



CHILDREN IN AND AROUND CARS

FINAL REPORT

March 2011

INTRODUCTION

The Royal Society for the Prevention of Accidents (RoSPA) began looking into the safety of children in and around cars after it was approached by the family of a toddler who was killed when he was struck by a car on the driveway in 2007.

Between the ages of one and two years, infants' mobility increases at a terrific, but irregular rate, so they can easily escape a parent's supervision for a short time and get into difficulties before the parent realises they have moved. It is not until the age of four or five that children begin to understand the concept of danger, and begin to heed warnings given to them.

While most accidents involving children and cars occur when a child is travelling in a car that crashes, or is hit by a car as a pedestrian or cyclist, there are also cases where children are injured, and sometimes killed, when they are in or around a car, but not in a road accident. These tragic cases usually involve a vehicle reversing over a child on a driveway or a child being injured by something inside the vehicle, such as an electric window.

It is difficult to obtain detailed estimates of child casualties in these types of accidents as they are often not included in the road accident recording system (STATS19). However, an analysis of press reports between 2006 and 2010 found that at least 16 children after being struck by, or falling out of, vehicles on driveways or elsewhere in the grounds of their home. The ages ranged from 12 months to seven years, although 75% of the children were aged two years or younger.

Table 1: Child Deaths involving vehicles on or near driveways, 2006 – 2010, GB*

Year	Age of Casualty	Circumstances
2006	2 years	Vehicle rolled down steep driveway at a nursery
2007	2 years	Family member reversing car on driveway
2007	18 months	Taxi reversing on driveway
2007	12 months	Child accidentally started car which reversed over second child
2008	18 months	Family member reversing car on driveway
2008	18 months	Family member reversing car on driveway
2008	7 years	Neighbour pulling onto driveway
2008	2 years	Neighbour reversing on driveway
2008	5 years	Family member pulling onto driveway
2008	21 months	Family friend reversing on driveway
2008	6 years	Family member operating JCB on driveway
2008	12 months	Car rolled back on driveway
2009	3 years	Neighbour reversing off driveway onto street
2010	2 years	Family member manoeuvring vehicle
2010	2 years	Child accidentally started vehicle and fell out
2010	6 years	Fell out of reversing car

* It should be noted that this data is taken from press reports not official statistics or accident investigations.

Some (older) data is also available from the HASS/LASS database. HASS - the Home Accident Surveillance System - and LASS - the Leisure Accident Surveillance System - are two linked databases holding details of home and leisure accidents (not including road or workplace accidents) that caused a serious enough injury to warrant a visit to hospital. The data is taken from a sample of 16 - 18 accident and emergency departments in the UK, from which national estimates are then calculated.

The HASS/LASS data for 2002 (the last year for which data is available) was searched for 'in-car accidents (not RTAs) involving children aged 0 -14 years'.

There were 202 cases, which would give a UK estimate of roughly 4,141 hospital admissions per year. Almost half of the injuries were to children under 4 years old, and the injuries were split almost evenly between both genders.

Many of the hospital visits recorded in HASS/LASS were not serious injuries – 21% of the children involved were examined but did not require treatment, and 54% were treated on the spot with no follow-up treatment required. Around 1 in 10 cases were referred to the patient's GP.

Another common issue was children taken to hospital because they had swallowed a foreign body, or inserted one in their nose or ear while in a car - accounting for approximately 882 cases. Around 430 of these were due to the child putting an object in their ear or nose (most commonly when the child was around the age of 3 years). There were around 369 instances where children swallowed an object – sometimes resulting in choking – and again, around three quarters of the cases involved children between 1 and 5 years old.

The only other frequent form of injury was due to a pinch or crush between two blunt surfaces, accounting for around 770 visits to hospital. The body part most likely to be injured this way was the patient's hand or fingers (in 80% of the cases), and the most common cause was getting trapped in the door of a car (in 63% of cases).

