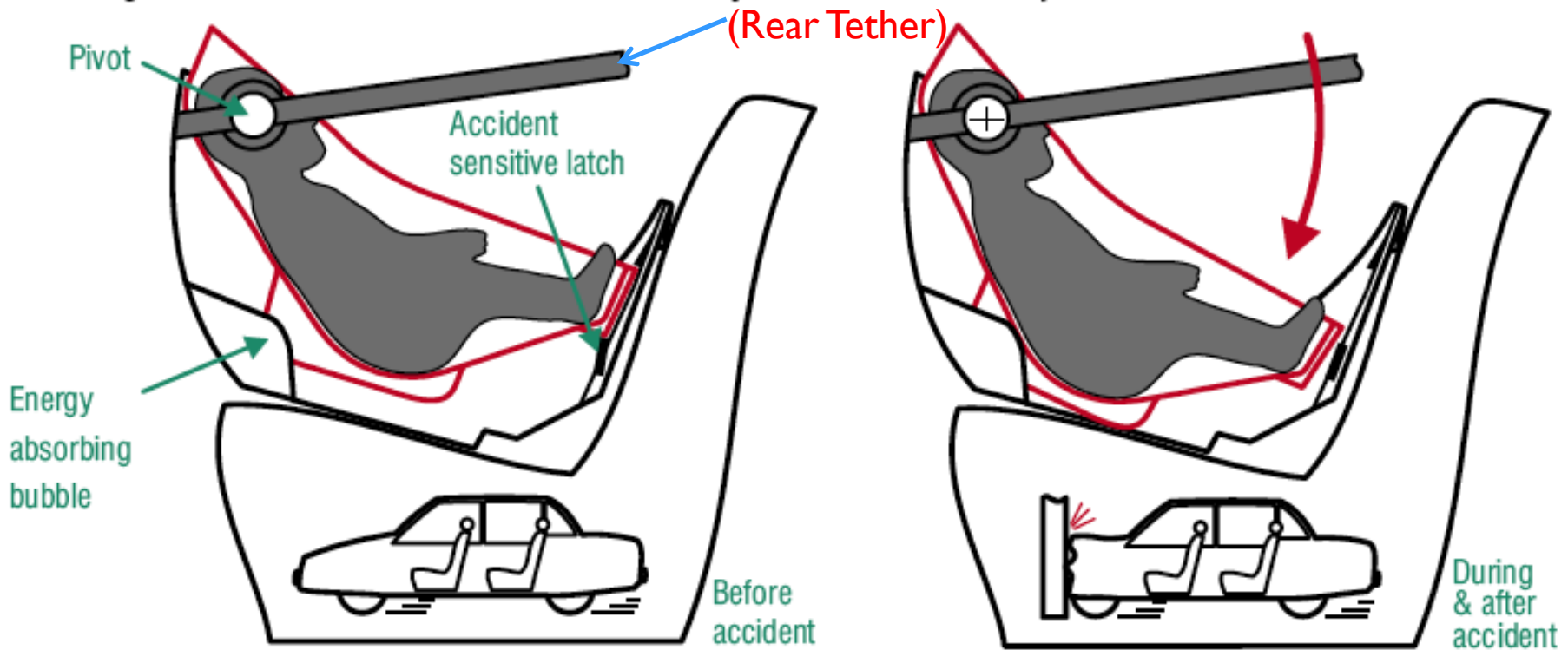
**CORRECT** ✓



Source: Safe N Sound Baby Safety manual

# Crash Dynamic of “Baby Safety”

During an accident, the Baby Safety Capsule wants to continue moving forward. The accident sensitive latch disengages during an accident allowing the bassinet to turn about the pivot. With the bassinet turned the impact forces are more uniformly distributed over the whole of the baby's torso and head. The turning bassinet contacts and depresses the energy absorbing bubble, therefore allowing the bassinet to come to rest smoothly without a sudden jolt.



Source: Safe N Sound Baby Safety manual

# Other Differences

- 6-Point Harnesses
- Generally more interest in crotch strap/ anti-submarining
- No harness retainer clips
- All capsules have bases
- Side impact testing since '04
- ISOFIX rare
- ELRs and switchable retractors
- Add-on harnesses to extend use

# Hipod “Milan”



Photos: Hipod



**Forward Facing.**  
For use with children  
from 8kg up to 18kg.

# “Protecta” Harness



Bring the anti-submarine clip up and behind the lap portion of the vehicles safety belt.



**Protecta Child  
Safety  
Harness  
compatible**

# “Gated Buckles” and “Belt Converters”



A Britax gated buckle or a locking clip is used to change a lap and sash belt into a lap belt for harness use.

