

Pedal cyclist casualties in reported road accidents: 2011

Road Accident Statistics Factsheet No. 2 – August 2012



Department for Transport

Introduction

This factsheet presents summary information relating to pedal cyclist casualties in reported road accidents¹; all figures relate to 2011 and Great Britain unless otherwise stated.

Overview – pedal cycle casualties in context

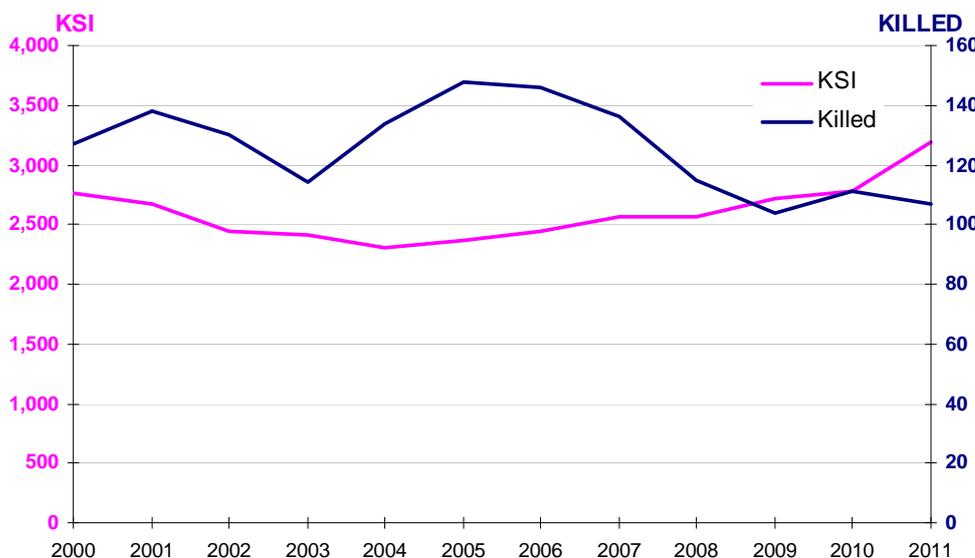
In 2011, there were 107 pedal cyclist fatalities and 3,085 reported seriously injured casualties with the number killed or seriously injured increasing in the last seven years.

Numbers: In Great Britain in 2011 there were a total of 151,474 reported personal injury road accidents. 19,645 of these – 13 per cent – involved at least one pedal cyclist, and in total:

- 107 cyclists were killed (6 per cent of total road accident fatalities in 2011)
- 3,085 were seriously injured (13 per cent of the total seriously injured)
- 16,023 were slightly injured (9 per cent of all slight injuries)

Trends: The number of cyclists killed or seriously injured (KSI) rose 15 per cent from 2,771 in 2010 to 3,192 in 2011, with a 4 per cent drop in deaths from 111 to 107 (see **chart 1**) – this compares with a 2 per cent rise in overall KSI casualties and a 3 per cent rise in overall road deaths.

Chart 1: Trend in reported fatal and KSI pedal cyclist casualties: GB 2000-2011



The number of pedal cyclist KSI casualties has increased every year for the last seven years. Although it is hard to create precise estimate of cycling traffic levels, evidence from the National Travel Survey suggests that pedal cycle traffic has increased significantly over recent years.

Compared with the 2005-09 average, the number of pedal cyclist KSI casualties in 2011 was 26 per cent higher – the single largest year on year increase since a rise of 480 casualties in 1982.

Compared with the same time period the number of pedal cyclist casualties

has increased by 17 per cent, but the number of fatalities has fallen by 18 per cent.

Casualty rates: Measured per kilometre of exposure, overall cycling is one of the riskiest forms of travel (see **table 1**). However, the risks to the individual are still very low. The *average* distance cycled in a year is around 79 km (NTS 2011) – however note that in table 1, casualty rates are calculated using overall traffic estimates.

Pedal cyclist casualty rates have fluctuated over recent years, with pedal cycle traffic increasing by 11 per cent compared with the 2005-09 average, and the pedal cyclist casualty rate up by 5 per cent – however the fatality rate has decreased by 26 per cent over the same period.

