



# The Canadian Experience with Frontal Airbag Systems

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# Frontal Protection Programs

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1. Collision data
2. Accident investigation teams
3. Collision reconstruction
4. Crash testing



# Crash Investigation Sample

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1. Convenience sample began on April 01, 2005
2. Mostly university based teams (7 – 8)
3. Two most recent model years in any calendar year
4. Any air bag deployment crashes
5. Special investigations
6. Includes EDR equipped vehicles



# Low-Speed Airbag Fatalities by Restraint Use

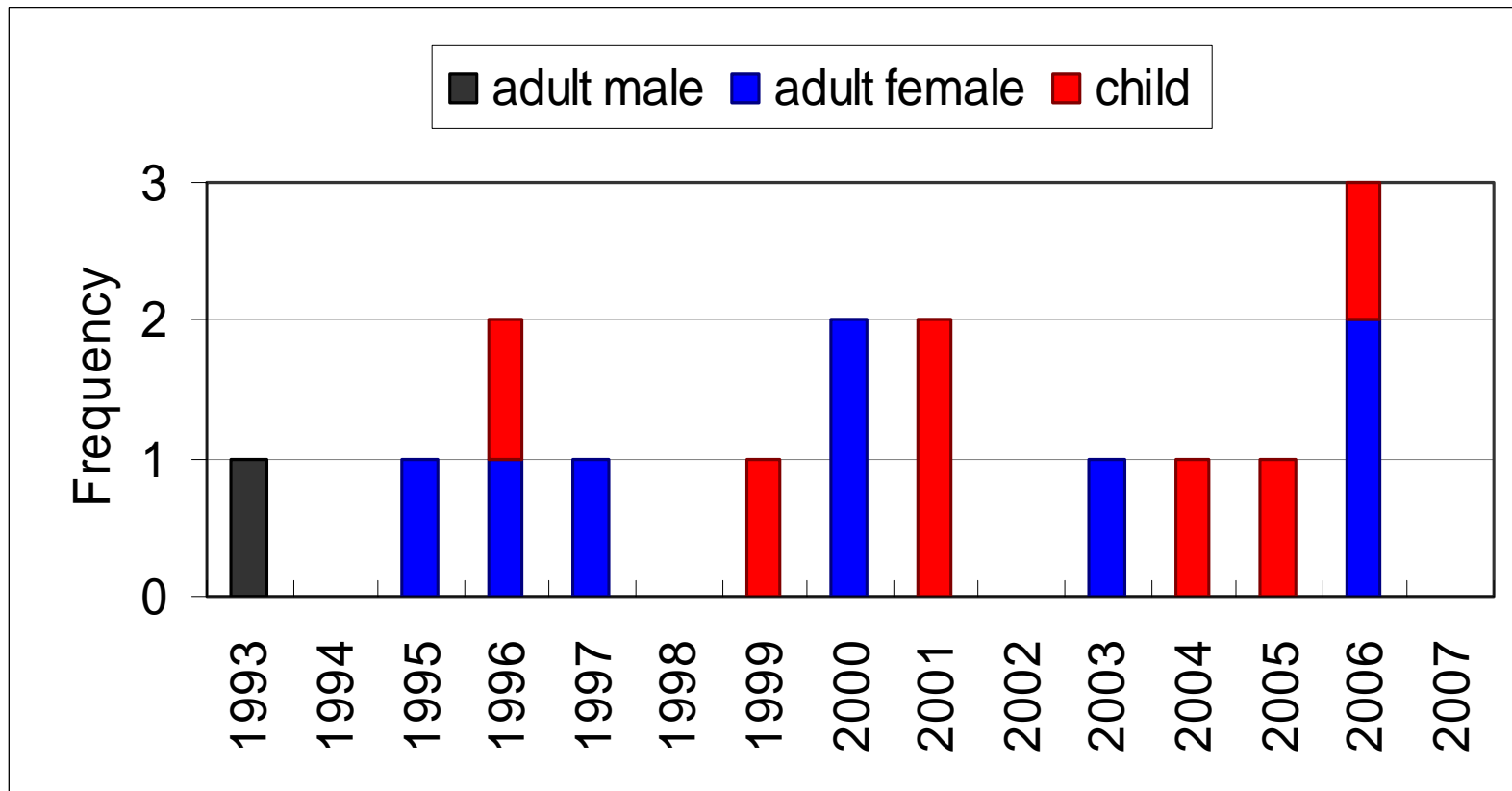
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Since 1993 N = 16

