

## Child Road Safety in Great Britain, 2010-2014

**Bhavin Makwana – March 2016**

### Summary

This short report looks at child road casualties in Great Britain between 2010 and 2014. It looks at how children travel, the geographical distribution of child casualties and how the time of day, a child's age, gender, travel mode and the socio-demographic background of the community impact on child road casualties.

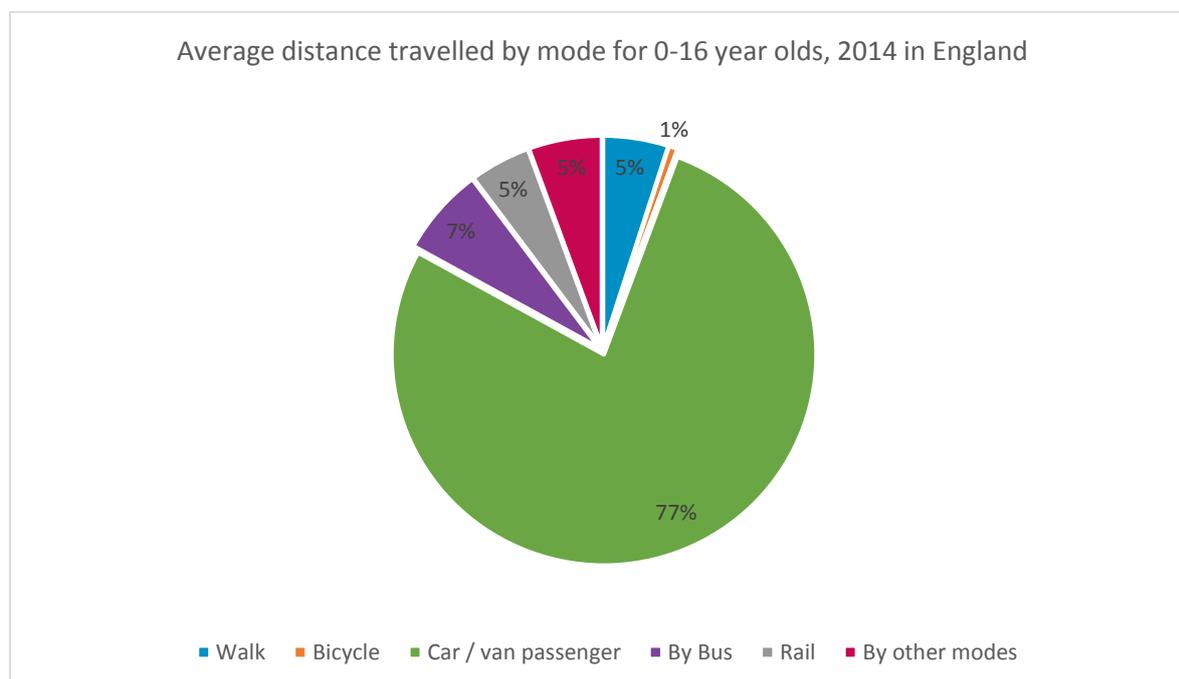
In 2014, there were 16,727 casualties aged 15 and under, of which 2,082 were fatal or serious. This accounted for almost 1 in 11 of all casualties and 1 in 12 deaths and serious injuries on the road. Until an increase in 2014, child casualties had fallen year-on-year since 1997 (DfT, 2014).

There are large geographic and gender differences in the rate of child casualties – rates were highest in urban areas and there appears to be a north-south divide in England when analysing road casualty data; and boys were at higher risk of being hurt than girls throughout childhood and across all modes of transport. Cycling casualties were notably higher for boys than girls. When exposure was taken into account, there remained a higher risk for boys than girls when cycling on the road. Casualty numbers peaked for boys and girls at age 12, with pedestrian casualties highest for both genders between ages 11 and 12 – the ages at which children transition from primary to secondary schools, often gaining more independence and taking part in more unsupervised travel. The casualty numbers peaked in the hour before school begins and after school ends. Furthermore, children were more likely to be hurt on roads if they lived in less affluent urban areas, and were least likely to be hurt on the road if they came from higher income rural or suburban communities.

## How do children travel?

The latest National Travel Survey statistics (which switched to only survey households in England rather than Great Britain from 2013) were used in the following analysis as an indication of British child travel patterns. In England, children under the age of 16 travelled 77% of their journey distance as a car or van passenger, 7% of their average distance was by bus and only 6% of children's journey distance was by walking and cycling (Figure 1). Older age groups followed a similar pattern, although walking or cycling was less frequent and travel by car or van as a driver or passenger was more common.

**Figure 1: Average distance travelled by mode for 0-16 year olds, 2014 in England.**



Source: NTS (2014a).

The average distance travelled per annum (miles per person) by all modes of transport decreased by 11% between 2002 and 2014 for the 0-16 age group in England (NTS, 2014a). Figure 2 shows, for the 0-16 age group, that between 2002 and 2004 in England the average travel distance as a car/van passenger and as a pedestrian declined by 12% and 9% respectively.

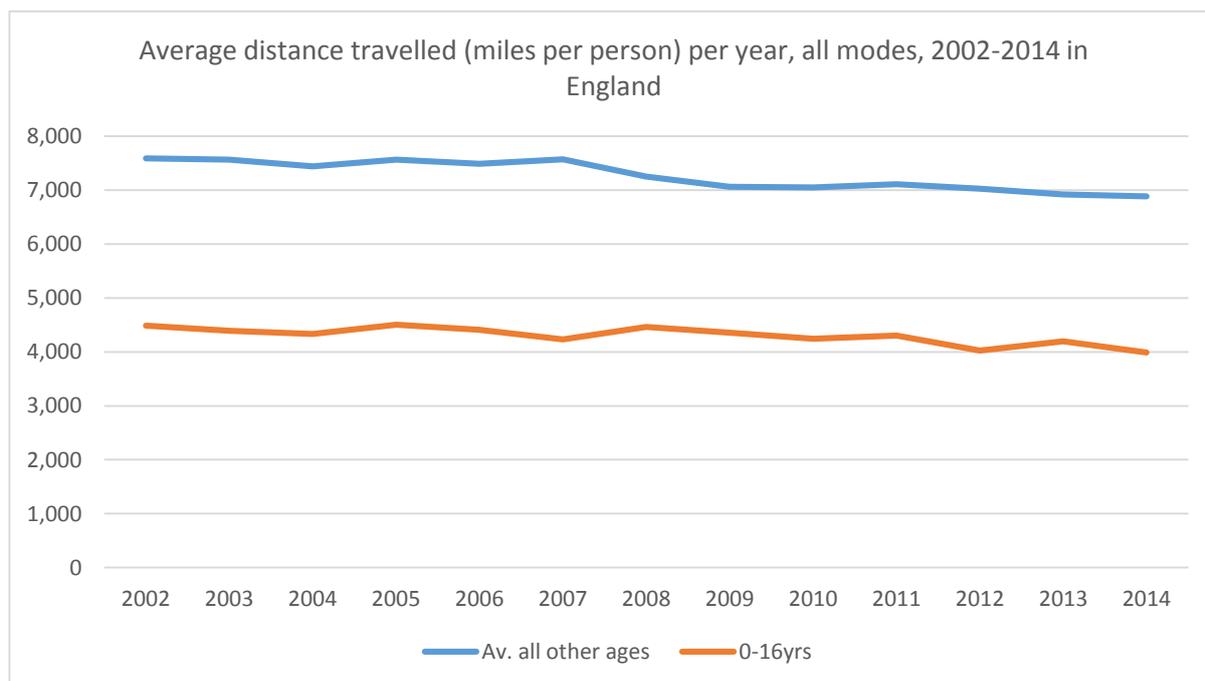
**Figure 2: Average distance (miles per person) travelled by walking and as a car/van passenger for 0-16 year olds, 2002-2014 in England**



Source: NTS (2014a).

Between 2002 and 2014 the average distance travelled (miles per person) by 0-16 year olds reduced by 11%, which is in line with how average distance travelled has changed across all age groups (Figure 3). In 2014, 0-16 year olds travelled 42% less in terms of average distance (miles per person) than the average distance of all other age groups.