Table 1: Casualties per billion passenger kilometres: GB 2011

	Rate per billion passenger kilometres		
	Killed	KSI	All
Bus or coach	0	7	139
Car	1	14	195
Pedestrian	26	337	1,495
Pedal cycle	22	646	3,889
Motorcycle	72	1,119	4,019

¹ A considerable proportion of non-fatal accidents are not reported to the police. More information on this can be found in article 6 of Reported Road Casualties GB 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/9279/rcrgb2011-06.pdf. Under-reporting of pedal cyclists involved in accidents tends to be worse than for other road users.

Who are injured as pedal cyclists in road accidents?

Gender: The majority of cyclists reported killed or injured in road accidents are male – men accounted for 81 per cent of all pedal cyclist casualties, 82 per cent of KSI casualties and 79 per cent of fatalities in 2011 (for all road users, the equivalent figures are 59, 70 and 75 per cent respectively). To some extent this reflects the fact that males account for most distance cycled, and make more cycle trips – on average males make 23 trips per year compared to 8 made by females, and on average men cycle almost four times the distance women cycle in a year (NTS 2011).

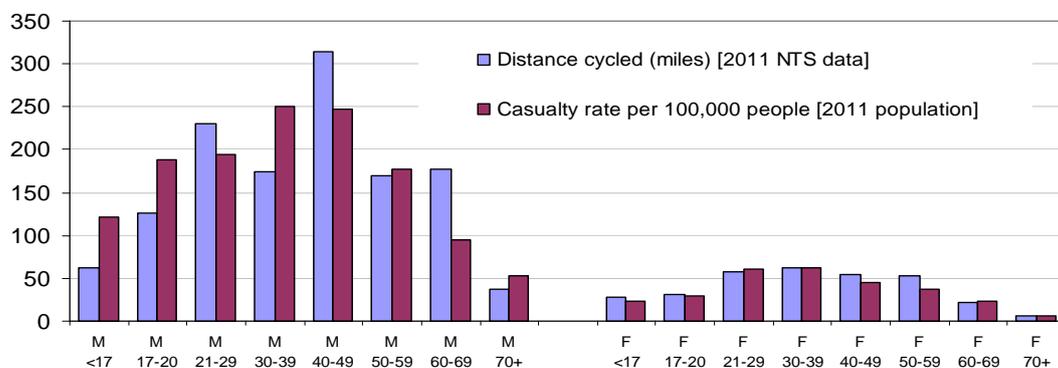
Age: Table 2 shows the breakdown of reported pedal cyclist casualties by severity and age group:

- Children (aged 0-15) account for 15 per cent of cyclist casualties, and 12 per cent of KSI casualties – but only 6 per cent of fatalities. One tenth (6 out of 60) children killed in road accidents in 2011 were pedal cyclists.
- Cyclist KSI casualty rates per million population are highest for 12-15 year olds. For this age group, more than 1 in every 5 casualties in a road accident is a pedal cyclist, as were almost one quarter of KSI casualties.

Table 2: Pedal cyclists casualties by age group and gender: GB 2011

	0-4	5-7	8-11	12-15	16-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	All ages
Number													
Killed	0	0	1	5	5	19	11	26	12	15	9	4	107
KSI	9	30	120	239	185	559	630	671	411	198	78	18	3,192
All severities	48	293	954	1,586	1,402	4,054	4,043	3,539	1,814	703	288	65	19,215
Rate per 1,000,000 population													
Killed	0	0	0.4	1.8	1.7	2.3	1.4	2.9	1.6	2.3	2.1	1.4	1.8
KSI	2	14	46	86	61	66	81	75	55	30	18	6	52
All severities	13	140	365	569	466	480	517	395	243	106	66	22	315
Percentage of total road casualties for particular age group:													
Killed	0%	0%	10%	16%	3%	5%	4%	9%	6%	10%	5%	2%	6%
KSI	3%	8%	17%	24%	7%	11%	18%	17%	15%	11%	6%	2%	13%
All severities	2%	9%	16%	21%	6%	8%	12%	11%	9%	6%	4%	1%	9%

Chart 2: Indexed reported pedal cycle KSI casualty rate and distance cycled by age group and gender: GB 2011