Restrained adults	5
Unrestrained adults	4
Unrestrained children	3
Incorrectly restrained children	4
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Drivers	6
Passengers	10

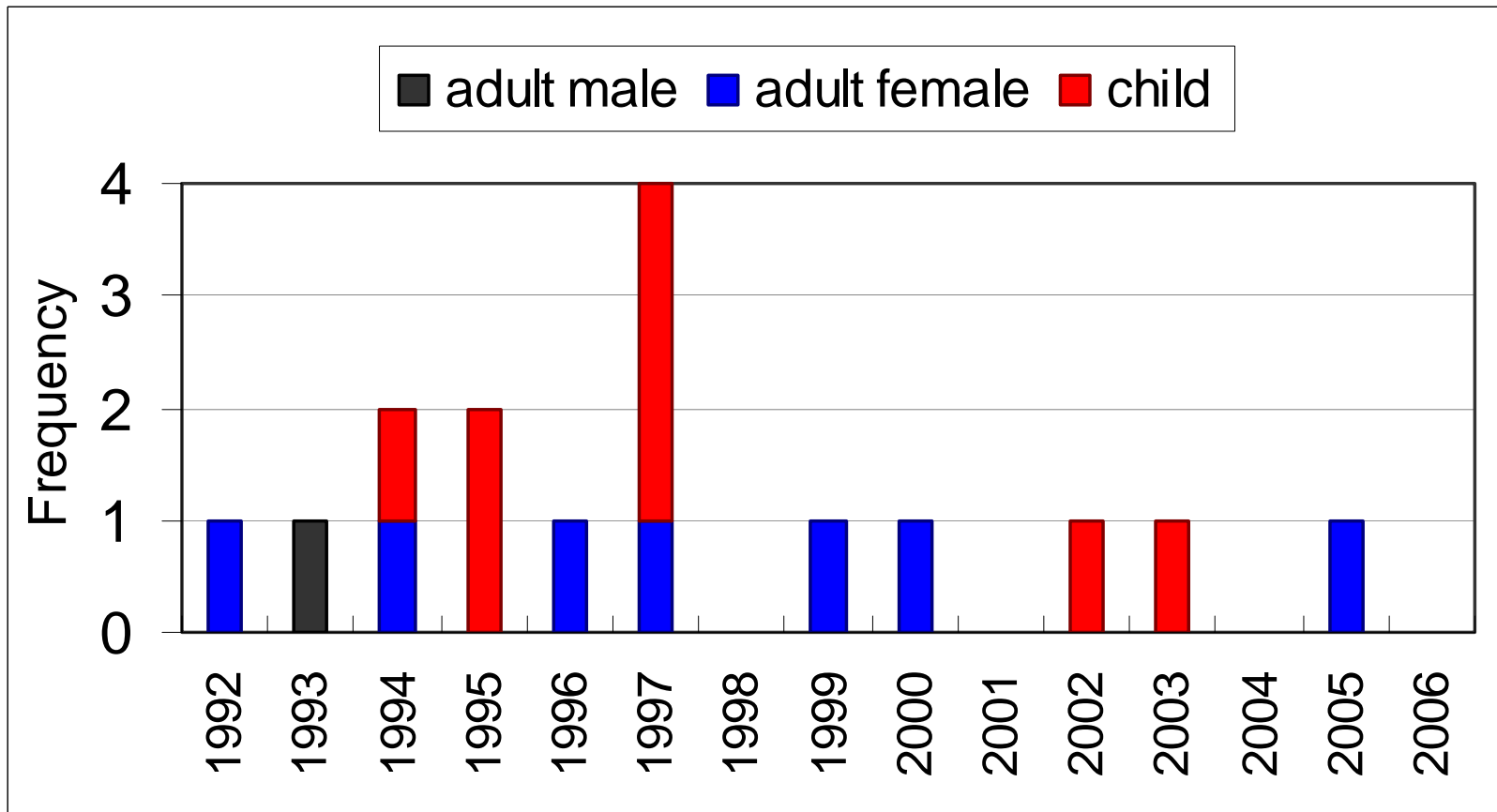


# Low-Speed Airbag Fatalities by Calendar Year



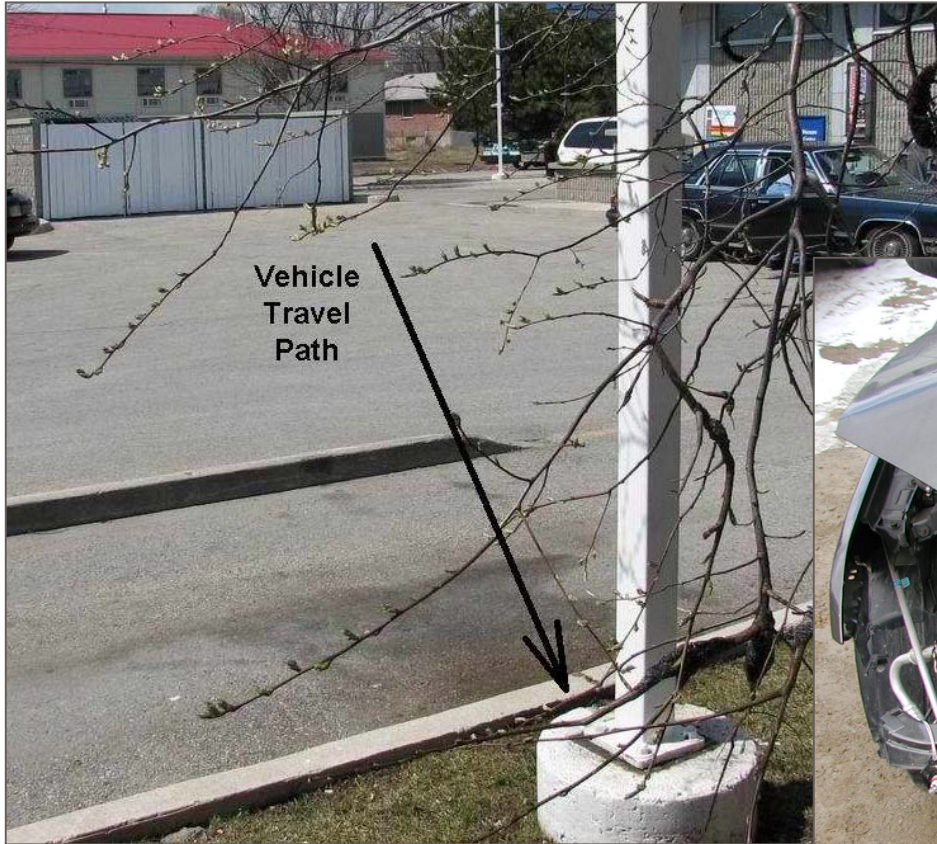


# Low-Speed Airbag Fatalities by Vehicle Model Year





# 2005 MY vehicle



Pretensioners	104.5 ms
First stage	110.5 ms
Second stage	210.5 ms





## 2005 MY vehicle

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83 year-old restrained female passenger

- Supra-orbital subdural hemorrhage
- Bilateral C<sub>5</sub>-C<sub>6</sub> facet subluxation
- Bilateral rib fractures



# 2005 MY vehicle

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# Dummy Capabilities

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..\Side car-to-car\06-224  
Fusion (50) (06-161)  
Trail Blazer)\06-161 Trail  
Blazer (104) Pass.avi



# 2003 MY vehicle

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Delta V 35 km/h





## 2003 MY vehicle

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11 year old incorrectly restrained passenger

- Cerebral edema
- Retro-peritoneal hematoma associated with lumbar fracture





# Summary

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1. No evidence of reduced system performance for newer airbag systems in terms of adult protection;
2. Residual problem may be confined to pre-FMVSS 208 compliant airbags;
3. Public education message must be continued.





# Keep Children in the Rear Seat