Over a quarter of the accidents (around 1,333) were due to the child striking an object inside the vehicle, frequently bumped heads for a variety of reasons, and this was likely to happen to patients of all ages.

There have also been several cases of a car being stolen while, unknown to the thief, a child was still inside.

THE SURVEY

Working with Iain's Trust (www.iains-trust.org), RoSPA conducted an online survey (a copy is provided in Appendix 1) between 27 July 2009 and 4 January 2010 to gather further information from parents, carers, guardians, grandparents, friends and relatives of under-sevens, about incidents involving children on driveways. It included questions about times when children have followed adults on to a driveway without the adults realising and when vehicles have been manoeuvred on driveways, with drivers unaware that children were close by. It also addressed in-car child safety, asking whether children had ever been left alone in vehicles and whether children had ever got hold of the car keys without adults knowing.

The purpose of the survey was to gain a better understanding of the size of this problem, and how such incidents happen in order to raise awareness of the hidden risks posed to children by cars, particularly on driveways, and to develop the advice to help parents and carers keep young children safe in and around cars at home.

The findings of the survey have informed RoSPA's advice on this topic, including our "Children in and Around Cars" Factsheet, which is available at www.rospa.com/roadsafety/advice/incarsafety/info/children_in_cars.pdf, press releases and articles. It has also helped to inform an advice leaflet for parents produced by Iain's Trust, "Keeping Children Safe Around Cars", which is available from www.iains-trust.org or from RoSPA.

The Main Findings

The survey was conducted using SNAP software. A weblink was set up to enable participants to complete the survey. This was promoted through press releases issued by RoSPA (27 July and 18 December 2009), in RoSPA "Safety Connections" e-newsletter and through links on RoSPA's website.

285 completed questionnaires were received.

Analysis of the results found that the majority of parents who responded were unaware of the potential for an accident involving their children and a car at home. One of the main issues identified was that parents and carers do not think an accident will happen to their family, unless they know someone who has already experienced one, meaning they do not take simple precautions. Of those who took part in the survey:

- 59% could recall a time when their child had followed them out of the house on to the driveway without them realising
- 22% had started to manoeuvre a vehicle on the driveway and realised their child was close to the car when they thought they were elsewhere
- 95% reported temporarily leaving their children unattended in the car on the driveway while they "dashed back into the house" for something
- 42% said their children had picked up the family car keys without being seen to do so.

However, 68% believed it was unlikely that their child would ever be injured by a vehicle entering or leaving their driveway, and 83% believed it was unlikely their child would ever be injured by a vehicle parked on their driveway.

The survey also addressed leaving children alone in parked cars, following a number of incidents in which: vehicles were stolen with children inside; children were left inside cars in hot weather; or children had managed to start or manoeuvre cars by themselves. Almost two-thirds (63%) of survey respondents sometimes left children inside the car while they made a quick call to somewhere like a shop or school.

FULL SURVEY RESULTS

Q.1. Can you remember a time when your child has followed you or your partner out of the house onto the driveway without you or your partner realising until afterwards?

59% of respondents could recall a time when their child had followed them out of the house and onto the drive, without them realising. (n=284)

Q.2. Have you or your partner ever started to manoeuvre a vehicle on the driveway and realised your child was close to the car when you thought that they were elsewhere?

22% of respondents said that they had started to manoeuvre a vehicle on the driveway and realised their child was close to the car when they thought that they were elsewhere. (n=283)

Q.3. Have you or your partner ever got into a vehicle on the driveway/outside your home with your child(ren) and maybe realising you had forgotten something, dashed back into the house leaving your child(ren) in the vehicle?

95% of respondents reported temporarily leaving their children in the car on the driveway whilst they “dashed back into the house” for something. (n=283)

Q.4. Can you recall a time when your child has been in a parked vehicle on the driveway/outside your home and accidentally released the handbrake?