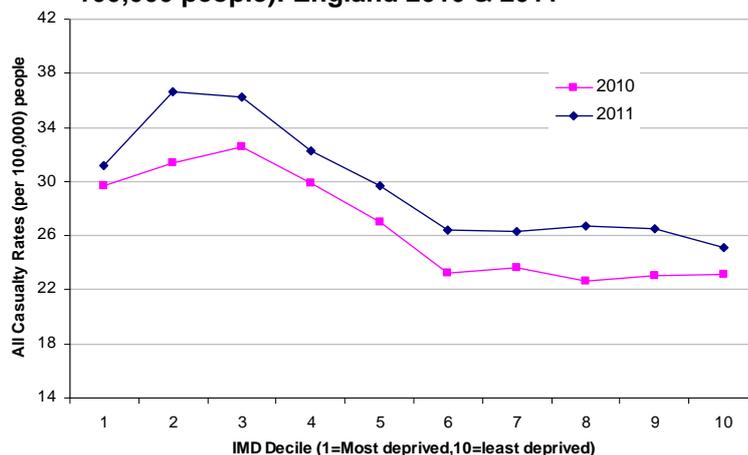


Compared with all casualties in road accidents, pedal cyclist casualties are more likely to be children (15 per cent compared with 10 per cent) and less likely to be aged 60 and over (5 per cent compared with 12 per cent).

Deprivation: Cyclist casualty rates are around 36 per 100,000 people in the most deprived areas in England, compared with 25 per 100,000 in the least deprived areas².

Chart 3 shows how the casualty rate varies by level of deprivation. The highest rates are in some of the areas with the lowest levels of deprivation – although not in the most deprived areas, possibly due to cost associated with cycling. Rates in each decile have increased since 2010, which reflects the increase in cycling traffic – the largest increases in rates occurred in the second most deprived decile and the second and third least deprived deciles.

Chart 3: Reported pedal cyclist casualty rates (per 100,000 people): England 2010 & 2011

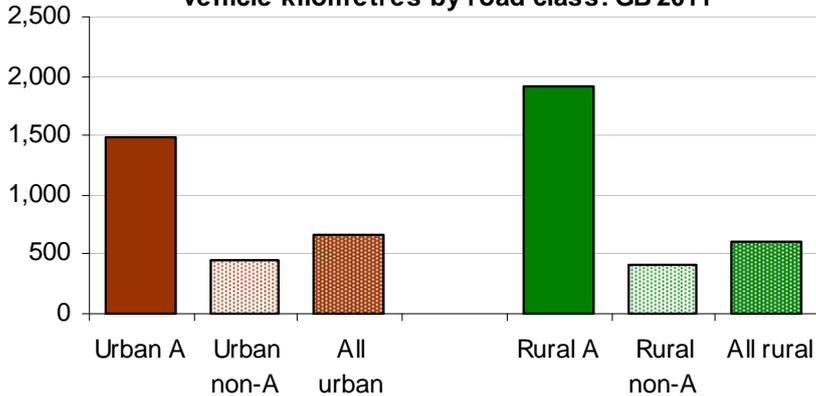


² Based on 2007 Indices of Multiple Deprivation

Where do cycling accidents happen?

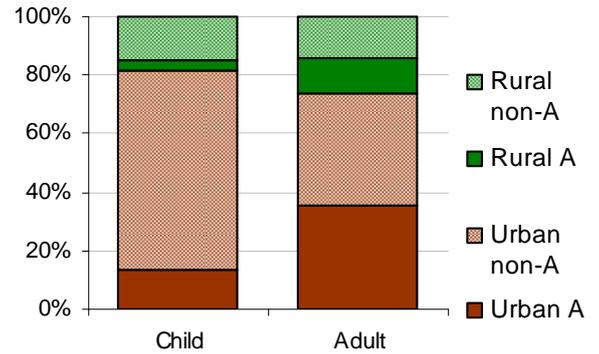
Urban/rural: The majority (83 per cent) of reported pedal cycle accidents happened in urban areas; these accidents account for 75 per cent of all pedal cyclist KSI casualties. This is explained by the fact that 73 per cent of cycle traffic was on urban roads in 2011. In comparison, 65 per cent of all accidents and 54 per cent of all KSI casualties occurred in urban areas.

Chart 5: KSI pedal cyclists casualties per billion vehicle kilometres by road class: GB 2011



and slightly lower in rural than urban areas – see **chart 5**.