**Figure 3: Average distance travelled (miles per person) per year, all modes, 2002-2014 in England**

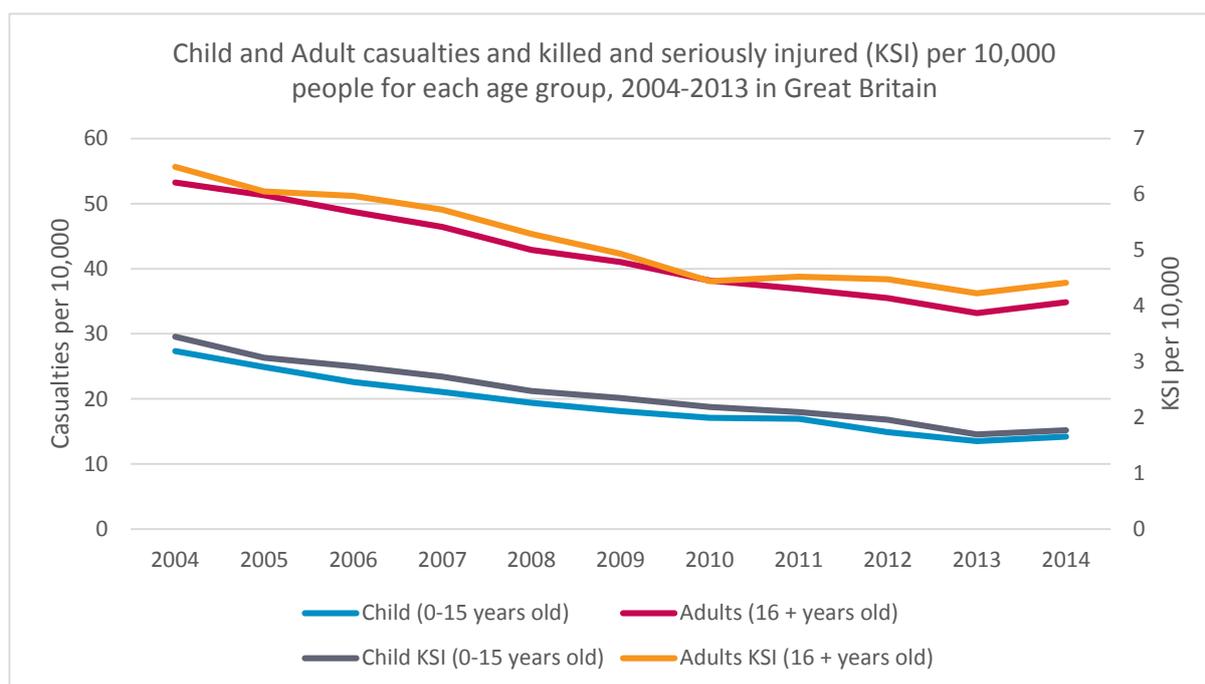


Source: NTS (2014a).

## How many child casualties occur on the road?

There has been an overall decline in all child and adult casualties per capita between 2004 and 2014. From 2004 to 2010 child casualties per capita declined 37%, while adult casualties per capita fell by 28% (Figure 4). After 2010 the rate of decline in casualties per capita slowed with child casualties falling 17% and adult casualties declining by 9%.

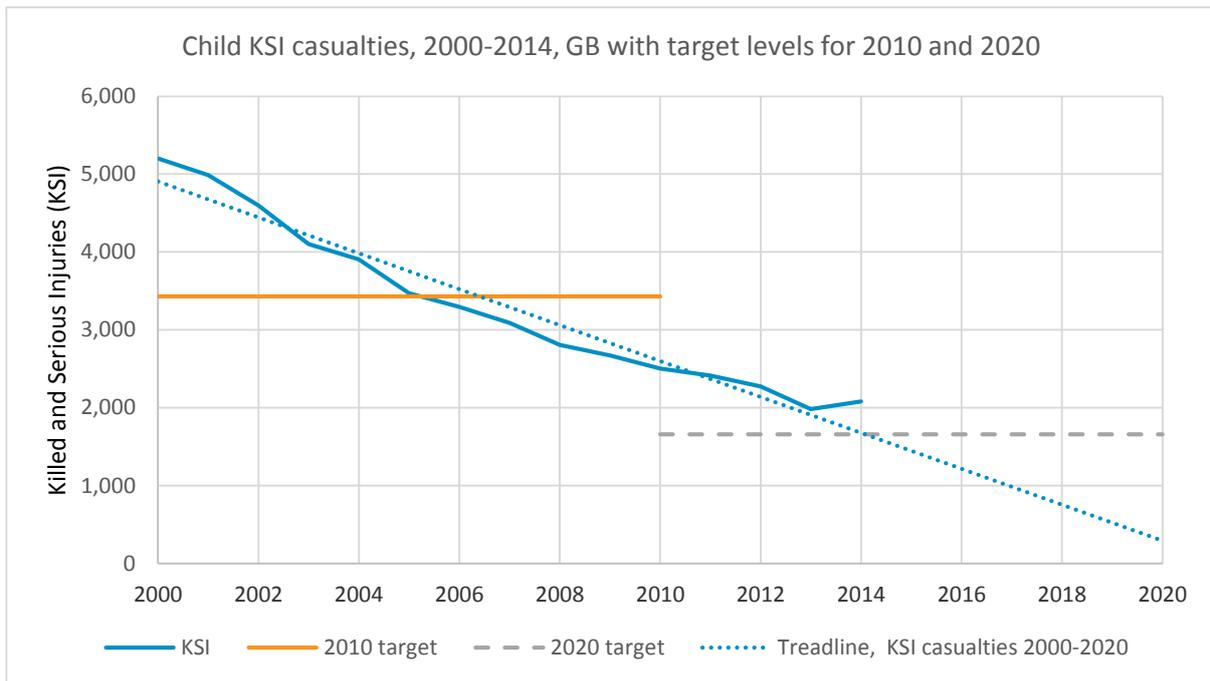
**Figure 4: Child and Adult casualties and killed and seriously injures (KSI) per 10,000 people for each age group, 2004-2014 in Great Britain**



Source: Mast Online (2015).

In 2000, the UK Government published their Road Safety Strategy, *Tomorrow's Roads – Safer for Everyone* (DfT, 2002). This strategy included the target to reduce child KSI casualties by 50% compared with the 1994-1998 average KSI casualty level to be achieved by 2010. Figure 5 shows that this target (orange line) was achieved and surpassed. If the Government were to set a new target of a further 50% reduction in child KSI casualties, as per the method used in 2000, the new target for 2020 would be a 50% reduction compared to the 2004-2008 child KSI casualty level (grey dotted line). Figure 5 indicates that if the trend in KSI reduction continues as it has since 2000 (blue dotted line), this target could also be achieved. However, it is yet to be seen if the rise in child casualties in 2014 is part of a new trend or a blip on the long term trajectory.

**Figure 5: Child killed and seriously injured (KSI) casualties in Great Britain, 2000-2014 with target levels for 2010 (50% reduction of the 1994-1998 average child KSI casualties) and 2020 (50% reduction of the 2004-2008 average child KSI casualties).**

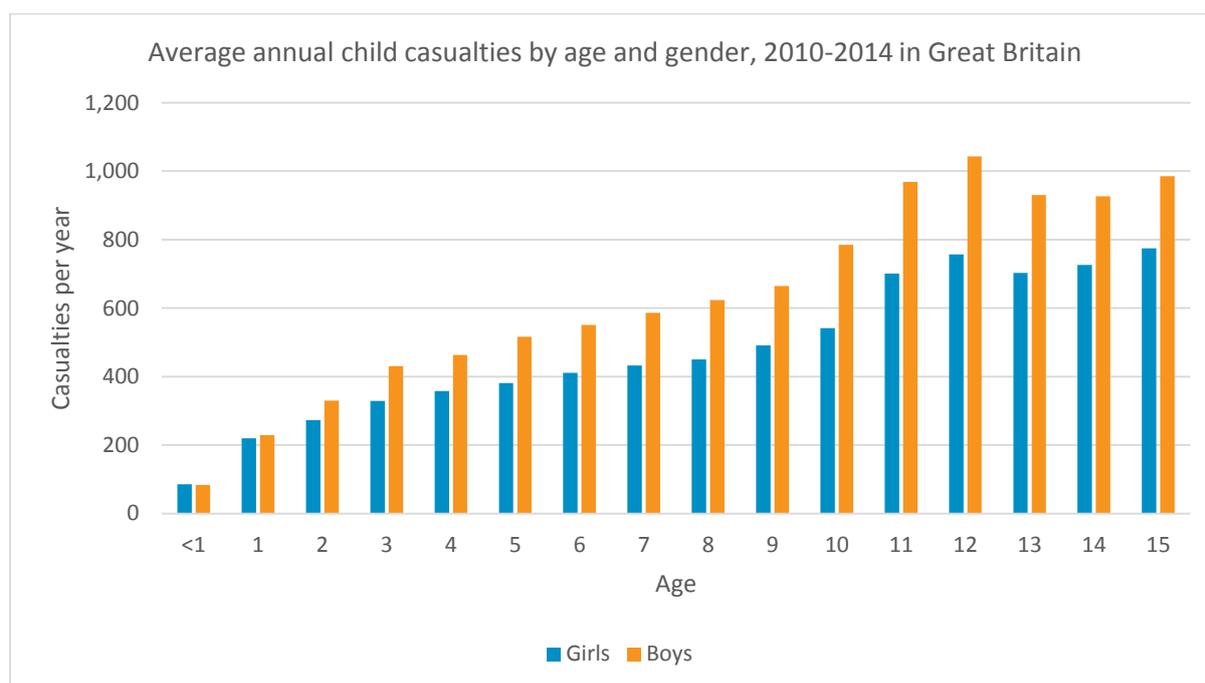


Source: DfT (2002) and DfT (2014).