Sixteen respondents (6%) could recall a time when their child had been inside a parked vehicle on the drive/outside the home and accidentally released the handbrake. (n=281)

Q.5. Has your child ever ran across your driveway to retrieve a toy whilst a motor vehicle has been manoeuvring on the drive?

12% of respondents reported that their children had been seen to run across their drive to retrieve a toy whilst a vehicle was manoeuvring. (n=283)

Q.6. Has there ever been an occasion where you or your partner have driven somewhere with your child in the rear of the vehicle and temporarily forgotten that they were in the back seat after arriving at your destination?

Twenty-three respondents (8%) admitted to temporarily forgetting that their child was in the back seat after driving to a destination. (n=284)

Q.7. When out driving with your child(ren) in the car do you sometimes let them stay in their seats whilst you quickly call into a shop or an older sibling's school for example?

63% of respondents said that they sometimes left their children in their car seats inside the car whilst they made a quick call to somewhere like a shop or a school. (n=283)

Q.8. If you park your car on your driveway please state how often you

Reverse onto your drive so that you drive forwards when next pulling off the driveway

Drive forwards onto your drive so that you reverse out of the driveway when next leaving

26% of parents never reverse onto their drive so that they can drive forwards when next pulling off the driveway. An equal number however (25%) reported that they always reverse onto their drive. (n=261)

Turn your steering wheel when you are parked in order to activate the steering lock

36% of parents said that they never activate the steering wheel lock when parking the car (22% said they always activate the steering lock). (n=261)

Lock your car doors before going into the house

62% of parents always lock their car doors before going into the house. Five out of 261 parents (2%) reported that they never lock their car doors when parked outside the home.

Q.9. When asked where they typically leave their car keys parents gave five main responses. In order of frequency these responses were:

1. On a high level shelf or other high place
2. On a table, hook, worktop or other adult waist to chest height place
3. Inside a drawer, cupboard or pot...
4. In a handbag
5. In the door on a key ring with the house keys

Responses to this open text question revealed a range of safety consciousness in where parents leave their car keys. Some parents were acutely aware of keeping keys out of reach of children: (n=271)

Out of reach of children in a key box fitted to the wall

On top of the living room closet where the children can't reach

On a key hook out of the reach of children (unless they get a stool!!)

Some parents were aware that their keys could be picked up by children:

On the fire place or table, in reach of children

On top of the fridge out of reach (usually)

On a peg inside the front door which is in reach of child

Hanging up on a key rack which is now probably in reach of eldest child

In a drawer in the kitchen which is easily accessed

Whilst other parents did not attempt to keep their keys in any particularly safe place:

Anywhere, it varies, on the floor, in pockets, on tables, on seats...

On the kitchen table or anywhere

Lying around, anywhere

Other safety concerns though were considered by one parent:

On the key ring with house keys in the back door to allow quick escape in the event of a fire

Q.10. Has your child ever picked up your/your partner's car keys without you/your partner seeing them do so at the time?

Q.11. If Yes, Has your child ever then used the keys to get inside a vehicle parked at home?

42% (119) of respondents reported that their children had picked up the family car keys without being seen to do so at the time. Of those, 8% (10) reported that their children had then gone on to use the keys to enter a vehicle parked outside the home.

Q.12. Has your child ever been injured by a motor vehicle on your's or a neighbours' or friend's driveway?

Only eight parents (3%) out of 282 who responded said that their children had been injured on a home driveway by the family car.

Questions 13 to 18 asked for further details of these incidents, such as the age of the child, the nature of the injury, whether the vehicle was being driven forwards or was being reversed at the time, the type of vehicle and who was driving it.

All the vehicles involved were cars, with one exception, which was a four wheel drive vehicle. There was a relatively even split between the vehicles being driven forward or being reversed at the time of the accident.