Chart 4: Reported KSI pedal cyclist casualties by road type: GB 2011



Road class (A road or non-A road):

- Overall 56 per cent of pedal cyclist casualties occur on non-A roads (mostly in urban areas) – including 83 per cent of child pedal cyclist KSI casualties.
- However, when allowing for the amount of pedal cycle traffic (82 per cent of which was on non-A roads in 2011), KSI casualty rates are lower for non-A roads than for A roads,

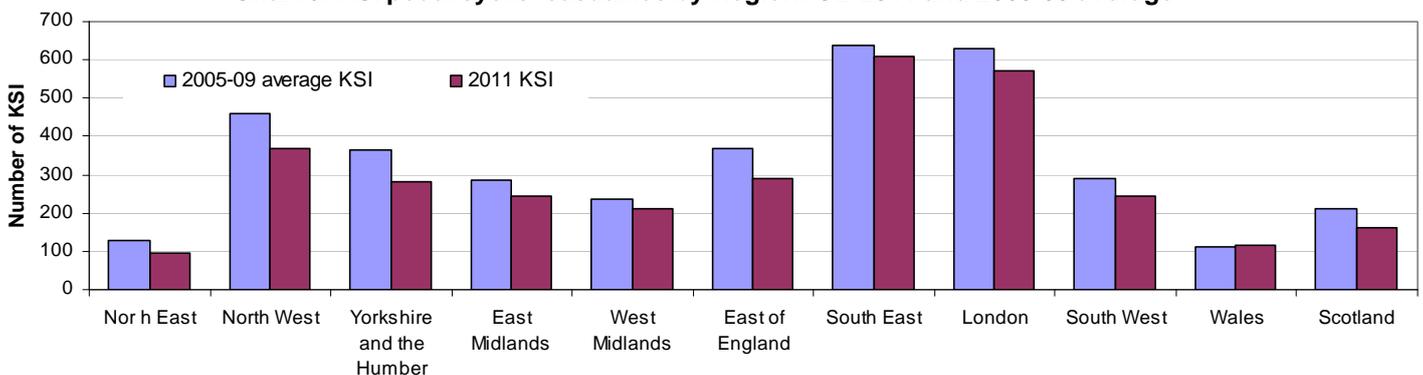
Speed limit (built up and non-built up roads):

- Nearly all (93 per cent) reported pedal cyclist casualties occur on built up roads (those with speed limits of 40mph or less). The equivalent figure for all road users is 71 per cent. 12 per cent of casualties on built-up roads are pedal cyclists, compared with just 3 per cent of casualties on non-built-up roads.
- However, reported accidents on non-built up roads (those with speed limits of over 40mph) tend to result in more serious injury – around 1 in 3 cyclist casualties in accidents on non built-up roads are killed or seriously injured, compared with around 1 in 7 on built-up roads.

Region:

- 19 per cent of reported pedal cycle KSI casualties in 2011 were in the South East region, and over a third (37 per cent) were in London and the South East combined.
- The greatest reductions in pedal cycle KSI casualties (in percentage terms) compared with the 2005-09 average have occurred in the North East (26 per cent fall), Yorkshire and the Humber (23 per cent) and Scotland (22 per cent). Changes may reflect changes in the amount of cycling across different regions. Wales was the only region where pedal cycle KSI casualties have increased over this period.

Chart 6: KSI pedal cyclist casualties by Region: GB 2011 and 2005-09 average



When do pedal cycle accidents happen?

Day of week: Most reported pedal cycle casualties occurred on weekdays – 82 per cent. For other road users, the equivalent figure was 74 per cent.

Time of day:

- Most pedal cyclist casualties occur during the morning and evening peak periods on weekdays (**chart 7**). Casualties are more evenly spread through the day on weekends.
- Compared with other road users, fewer pedal cyclist casualties occur between 8pm and 4am – 10 per cent. For other road users, this figure is 17 per cent. This is probably as a result of cyclists being less active during the hours of darkness
- The patterns shown for all pedal cycle casualties are broadly similar for those seriously injured.