## How do child casualties differ by age, gender, time of day and day of week?

Child casualties increased as age increased (Figure 6). This is likely to be due to the increased exposure as a child gets older. While the difference in the boy and girl casualties below the age of 2 was small, the differences become clearer from the age of 2 onwards. An increased difference in male and female casualties can be seen between 10 and 13 years of age, with a noticeable peak for both genders at 12 years old. Boy casualties were 33% higher than girl casualties on British roads across all age groups, with male child casualties accounting for 57% of all child casualties.

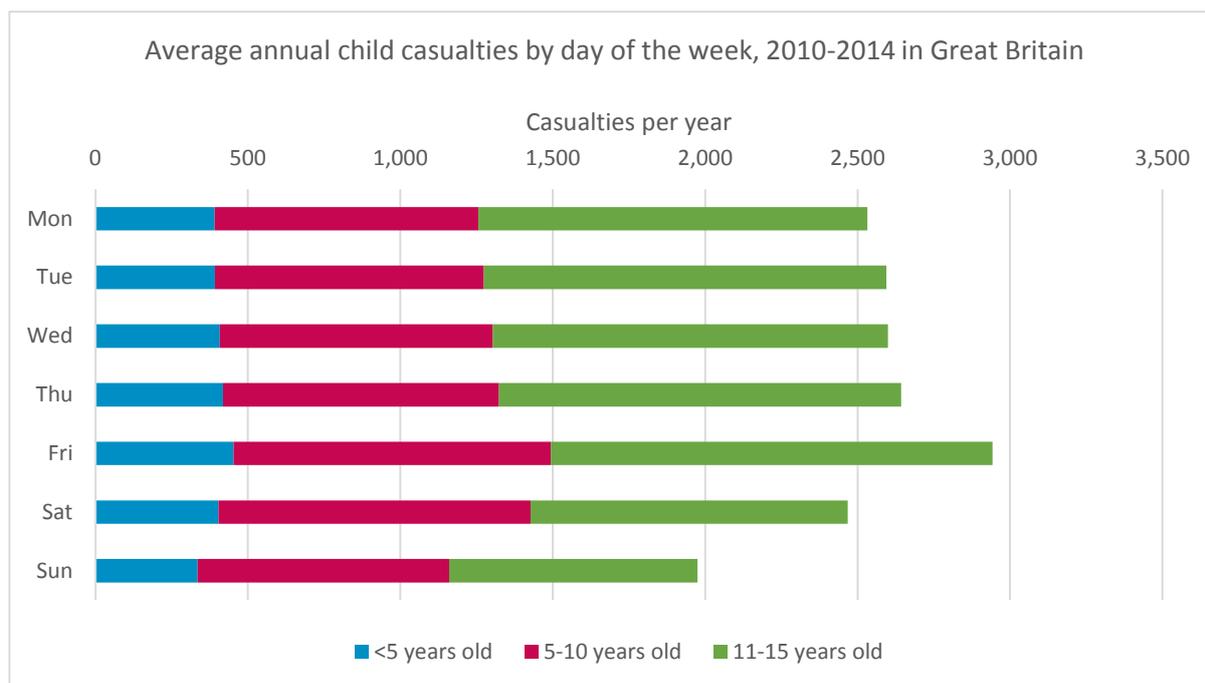
**Figure 6: Average annual child casualties by age and gender, 2010-2014 in Great Britain**



Source: Mast Online (2015).

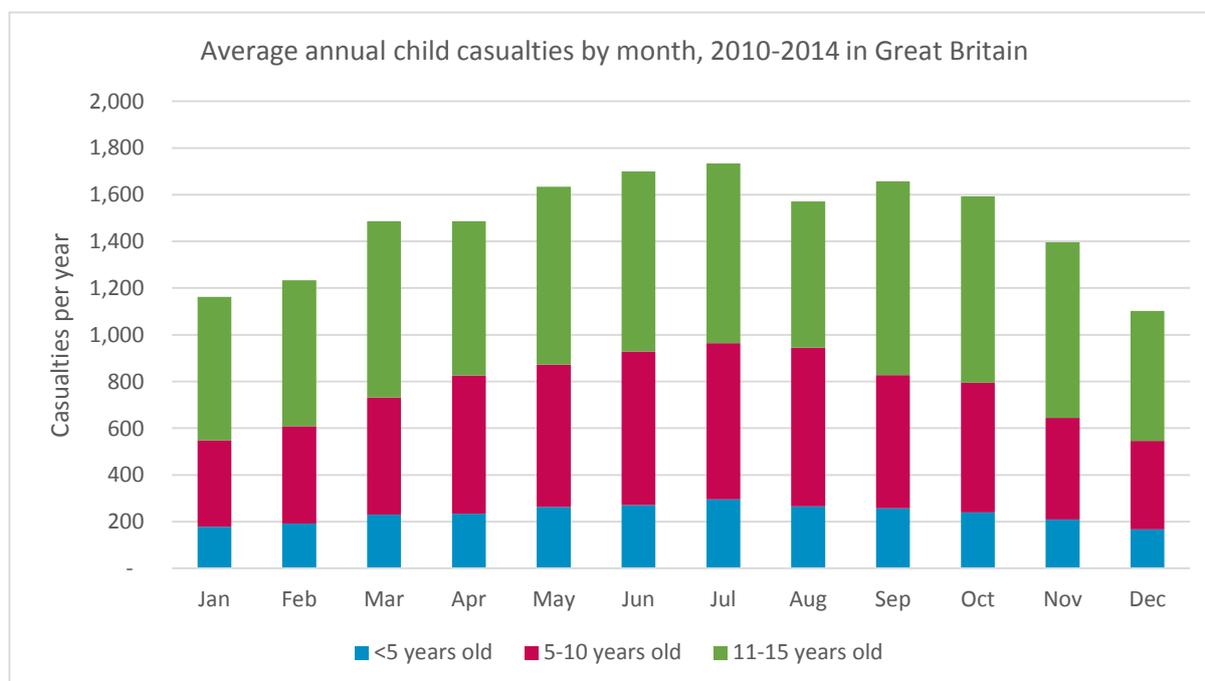
Child casualties were highest on Fridays and lowest at the weekend, which may in part reflect levels of parental supervision across the week (Figure 7). The months with the highest number of child casualties were July, June, September and May respectively (Figure 8). The increase in child casualties between August and September for the 11-15 year age group may be linked to increased independent travel for the children transitioning from primary to secondary school. Child casualty numbers were highest for children aged above 11 years old for all but one month (August) and all but one day of the week (Sunday). Casualties were highest for 5-10 year olds in the month of August and on Sundays (Figures 7 and 8).

**Figure 7: Average annual child casualties by day of the week, 2009-2013 in Great Britain.**



Source: MAST Online (2015).