Injuries ranged from trapped fingers caused by a sibling shutting the car door, to hospitalisation and continuing pain from an injury three years afterwards. In the latter case, the father was washing the car on the driveway with his 2 year old and five year old children. The keys were not in the car but the car was unlocked. The 2 year old got in the driver's seat and the five year old got in the front passenger seat. The 2 year old released the handbrake and as the car rolled backwards the five year old attempted to get out but fell underneath and the car rolled on top of her crushing her leg. The car stopped only stopped when it hit another parked car.

An incident was also reported in a supermarket car park with a 22 month old girl. The father had started the ignition to turn off the immobiliser believing his daughter to be beside him, she had in fact gone behind the car. No further details were given.

Q.19. If no, How likely do you think it is that your child will ever be injured by a vehicle entering or leaving your driveway?

68% of respondents believed that it was unlikely or very unlikely that their child will ever be injured by a vehicle entering or leaving their driveway. (n=282)

Q.20. How likely do you think it is that your child will ever be injured by a vehicle whilst it is parked on your driveway?

83% of respondents believed that it was unlikely or very unlikely that their child will ever be injured by a vehicle whilst it is parked on their driveway. (n=282)

Q.21. When was the last time that you or your partner spoke to your child about playing near parked cars?

32% of respondents said that it had been more than 12 months ago, never, or they couldn't remember, when they last spoke to their children about playing near parked cars.

45% of parents, however, said that they had spoken to their children about playing near parked cars within the last month. (n=281)

Q.22. When was the last time that you and your partner spoke to each other about the possibility of your child(ren) getting hold of your car keys?

Removing the response of 'can't remember' from the analysis, 58% of parents had never spoken to each other about the possibility of children getting hold of their car keys. However, 15% of parents reported speaking to each other about the possibility within the last month. (n=219)

Q.23. Have you heard of any cases where a child under the age of 7 has been injured in an accident involving a motor vehicle whilst on a residential driveway?

49% of parents had heard of at least one case where a child under the age of seven years had been injured by a motor vehicle whilst on a residential drive way. (n=282)

Parents had heard of cases through local and national media, friends, work colleagues, neighbours, family, or were members of the emergency services:

Friend of ours 2 yr old ran out in front of their dad's car when waving bye with the au pair. Luckily he only received a few minor cuts and bruises.

A patient I know was reversed over by his father on the driveway. He had wandered out of the house unseen and was stood behind the car. The car went over him with front & back wheels, he escaped with cuts and bruises.

A child ran out to meet her father coming home from work and was knocked down by him. A friend told me about it as she knew the family.

Friend who has twins aged 4 reversed into her older son when going out with twins as she left the drive.

A friend of a friend's partner; sadly was reversing off his drive and didn't know his two year old son had run out of the house onto the drive and he killed his son. This was many years ago but it has always been at the back of my mind since having children.

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A neighbour's child was run over by their next door neighbour whilst reversing off the drive. The child was 5 years old, not seriously hurt.

A friend's child died after being run over by the family car that his mother had briefly left unattended.

The younger sister (18 months) of one of a girl at ballet was killed by her father reversing out of his house last year. My daughter's best friend's mum did antenatal classes with her.

A colleague's relative had toddlers hit by grandfather whilst reversing.

Next door neighbours child, let the handbrake off the car which rolled backwards down the drive and stopped as it hit the gatepost. A fairly quiet road but could have easily rolled across the road, He was uninjured but very lucky.

CONCLUSION

Between the ages of one and two years, infants' mobility increases at a terrific, but irregular rate, so they can easily escape a parent's supervision for a short time and get into difficulties before the parent realises they have moved. It is not until the age of four or five that children begin to understand the concept of danger, and begin to heed warnings given to them.

While most accidents involving children and cars occur when a child is travelling in a car that crashes, or is hit by a car as a pedestrian or cyclist, there are also cases where children are injured, and sometimes killed, when they are in or around a car, but not in a road accident. These tragic cases usually involve a vehicle reversing over a child on a driveway or a child being injured by something inside the vehicle, such as an electric window.