Chart 7: Reported pedal cyclist casualties by day of week: GB 2011

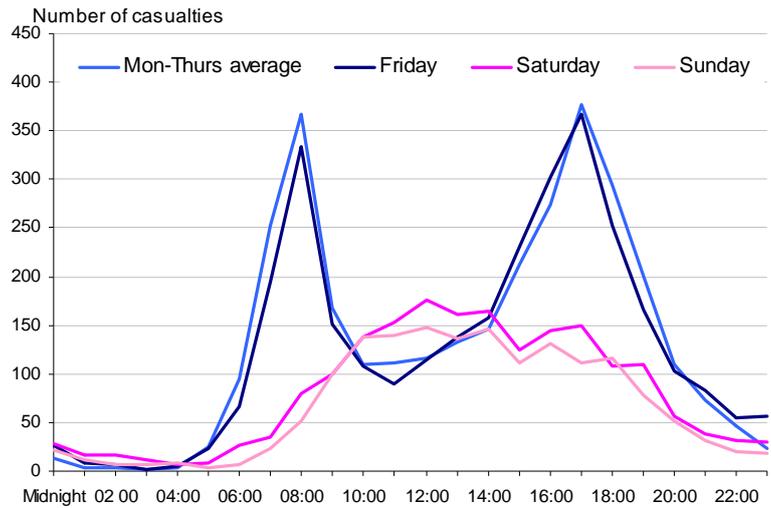
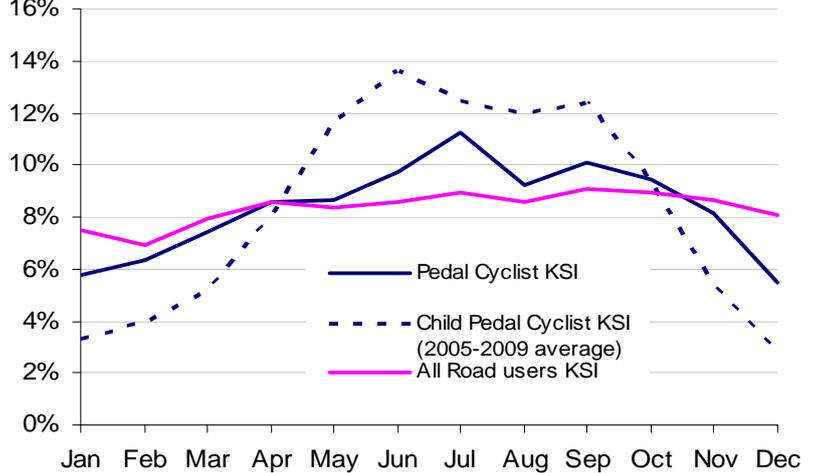


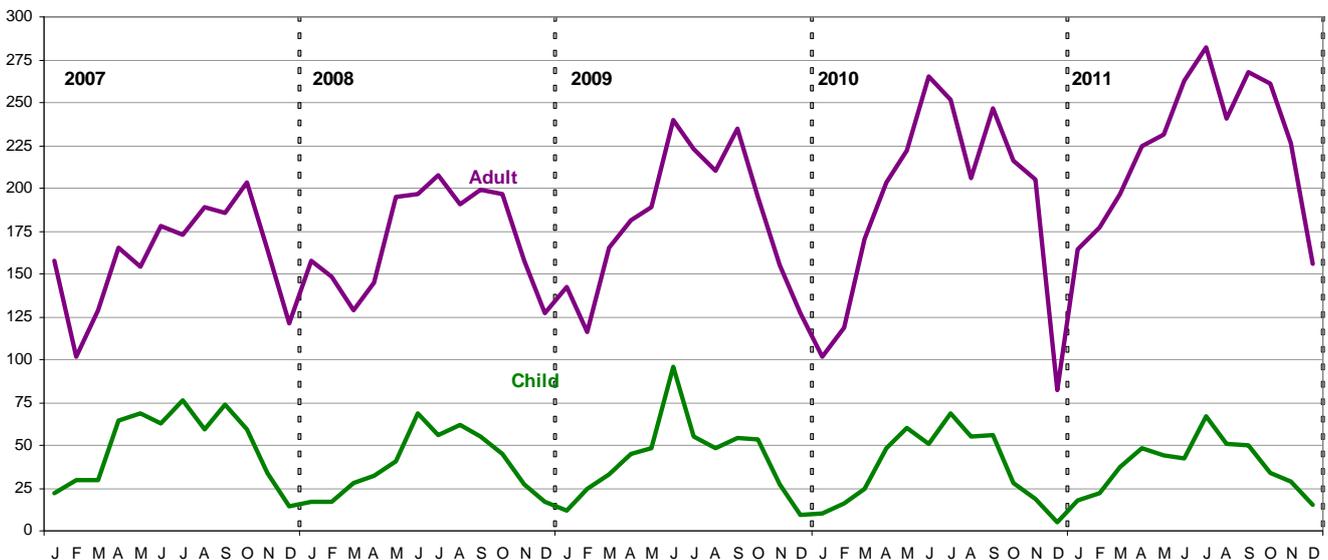
Chart 8: Reported KSI pedal cyclist casualties by month: GB 2011



Month of year: Compared with all road users, a greater proportion of pedal cyclist KSI casualties occur during the summer months, with fewer during the winter - reflecting the fact that cycle traffic is lower in the winter months. For child pedal cyclists, the pattern is similar (please note that the numbers are small and may be subject to some fluctuation between years).