**Figure 8: All child casualties by month, 2010-2014 in Great Britain.**

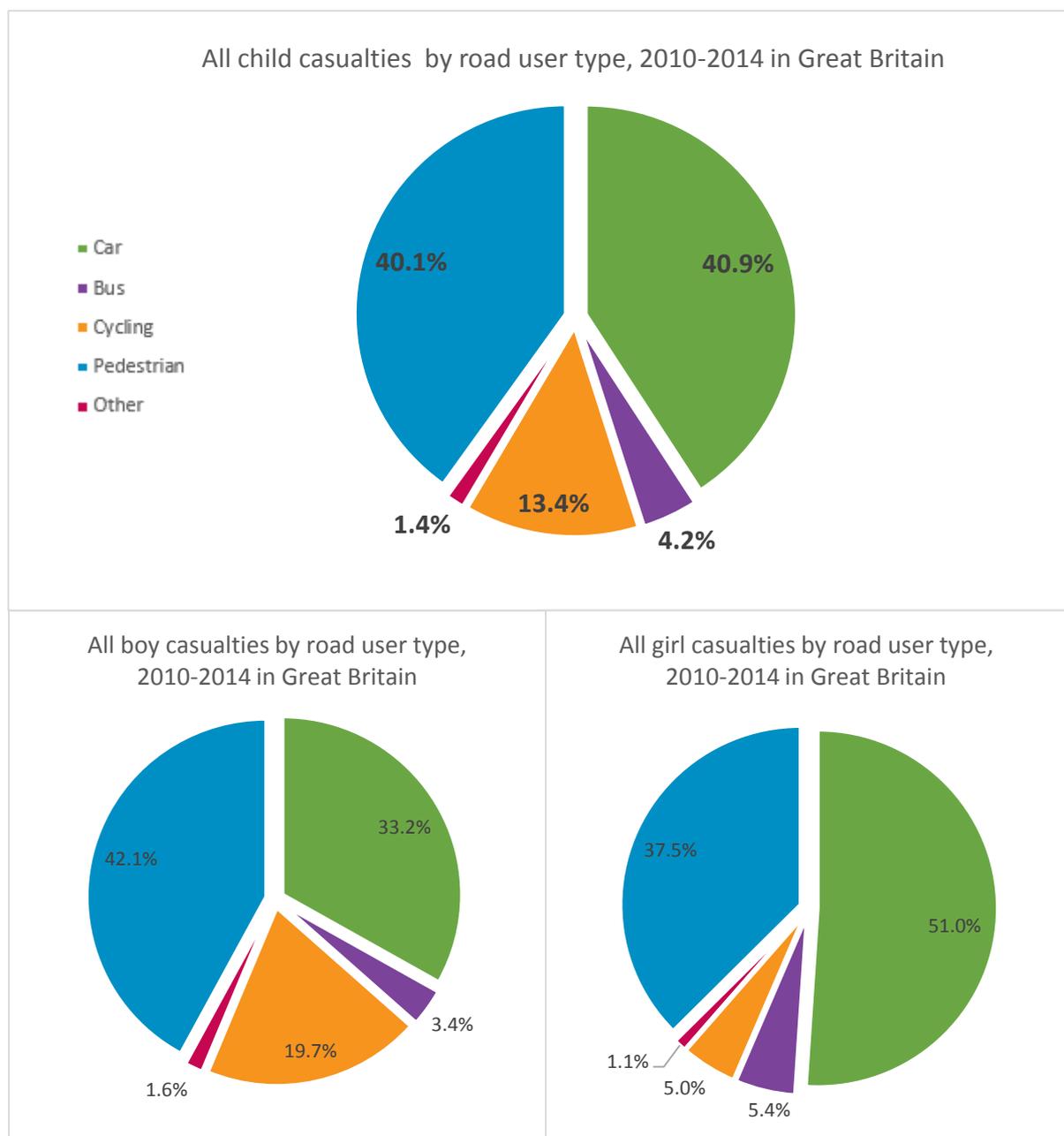


Source: MAST Online (2015).

## How do child casualties differ by road user type?

81% of all child casualties occurred when children were in cars or when walking (See Figure 9). For boys this fell to 75.3%, while for girls these two travel modes accounted for 88.5% of casualties. There were differences in how boys and girls below the age of 15 were hurt on British roads. Boys were much more likely to be hurt cycling than girls, with cycling accounting for 19.7% and 5% of casualties respectively. This may be partly explained by the fact that boys in England tended to take approximately 3.5 times as many trips by bicycle per year than girls between the age of 5 and 16 (NTS, 2014b). 51% of female child casualties occurred when they were in cars compared to 33.2% of male child casualties.

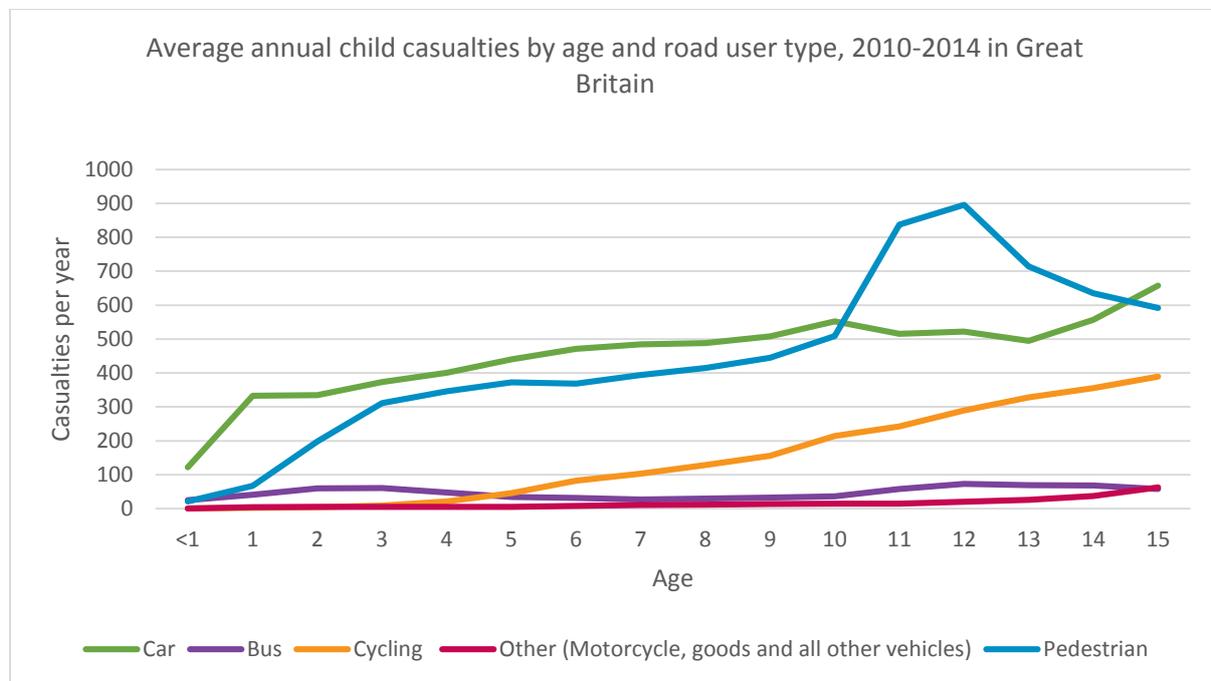
**Figure 9: All child casualties by road user type, 2010-2014 in Great Britain.**



Source: MAST Online (2015).

The number of child casualties increased with age for car, pedestrian and cycling transport modes (Figure 10). Car and pedestrian casualties were at a similar levels until age 10, after which pedestrian casualties became greater than in-car casualties until age 15. Cycling casualties increased from age 4 onwards.

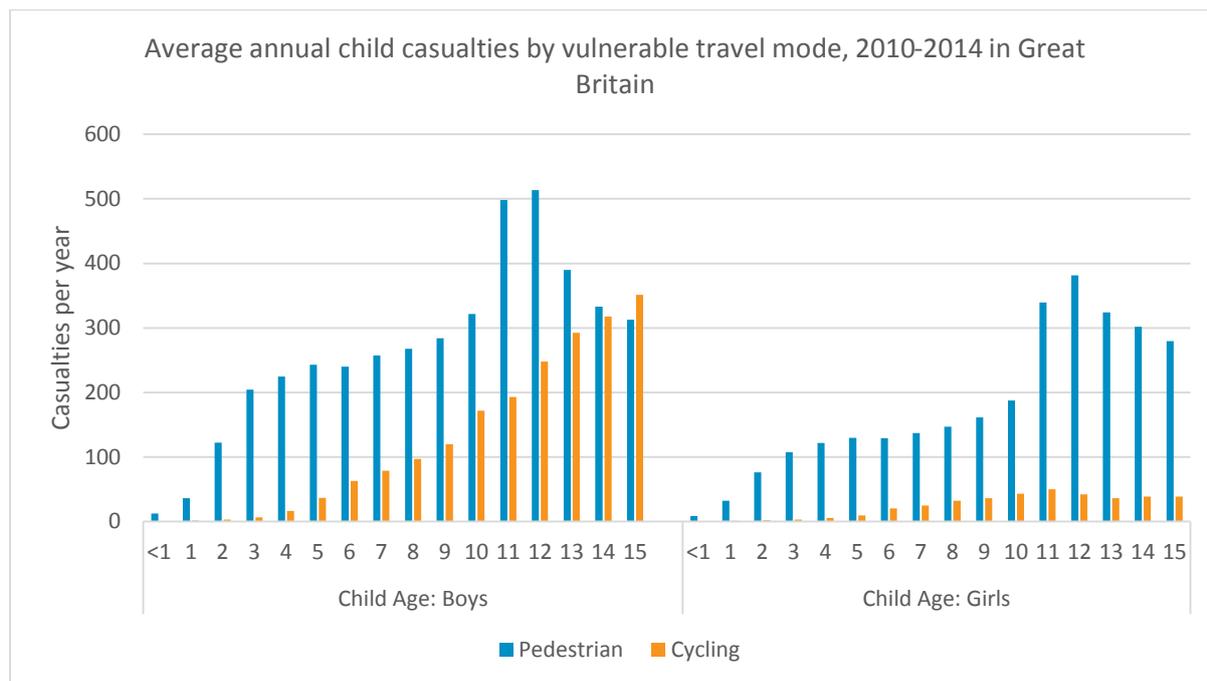
**Figure 10: Average annual child casualties by age and road user type, 2010-2014 in Great Britain.**



Source: MAST Online (2015).