It is difficult to obtain detailed estimates of child casualties in these types of accidents as they are often not included in the road accident recording system (STATS19). However, an analysis of press reports between 2006 and 2010 found that at least 16 children after being struck by, or falling out of, vehicles on driveways or elsewhere in the grounds of their home. The ages ranged from 12 months to seven years, although 75% of the children were aged two years or younger.

Even more tragically, when children are run over on a driveway, the vehicle is most often being manoeuvred by a close family member. In some cases, children have managed to start the car themselves.

RoSPA, in conjunction with Iain's Trust, conducted an online survey of parents, carers, guardians, grandparents, friends and relatives of under-sevens, which found that the results found that the majority of parents who responded were unaware of the potential for an accident involving their children and a car at home. Parents and carers do not think an accident will happen to their family, unless they know someone who has already experienced one, meaning they do not take simple precautions. For example:

- 59% could recall a time when their child had followed them out of the house on to the driveway without them realising
- 22% had started to manoeuvre a vehicle on the driveway and realised their child was close to the car when they thought they were elsewhere
- 95% reported temporarily leaving their children unattended in the car on the driveway while they "dashed back into the house" for something
- 42% said their children had picked up the family car keys without being seen to do so.
- 68% believed it was unlikely that their child would ever be injured by a vehicle entering or leaving their driveway
- 83% believed it was unlikely their child would ever be injured by a vehicle parked on their driveway
- 63% sometimes left children inside the car while they made a quick call to somewhere like a shop or school.

RoSPA and Iain's Trust offer parents and carers the following advice:

- Never leave children alone in a car
- Make absolutely sure there are no children in the driveway or road before moving your car
- Always keep your car locked when parking outside your house
- Discourage children from playing in the driving seat – a car is not a toy
- Always keep your car keys in a safe place – consider fitting a keybox with a combination lock
- Check if your car has a feature to prevent accidental starting and look for this when you replace your car

Given the cases in which children have managed to start unattended cars, sometimes with disastrous consequences, Iain's Trust has campaigned for safety measures to prevent cars being started by children, a measure supported by RoSPA.

In 2009, car manufacturers agreed to put a secondary safety feature on all new models with push-button starts, so cars designed from then will require the clutch or brake to be depressed before the car will start. However, there are thousands of older cars (with manual transmission) which can be started with a simple turn of a key or push of a button – mere child's play!

APPENDIX ONE

Children In and Around Cars Survey

Every parent knows that it is impossible to keep an eye on young children every second of the day. Youngsters want to explore and try things out, without understanding potential dangers. Sadly, there have been tragic incidents on the driveways of residential properties and when children have been left alone in cars.

RoSPA has produced a short online survey to gather information about these types of incident. *Please only complete this survey if you are a parent/guardian or grandparent of UK resident children aged 7 years or under.* If you know someone who may be interested in the survey please make them aware of the web page. All information provided will be completely anonymous.

The questionnaire should take no more than 10 minutes to complete, and will assist us to develop the best advice to help parents and carers keep their young children safe.

Do not worry if the question numbering appears out of order as there are follow-on questions for some responses.

The survey will remain open until December 18th 2009 with an interim report published August 31st 2010. Please check back on this site for the results.

Thank you for taking the time to complete the survey, your responses are greatly appreciated.

Children In and Around Cars Survey

Section One:

Question 1

Can you remember a time when your child has followed you or your partner out of the house onto the driveway without you or your partner realising until afterwards?

Yes No

Question 2

Have you or your partner ever started to manoeuvre a vehicle on the driveway and realised your child was close to the car when you thought that they were elsewhere?

Yes No

Question 3

Have you or your partner ever got into a vehicle on the driveway/outside your home with your child(ren) and maybe realising you had forgotten something, dashed back into the house leaving your child(ren) in the vehicle?