Chart 9 below shows, there have been some changes in this pattern in recent years, with KSI casualties more spread over the summer in 2007 and 2008, compared with clearer peaks in June and July that occurred in 2009-2011 – possibly reflecting weather patterns. The troughs in January and December of 2010 show when heavy snowfall affected traffic levels.

Chart 9: Reported Pedal cycle KSI casualties, by month, and age of casualty: GB 2007-2011



Children travelling to school: The National Travel Survey (2011) records that 1 per cent of primary school children and 3 per cent of secondary school children cycle to school.

What are the accident circumstances?

Number of vehicles: Most reported accidents (92 per cent) involving pedal cycles involve two vehicles (the pedal cycle and one other). In comparison, 60 per cent of all accidents involve two vehicles. This may reflect the fact that accidents involving only a pedal cyclist are less likely to become known to police than other types of accident. Pedal cycle accidents have an average of 1.04 casualties per accident (compared with 1.35 for all accidents), and 94 per cent of the casualties resulting from a pedal cyclist accident are pedal cyclists.

Vehicles involved.

- 80 per cent of pedal cycle accidents involve a pedal cycle and a car. Such accidents account for 71 per cent of killed and seriously injured pedal cyclists, and 81 per cent of all pedal cyclist casualties.
- Accidents between a pedal cycle and HGV were more likely to result in serious injury or death, with nearly 33 per cent of pedal cyclist casualties in these accidents being fatalities, compared with less than 17 per cent of all pedal cyclist casualties.

Table 3: Vehicle number and type in reported accidents involving pedal cyclists: GB 2011

	Accidents		Pedal cyclist casualties			Of all severities		
	Number	Percent	Killed	Serious	Slight	All severities	Percentage killed	Percentage KSI
Single vehicle accidents	948	5	14	246	428	688	.. ²	.. ²
with pedestrian	369	2	0	21	88	109	.. ^{1,2}	.. ²
with no pedestrian	579	3	14	225	340	579	.. ²	.. ²
Two vehicle accidents	18,156	92	75	2,697	15,164	17,936	0.4	15.5
with other pedal cycle	86	0	1	26	84	111	.. ^{1,2}	.. ²
with motorcycle	329	2	2	34	251	287	.. ¹	12.5
with car	15,626	80	43	2,231	13,198	15,472	0.3	14.7
with bus or coach	421	2	1	69	320	390	.. ¹	17.9
with LGV	1,185	6	7	200	969	1,176	.. ¹	17.6
with HGV	350	2	19	94	232	345	.. ¹	32.8
with other vehicle	156	1	2	32	118	152	.. ¹	22.4
Three or more vehicles	544	3	18	142	431	591	.. ¹	27.1
All pedal cycle accident	19,645	100	107	3,085	16,023	19,215	0.6	16.6

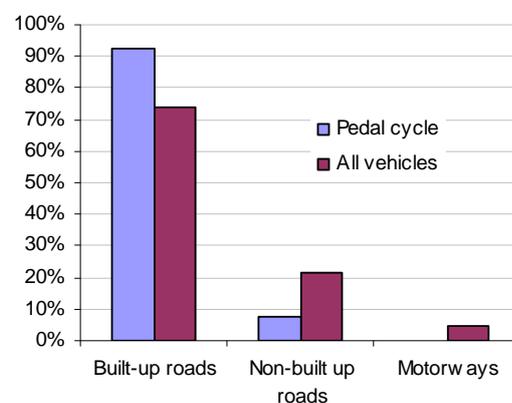
1. Very small numbers of deaths so are subject to fluctuations between years so any percentage can be misleading.

2. These types of accidents are subject to greater levels of under-reporting than other types of accidents. As a significantly large proportion of slight and severe accidents are missing, any percentage is misleading.