Male child casualties for cycling and as pedestrians were higher across all ages (Figure 11). Young male pedestrian casualties were 1.5 times higher than female, however boys and girls under the age of 16 tended to travel similar average distances (miles per person) when walking per year (NTS, 2014a). Between the ages of 5-10, boys took approximately 2.5 times more trips per year by bicycle than girls in England (NTS, 2014b). For this age group, male child cycling casualties were almost 3.5 times greater than female child cycling casualties in Great Britain. Furthermore, for the ages of 11-16, boys took 4 times as many trips per year on a bicycle than girls the same age yet boy casualties between 11 and 15 were almost 7 greater than girl casualties for the same age group. There seems to have been a higher risk for boys when exposure is taken into account both for walking and when using a bicycle.

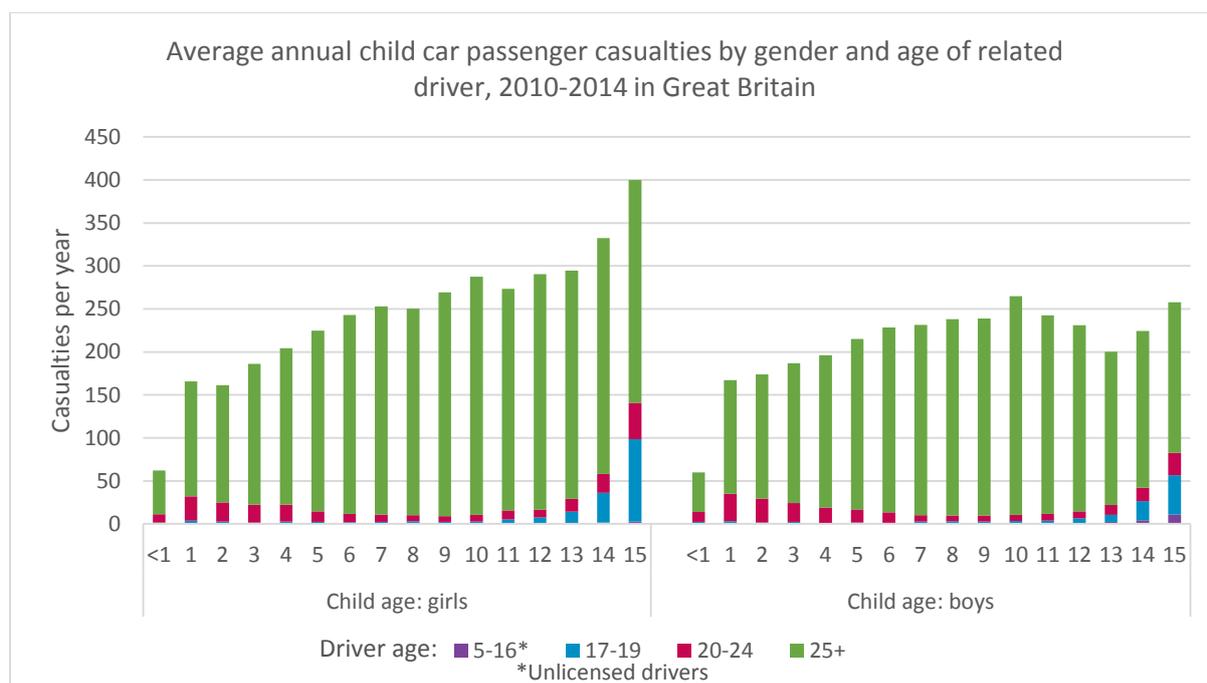
**Figure 11: Average annual child casualties by vulnerable travel mode, 2010-2014 in Great Britain**



Source: MAST online (2015)

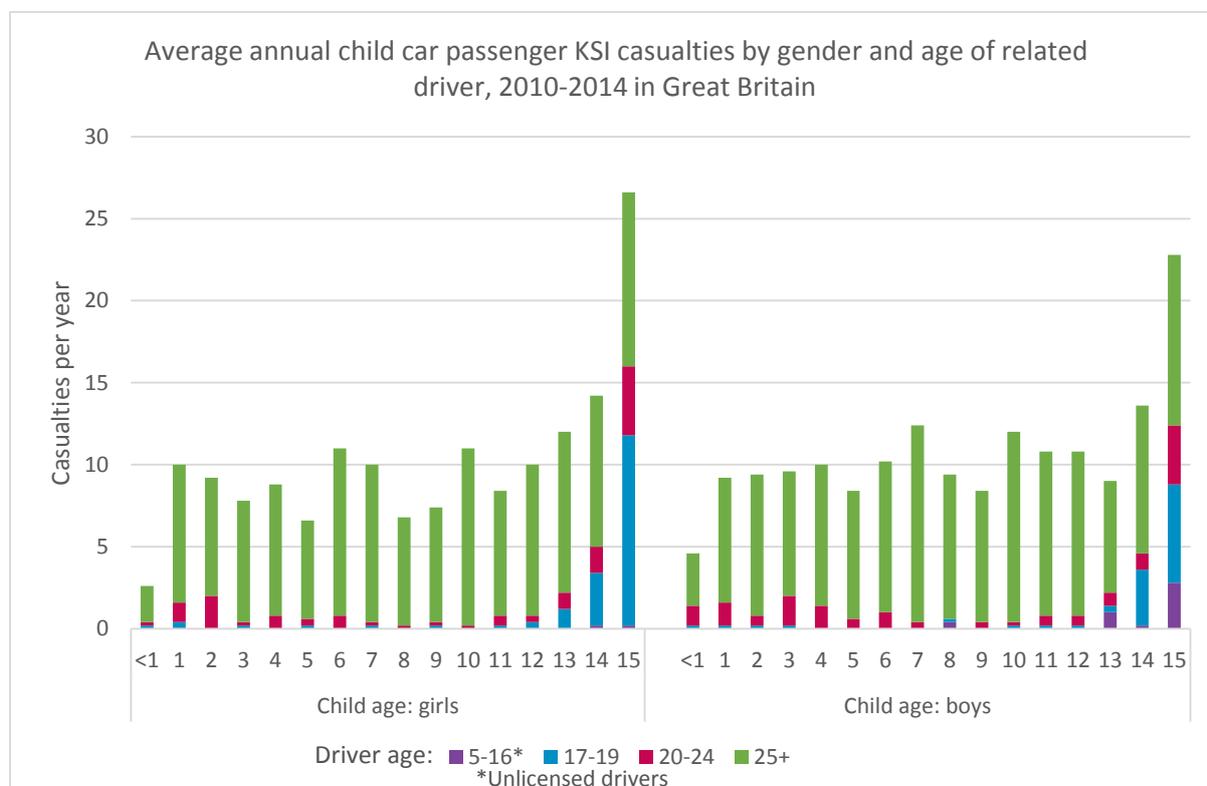
Cars driven by 17-19 year olds accounted for almost one third of all fatal and serious injuries for young teenage (13-15 years old) passengers (Figure 13). On average, there were 4 girl and 2 boy car passenger casualties per week in cars driven by teenagers (17-19 years old). When the driver was aged between 17 and 19, female car passenger casualties increased by a factor of 37 between the ages of 10 and 15 while male car passenger casualties increased by a factor of 14 between the same ages (Figure 12). This suggests that children above the age of 10, particularly young girls, were disproportionately likely to be injured in cars driven by teenage drivers.

**Figure 12: Average annual child car passenger casualties by gender and age of related driver, 2010-2014 in Great Britain.**



Source: MAST Online (2015)

**Figure 13: Average annual child car passenger KSI casualties by gender and age of related driver, 2010-2014 in Great Britain.**