# Japan



✧ Area:

146,000 sq. mi.

✧ Population:

127 million +

✧ GDP per capita:

\$33,000



# CPS in Japan

- Brands Combi, Aprica, Ailebebe, Takata
- Many CRs have rotating feature
- Uses ECE R44, Japanese Technical CR Regs
- Typical stages similar to UK
- COP law covers children under 6

# Rotating CRs



Lie Flat Mode



Rear-Facing Mode



Forward-Facing Mode

# Ailebebe Kurutto CR



# China



✧ The People's Republic of China is the most populous country in the world.

✧ Area:

3.7 million sq.  
miles

✧ Population:

1.3 BILLION +

✧ GDP per capita:

\$7,240



# CPS in China

Brands include Combi, Dorel, STM

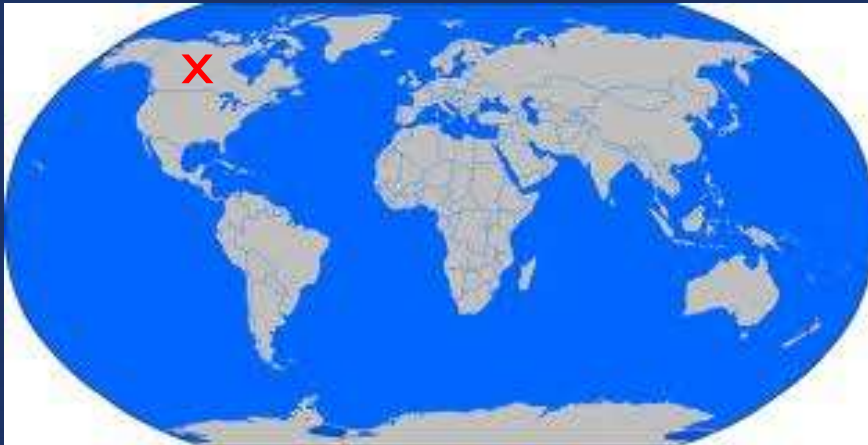
Lifestyle very different regarding kids riding

No laws governing CR use

Standards being proposed/developed

ISOFIX rare

# Canada



✧ Area:

3.9 million sq. mi.

✧ Population:

34 million +

✧ GDP per capita:

\$38,000

# What's Different in Canada?

Products much like those in U.S.

Main differences:

- Forward-Facing Tethering Required
- Fewer High-Weight Harness Seats
- Cam-Wraps Generally Not Allowed

# Mexico



✧ A country in North America that shares many similarities with Latin American countries.

✧ Area:

762,000 sq. miles

✧ Population:

111 Million +

✧ GDP per capita:

\$14,500

# CPS in Mexico & Latin America

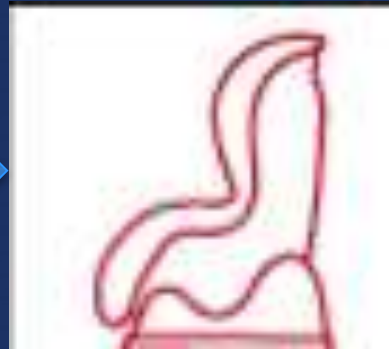
Brands familiar in U.S: Britax, Evenflo, Graco, Peg Perego, Maxi Cosi.

CR technology generally same as in U.S.

CRs are often not used.

No booster seats at all.

# Typical Stages in Latin America



Vehicle seat  
belt (though  
belt usage  
rates low)

Usually at about  
30-50 lbs.





# COP Laws In Latin America

No COP Laws in some countries

- Argentina, Belize, Cuba, Dominican Republic, Ecuador, Guatemala, Honduras, Panama, Paraguay.
- These countries are working to create laws

All other Latin American countries have COP laws, but they are unenforced.



# For More Information:

If you want to explore CPS around the world using some of the sites that I found interesting, you can find more information at:

[www.saferidenews.com](http://www.saferidenews.com).

Look under “Professionals/CPSTs” and click on “CPS Around the World.”

# Many, Many Thanks!

- ❖ Barbara Birkenshaw, Volkswagen
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- ❖ Begnt Lager, Regal Lager
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- ❖ Iain Powell, Britax Roemer
- ❖ Chu Sichao, China
- ❖ Said Nakhla, Goodbaby Infant Products Group
- ❖ Max Marsiaj, Sabelt S.p.A.
- ❖ Christian Baires, Regal Lager
- ❖ Raed El-Jawahri, Ford Motor Company
- ❖ Combi, Japan