Vehicle location and movement: Pedal cycles involved in reported accidents were more likely to be at a junction than other types of vehicles involved in accidents (75 per cent compared to 63 per cent). This could reflect the fact that a higher proportion of pedal cycle accidents are on built up roads (92 per cent), and on built up roads a higher percentage of accidents are at junctions (78 per cent of accidents compared to 44 per cent on non-built-up roads). Most pedal cycles in accidents were recorded as 'going ahead' - 78 per cent. This compares with 66 per cent of motorcycles and 52 per cent of other vehicles involved in accidents. Four per cent of pedal cycles involved in accidents were recorded as being on the footway, and a further 3 per cent on a cycle lane/cycleway.

Pedestrians hit by pedal cycles: The number of pedestrian casualties in accidents with pedal cycles is small, with only 21 serious injuries and 109 casualties in total in 2011.

Chart 10: Vehicles involved in reported accidents by road type: GB 2011



Hit and run: One in every 6 pedal cyclist casualties (16 per cent) occur in a 'hit and run' accident – a total of 3,131 in 2011 of which 432 were seriously injured and 6 killed. Pedal cyclists are over-represented in these accidents, representing 16 per cent of hit and run casualties (compared with 9 per cent of all casualties).

Why do pedal cycle accidents happen?

Contributory factors: Details of factors contributing to injury accidents are recorded by the police. Whilst it is not possible to determine blame from these contributory factors they may offer some insight in common types of accident. An accident can have more than one contributory factor.

- Pedal cyclists were more likely to have no contributory factor³ recorded than other vehicles involved in pedal cycle accidents - 47 per cent compared with 30 per cent.
- *Failed to look properly* was the most commonly recorded factor for both pedal cyclists and other vehicles - assigned more often to vehicles other than the pedal cycle.
- For around 8 per cent of pedal cycles, *entering road from pavement* was recorded as a contributory factor. Pedal cyclists were also more likely to have *loss of control* recorded as a factor (in 6 per cent of cases).

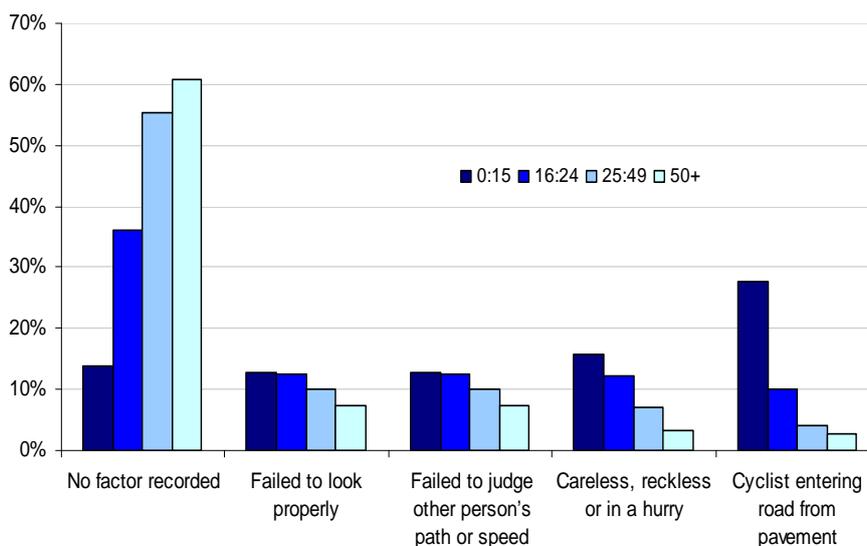
Table 4: Contributory factors in accidents involving at least one pedal cycle (with no pedestrian casualties)

Contributory factor	Pedal cycle		Other vehicle		All vehicles	
	Number	Per cent	Number	Per cent	Number	Per cent
No factor recorded for vehicle	6,054	47	3,797	30	9,891	39
Failed to look properly	3,371	26	5,944	48	9,359	37
Failed to judge other person's path or speed	1,360	10	2,029	16	3,398	13
Careless, reckless or in a hurry	1,115	9	1,479	12	2,599	10
Poor turn or manoeuvre	685	5	1,456	12	2,154	8
Passing too close to cyclist, horse rider or pedestrian	59	0	1,180	9	1,257	5
Cyclist entering road from pavement	1,095	8	44	0	1,139	4
Stationary or parked vehicle(s)	366	3	523	4	892	3
Loss of control	732	6	96	1	830	3
Disobeyed 'Give Way' or 'Stop' sign or markings	193	1	577	5	772	3
Number of vehicles	12,956		12,495		25,568	

The chart shows the five most common factors attributed to pedal cyclists involved in accidents, by age group:

- Younger cyclists are much more likely to have at least one factor recorded – more than 8 of every 10 children had at least one factor, compared with around 4 in 10 of those aged 25 and over.
- Children were more likely to have the factors, *careless, reckless or in a hurry, cyclist entered road from pavement* and *failed to judge speed*.
- In addition 6 per cent of child pedal cyclist casualties had the factor *learner/inexperienced rider* - compared with less than 1 in 500 of those aged 25 and over.