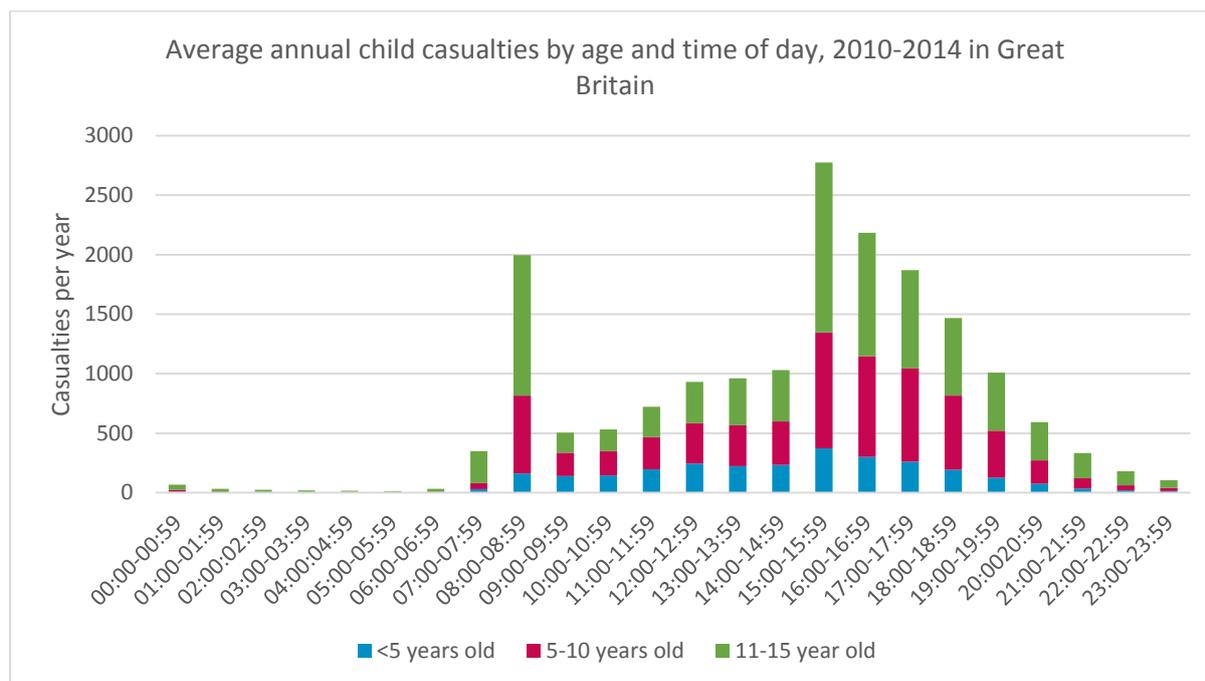


Source: MAST Online (2015).

## When do child casualties occur?

Child casualties occur most frequently between 3pm and 6pm, with those most likely to be injured between the ages of 11 and 15 accounting for almost a 50% share of child casualties during this period (Figure 14). In addition, child casualties were highest between 8am-9am and 3pm-4pm, with a peak occurring at 3pm-4pm. -quarters of all child casualties occurred during the week day (Figure 7) as such these morning and evening peaks correspond with children going to and from school.

**Figure 14: Average annual child casualties by age and time of day, 2010-2014 in Great Britain.**

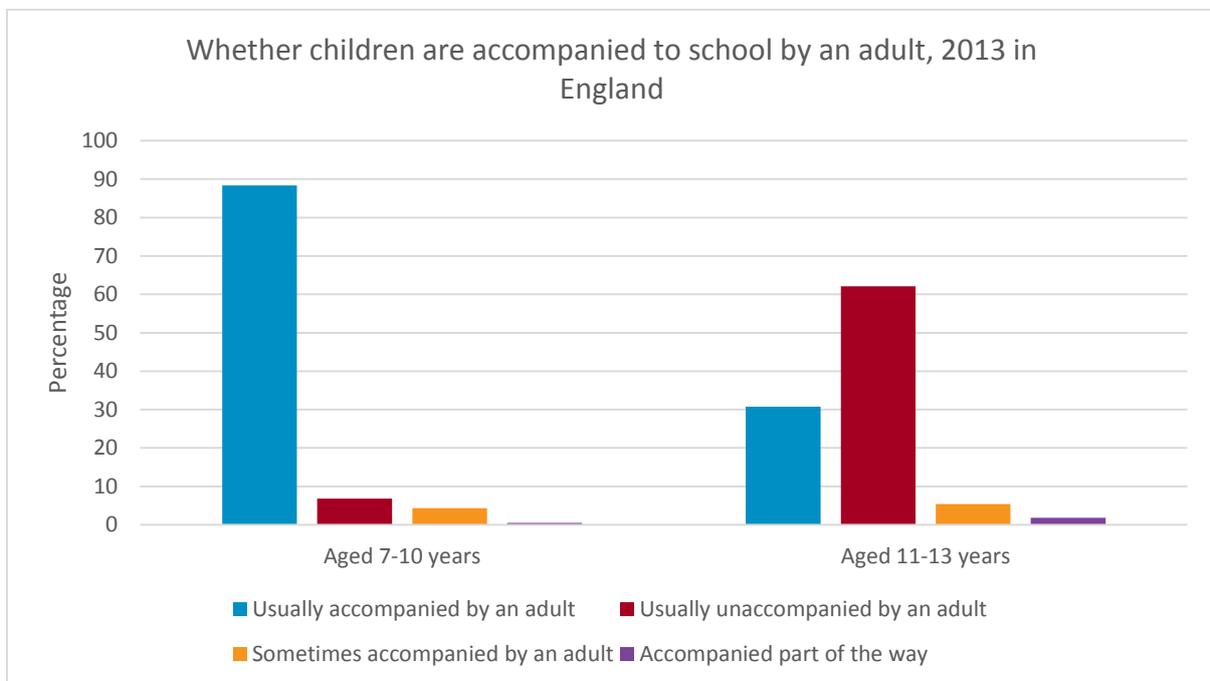


Source: MAST Online (2015).

## To what extent are children escorted to school?

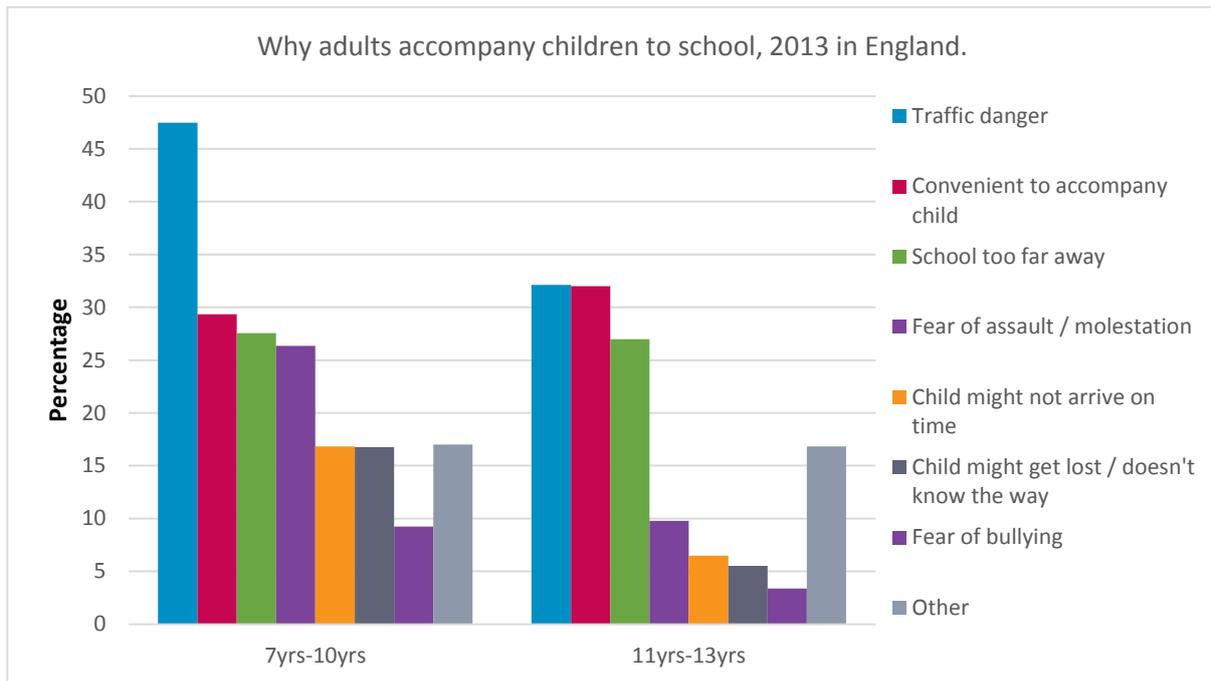
In 2013, 88% of children between the ages of 7 and 10 years were usually accompanied to school by an adult in England (Figure 15). This figure fell to just 31% for children between the ages of 11 and 13 years with 62% of children in this age group usually unaccompanied by an adult when traveling to school. When adults who accompany a child to school were asked why they do so, 43% of people indicated that traffic danger was a reason (NTS, 2013). 28% of people stated that they accompany children aged between 7 and 10 years is due to convenience as well as the fact that their school is too far away. Fear of assault was stated in 28% of responses for this age group but just 10% for children between 11-13 years old (Figure 16). This suggests that, whilst road safety remains the most important reason for why an adult accompanies a child to school, it actually becomes less important a reason when a child is aged between 11 and 13.

**Figure 15: Whether children (aged 7-10 years) are accompanied to school by an adult, 2013 in England.**



Source: NTS (2013)

**Figure 16: Why adults accompany children to school, 2013 in England.**



Source: NTS (2013)

## Where do child road casualties occur?

For all modes of transport child road casualty rates differ geographically. In England, there appears to be a north-south divide for where children are injured on the road. However, there are low levels of child casualties per capita in much of Scotland and child casualty rates vary geographically by mode of transport in Wales (see Figure 17 and Table 1). The highest average annual child casualty rate was in Blackpool (30.84 per 10,000 resident children) whilst this may be slightly inflated due to tourists, this is representative of a north-south divide in England. The lowest average annual child casualties were in the Shetland Islands (4.54 per 10,000 resident children) and much of West England (Figure 17 and Table 2).