Yes No

Question 4

Can you recall a time when your child has been in a parked vehicle on the driveway/outside your home and accidentally released the handbrake?

Yes No

Question 5

Has your child ever run across your driveway to retrieve a toy whilst a motor vehicle has been manoeuvring on the drive?

Yes No

Question 6

Has there ever been an occasion where you or your partner have driven somewhere with your child in the rear of the vehicle and temporarily forgotten that they were in the back seat after arriving at your destination?

Yes No

Question 7

When out driving with your child(ren) in the car do you sometimes let them stay in their seats whilst you quickly call into a shop or an older sibling's school for example?

Yes No

Section Two:

Question 8

If you park your car on your driveway please state how often you do the following, with 1 meaning Never and 5 meaning Always.

Reverse onto your drive so that you drive forwards when next pulling off the driveway

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

Drive forwards onto your drive so that you reverse out of the driveway when next leaving

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

Turn your steering wheel when you are parked in order to activate the steering lock

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

Lock your car doors before going into the house

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

Question 9

At home where do you typically leave your car/vehicle keys?

Question 10

Has your child ever picked up your/your partners car keys without you/your partner seeing them do so at the time?

Yes No

Question 11

If Yes



Has your child ever then used the keys to get inside a vehicle parked at home?

Yes No

Section Three:

Question 12

Has your child ever been injured by a motor vehicle on yours or a neighbours' or friend's driveway?

Yes No

If Yes



Question 13

Was the vehicle being driven at the time?

Yes No

If No



Go straight to box at end of section

If Yes



Question 14

Who was the driver of the vehicle?

<input type="checkbox"/>	Father of the child
<input type="checkbox"/>	Mother of the child
<input type="checkbox"/>	Child minder
<input type="checkbox"/>	Sibling with a full driving licence
<input type="checkbox"/>	Sibling without a full driving licence
<input type="checkbox"/>	Other Family Member
<input type="checkbox"/>	Friend
<input type="checkbox"/>	Neighbour
<input type="checkbox"/>	Visitor to the house

Question 15

Was the vehicle moving forwards at the time of the incident?

Yes No

Question 16

Was the vehicle moving in reverse at the time of the incident?

Yes No

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Question 17

What type of vehicle was it?

	Car
	Van
	4 Wheel Drive
	Multi Purpose Vehicle (MPV)
	Lights Good Vehicle

Question 18

How old was the child at the time of the incident?

Years Months

This is entirely optional and we realise that it may be very upsetting for you to complete but if you wish to tell us more about the incident then please do so here in your own words.

If you want to speak to someone about what happened, the organisation RoadPeace has a confidential helpline providing emotional and practical support:
Tel: 0845 4500 355 (local rate) Email: helpline@roadpeace.org

IF ANSWERED NO TO Q.1 SECTION THREE



Section Four:

Question 19

How likely do you think it is that your child will ever be injured by a vehicle entering or leaving your driveway?

Very Likely	Likely	Not Sure	Unlikely	Very Unlikely
1	2	3	4	5

Question 20

How likely do you think it is that your child will ever be injured by a vehicle whilst it is parked on your driveway?

Very Likely	Likely	Not Sure	Unlikely	Very Unlikely
1	2	3	4	5

Question 21

When was the last time that you or your partner spoke to your child about playing near parked cars?

	Within the last month		More than 12 months ago
	Within the last three months		Never
	Within the last six months		Can't Remember
	Within the last 12 months		

Question 22

When was the last time that you and your partner spoke to each other about the possibility of your child(ren) getting hold of your car keys?

	Within the last month		More than 12 months ago
	Within the last three months		Never
	Within the last six months		Can't Remember
	Within the last 12 months		

Question 23

Have you heard of any cases where a child under the age of 7 has been injured in an accident involving a motor vehicle whilst on a residential driveway?

Yes No

(If Yes - Please could you briefly describe the case(s) and how you heard about it – open text field)