Chart 11: Contributory factors for reported accidents involving pedal cyclists by age: GB 2011



Involvement of alcohol: Very few pedal cyclist casualties occur in accidents involving a drink-driver – 100 in 2010 (around 1 per cent of all drink-drive casualties). Coroners' data suggests that among adult pedal cyclist fatalities fewer are

³ Figures relate only to those accidents at which a police officer attended the scene and at least one contributory factor was recorded.

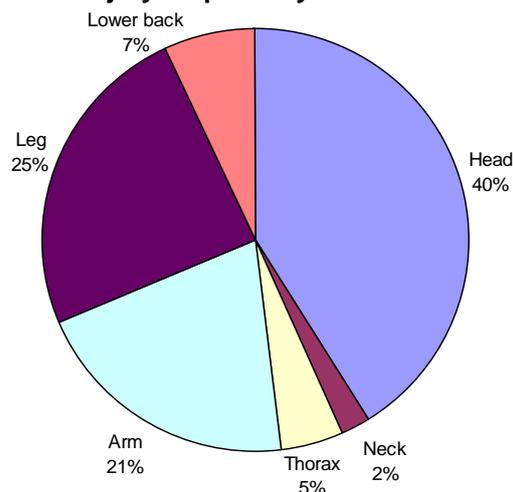
over the legal limit for driving a motor vehicle than other types of road user (14 per cent compared with 22 per cent – excluding motorcycles – in 2010) - though this is based on a small number of cases so estimates include a relatively high level of uncertainty.

Chart 12: Areas of injury on pedal cyclist casualties: GB 2001-2010

What are the medical consequences of accidents for cyclists?

Information on the medical consequences of pedal cycle casualties in road accidents can be obtained from hospital inpatient data (Hospital Episode Statistics, HES – 2010 data).

- Most pedal cycle admissions are the result of injuries to the head/face or legs.
- Compared with other road user types, a higher proportion of cyclists were admitted with head/face injuries – 40 per cent of cyclist admissions, compared with 28 per cent of all road casualty admissions (including cyclists).



Notes

Coverage: The definition of pedal cycles used in reporting of road accidents for the STATS19 database includes tandems, tricycles and toy cycles ridden on the carriageway. From 1983 the definition has included a small number of cycles and tricycles with battery assistance with a maximum speed of 15mph.

Under-reporting: Whilst the vast majority of road accident fatalities become known to the police, studies have shown that an appreciable proportion of non-fatal injury accidents are not reported and therefore not included in the data. These studies have shown that reporting rates for pedal cyclists, and especially those involved in single vehicle accidents, tend to be lower than for other road users.

Further information

This factsheet presents summary information relating to pedal cycle casualties in road accidents in Great Britain. The following are sources of further information:

- **Road Casualties Great Britain: Annual Report:** This contains information on all road accidents in Great Britain, including more detailed figures and tables relating to pedal cycles involved in accidents and pedal cyclist casualties. In particular, the 2006 report contains an article containing further details of coverage of pedal cycle casualties in hospital data. The publication can be accessed online at:
<http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/adobepdf/162469/221412/221549/227755/rcgb2006v1.pdf>
- **National Travel Survey:** The Department's National Travel Survey collects information about cycling activities, and provides data on trends that can be used to calculate casualty rates. More details and figures can be found in the NTS annual report:
<https://www.gov.uk/government/publications/national-travel-survey-2011>
- **Research studies:** The Department for Transport has commissioned a number of research studies into different aspects of young drivers. Details can be found on the Department's road safety webpage at
<https://www.gov.uk/government/publications/road-safety-research-and-statistical-reports>
The Transport Research Laboratory also publishes research on a wide range of road safety topics:
http://www.trl.co.uk/library/reports_publications/

Any enquiries relating to the figures in this factsheet or requests for further information on pedal cycle accidents and casualties in Great Britain can be addressed to the Road Safety Statistics branch at the Department for Transport:

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