Table 1 shows that only two out of the top ten Local Authorities for the highest average annual child casualties per 10,000 resident children were not in the north of England (Ceredigion and Boston). Conversely, Table 2 shows the 10 Local Authorities with the lowest average annual child casualties per 10,000 resident children, all of these Local Authorities are located in either Scotland or the south of England. A full list of average annual child casualties and average killed and seriously injured (KSI) per 10,000 resident children by Local Authority can be found in the appendix document.

Mosaic socio-demographic profiling (a geodemographic segmentation system for classifying UK households) shows that children were more likely to be injured on roads if they lived in low affluence urban areas. In addition, children were least likely to be injured on the road if they came from higher income rural communities – a trend reflected in Figure 17. The group with highest national risk for child casualties was Modest Traditions (group M) which had more than double the national risk for child road casualties. This group refers to children living in communities characterised by low income, urban locations and people living within their means often with little prospect of financial improvement. The groups with the lowest index values were all characterised by higher income levels and/or highly ambitious individuals in rural or semi-rural regions.

In-car child casualties were not localised to a few specific regions but were relatively high across much of Great Britain. The highest average annual road casualties rate was in East Lindsey with 17.88 per 10,000 resident children, the lowest average annual in-car child casualties was in Camden (1.40 per 10,000). Average annual pedestrian child road casualties were more geographically localised. The highest average annual pedestrian child casualties were located in north-east England and south-east England with pockets of high child casualties in mostly urban locations in south Wales and central Scotland. The highest pedestrian child casualties figure was for Hyndburn in north-west England (14.55 per 10,000 resident children). The lowest average annual pedestrian child casualties were in the Shetland Islands (0.91 per 10,000), Orkney Islands (1.12), South Cambridgeshire (1.61) and most of the south-east of England. Child cycling injuries were highest in the North West and the south coast of England. However, the largest average annual child casualties per 10,000 resident children was in Cambridge with a value of 7.04. The lowest average annual cycling child casualties were in the Shetland Islands (0.45 per 10,000), Torfaen (0.47) and Stroud (0.49).

**Table 1: Top ten Local Authorities for highest average annual child casualties per 10,000 resident children, 2010-2014 in Great Britain.**

Rank	Local Authority	Average annual child (0-15 years) casualties per 10,000 resident children	Average annual child (0-15) casualties
1	Blackpool	30.84	78.6
2	Hyndburn	29.83	49.2
3	Blackburn with Darwen	28.69	98.2
4	Burnley	28.66	49.6
5	North East Lincolnshire	28.30	85.8
6	East Lindsey	28.06	59.0
7	Boston	26.86	31.2
8	Ceredigion	26.80	29.8
9	Preston	26.78	72.2
10	Liverpool	26.63	209.4

Source: MAST Online (2015) and ONS population estimates (ONS, 2015)

**Table 2: Top ten Local Authorities for lowest average annual child casualties per 10,000 resident children, 2010-2014 in Great Britain.**

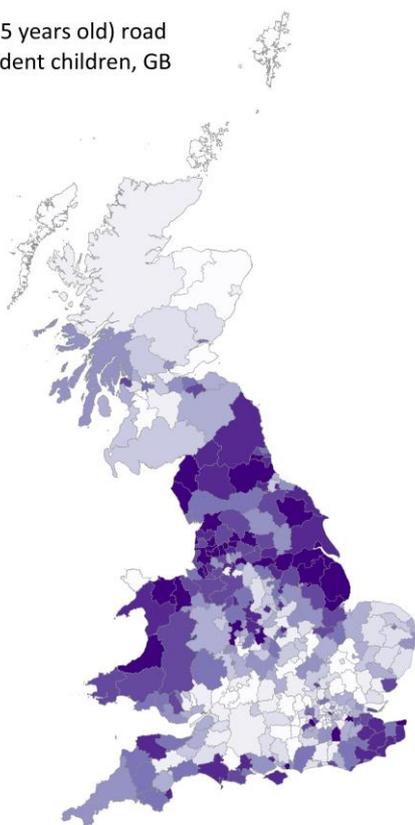
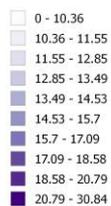
Rank	Local Authority	Average annual child (0-15 years) casualties per 10,000 resident children	Average annual child (0-15) casualties
378	Shetland Islands	4.54	2.0
377	Orkney Islands	5.60	2.0
376	Chiltern	7.04	13.4
375	East Dunbartonshire	7.46	13.8
374	Eilean Siar	7.89	3.6
373	East Renfrewshire	7.90	14.2
372	Cheltenham	8.27	16.4
371	Wokingham	8.37	26.8
370	Bracknell Forest	8.56	20.4
369	Forest of Dean	8.61	12.0

Source: MAST Online (2015) and ONS population estimates (ONS, 2015)

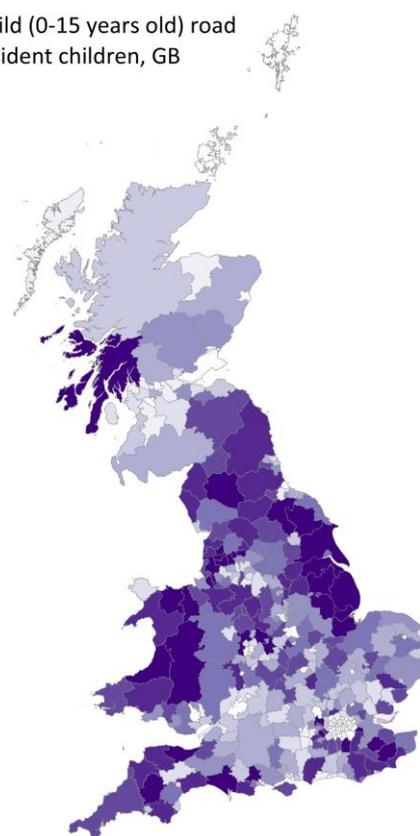
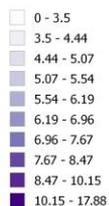
Note: Figures for Westminster and the City of London have been combined.

**Figure 17: Average annual child (0-15 years old) road casualties per 10,000 resident children in Great Britain, 2010-2014. Source: MAST Online (2015) and ONS population estimates (ONS, 2015)**

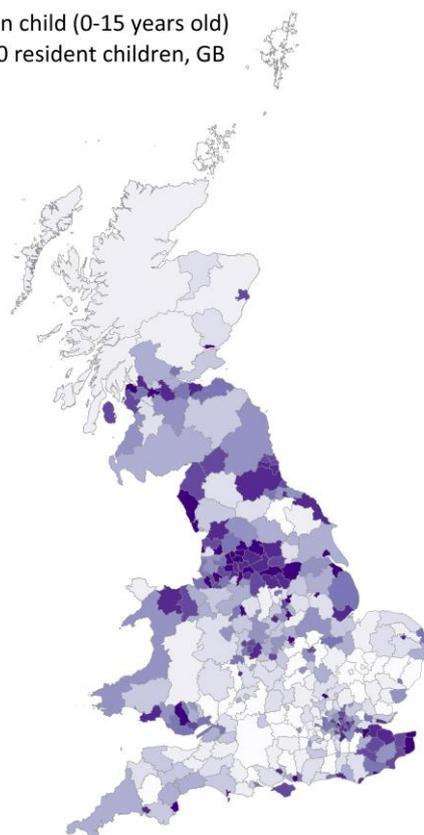
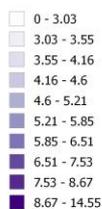
Average annual child (0-15 years old) road casualties per 10,000 resident children, GB 2010-2014



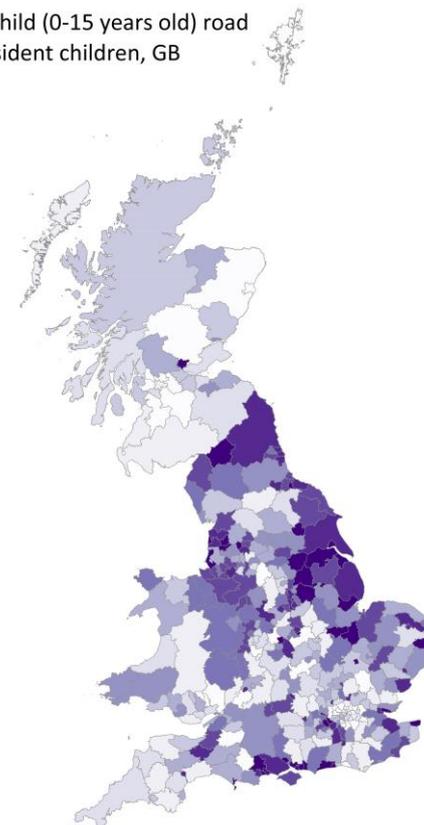
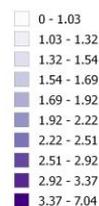
Average annual in car child (0-15 years old) road casualties per 10,000 resident children, GB 2010-2014



Average annual pedestrian child (0-15 years old) road casualties per 10,000 resident children, GB 2010-2014

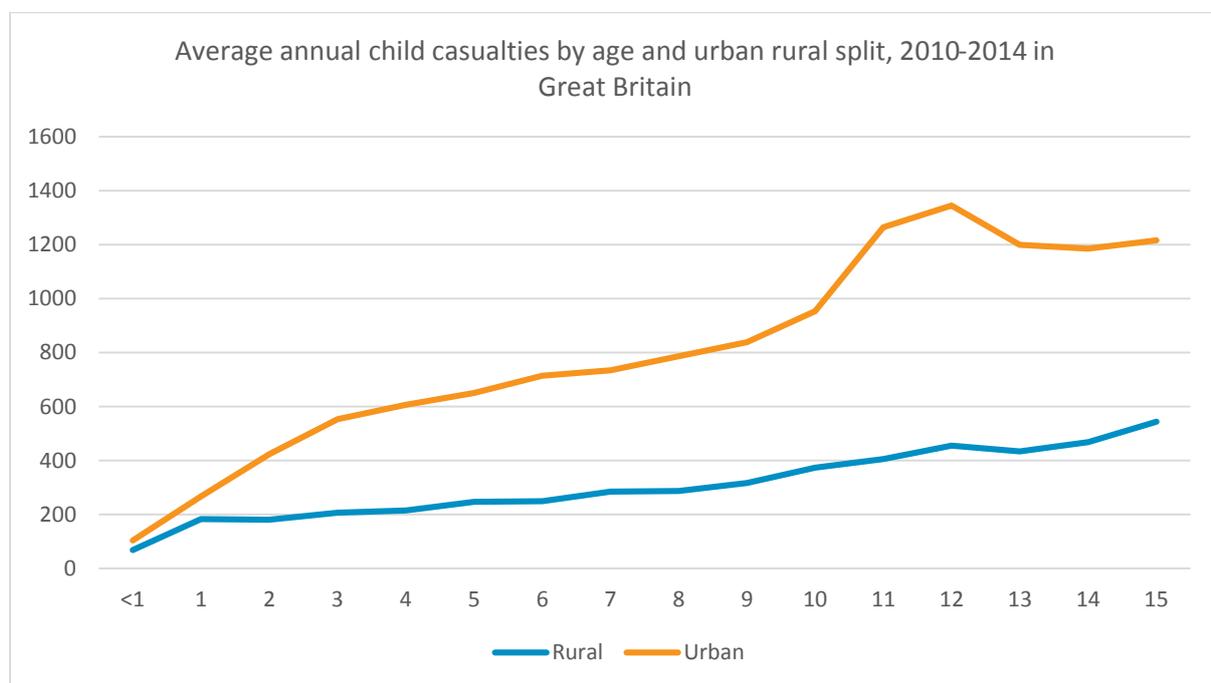


Average annual cycling child (0-15 years old) road casualties per 10,000 resident children, GB 2010-2014



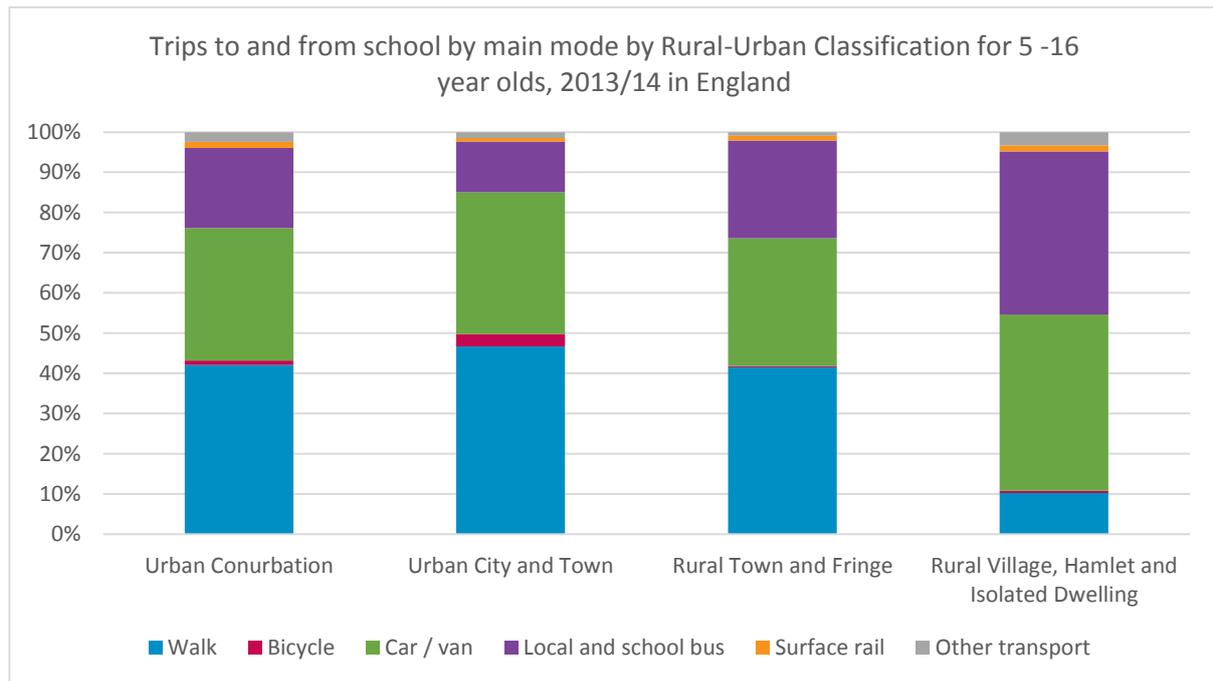
Child casualties increased as age increases for both rural and urban roads. However, there was a sharp increase in casualties at the age of 10 on urban roads with a peak at age 12. Figure 19 shows how children between the ages of 5-16 travelled to and from school in England. The difference in the urban and rural trend is likely due to a larger proportion of children walking and cycling to school in urban areas than in rural areas, while the peak between ages 11-13 may be reflective of a decrease in adult supervision for walking and cycling trips. In England, only 10% of children between the age of 5 and 16 walked to school in very rural locations compared to over 40% in urban conurbations. In the very rural areas, 85% of trips to and from school are by car, van or bus, in urban areas this is approximately 50%. Figure 10 shows children were more at risk as pedestrians after the age of 10 than when in a car or bus. For urban locations, the decline after aged 12 may represent a child's natural development and awareness of road safety, although casualty numbers remained at a higher level than at earlier ages. In rural areas, the number of casualties rose more quickly after the age of 13 than in urban areas.

**Figure 18: Average annual child casualties by age and urban rural split, 2010-2014 in Great Britain**



Source: MAST Online (2015).

**Figure 19: Trips to and from school by main mode and by rural-urban classification for 5-16 year olds. 2013/14 in England**



Source: NTS (2014c)

## References

DfT (2002). *Child Road Safety Achieving the 2010 Target*. An action plan prepared in consultation with the Child Road Safety Sub-group of the Road Safety Advisory Panel.

DfT (2014). *Reported Road Casualties Great Britain: 2014. Annual Report*. RAS30036: Casualties resulting from reported personal injury road accidents, by age and severity, Great Britain, 1979-2014. p167

MAST Online (2015). *Reported road casualties tool by Road Safety Analysis* Accessed September 2015 via <https://mast.roadsafetyanalysis.org/>

NTS (2013). *National Travel Survey 2013*. NTS0616: Whether children (aged 7-13) are accompanied to school by an adult and the reasons: England 2003-2013. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/456895/nts0616.xls](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/456895/nts0616.xls)

NTS (2014a). *National Travel Survey 2014*: NTS0605: Average distance travelled by age, gender and mode. England, 2014. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/457748/nts0605.xls](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/457748/nts0605.xls)

NTS (2014b). *National Travel Survey 2014*. NTS0609: Bicycle trips by age and gender: England, 2012/14. Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/456889/nts0609.xls](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/456889/nts0609.xls)

NTS (2014c) *National Travel Survey 2014*. NTS9908: Trips to and from school by main mode, region and Rural-Urban Classification: England, 2013/14/ Available online: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/457017/nts9908.xls](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/457017/nts9908.xls)

ONS (2015). *ONS Population estimates for the UK*. UK Population estimates for the UK by age can be found online at <http://www.ons.gov.uk/ons/taxonomy/index.html?nscl=Population+Estimates>