Traffic Safety Basic Facts 2010

Cyclists

Introduction

This fact sheet explores the characteristics of pedal cyclist fatalities. These make up a relatively small proportion of the fatality total, but cyclists' high level of vulnerability means that it is important to understand well the characteristics of this road user group. A good insight into the problem provides an opportunity to improve the safety of this cheap, convenient and environmentally safe mode of transport.

Fatality refers to any road user who was killed outright or who died within 30 days as a result of the accident. This fact sheet addresses fatalities among cyclists and all references to fatalities thus refer to a fatal injury of a cyclist. The terms "bicycles" and "cycles" refer only to two-wheel push bikes. Where data availability allows, the most recent year or period has been analysed, and a note is made of exceptions.

How Big is the Problem?

In 2008, 2,440 pedal cyclists were killed in road accidents in the EU-23 countries, 6.5% of all fatalities.

Bicycle fatalities make up 6.5% of the total number of road accident fatalities in 2008 in the EU-23 countries. In these countries 2,440 people riding bicycles were killed in traffic accidents in 2008, which is 8% less than the 2,655 bicycle fatalities reported in 2007. In the EU-16 countries (EU-23 except Germany, Estonia, Latvia, Hungary, Poland, Slovenia and Slovakia) the number of cyclist fatalities decreased by 29% during the decade 1999-2008.

Table 1 shows the number of cyclist fatalities for 23 European Union countries from 1999 up to 2008. For the newer EU-countries (Estonia, Latvia, Hungary, Poland, Slovenia and Slovakia) and for Germany, data are not available for all years. Those countries are not included in the EU-16 total.

Table 2 shows the fatality rates of cyclists over a ten-year period. This is defined as the number of cyclist fatalities per million inhabitants. The fatality rates in 2008 are highest in Hungary and Poland and lowest in Spain and the UK. While these rates fluctuate somewhat from year to year, there has been a general notable decrease in rates for the EU-16 countries (except Luxemburg) over the ten-year period of 1999-2008 (Figure 1). The only exception was in Romania where the fatality rate increased slightly over the ten years.

Table 1: The number of cyclist fatalities by country, 1999-2008 [1]

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BE	122	134	130	105	110	79	71	92	90	86
CZ	142	151	141	160	159	131	115	110	116	93
DK	59	58	56	52	47	53	41	31	54	54
DE	-	659	635	583	616	475	575	486	425	456
EE	-	-	-	-	-	-	7	13	13	9
IE	14	10	12	18	10	11	10	9	15	13
EL	23	22	29	14	21	24	18	21	16	22
ES	119	84	100	96	78	88	82	72	90	59
FR	324	270	256	223	201	177	180	181	142	148
IT	402	401	366	326	355	322	335	311	352	288
LV	-	-	-	-	-	-	-	33	18	15
LU	0	1	1	1	0	0	1	0	0	0
HU	-	-	-	-	178	183	152	153	158	109
NL	194	198	195	169	188	157	151	179	147	145
AT	68	62	55	80	56	58	47	48	37	62
PL	-	-	610	681	647	691	603	509	498	433
PT	41	56	50	58	63	47	48	40	34	42
RO	126	157	145	132	156	130	206	198	179	179
SI	-	26	16	18	0	22	19	15	17	16
SK	-	-	-	-	-	-	56	52	61	46
FI	63	53	59	53	39	26	43	29	22	18
SE	45	47	43	42	35	27	38	26	33	30
UK	173	131	140	133	116	136	152	147	138	117
EU-16	1,916	1,834	1,778	1,662	1,634	1,465	1,537	1,494	1,465	1,356
Yearly change	-	-4%	-3%	-7%	-2%	-10%	5%	-3%	-2%	-7%

Source: CARE Database / EC Date of query: February 2011

Table 2: Cyclist fatality rates per million inhabitants by country, 1999-2008.

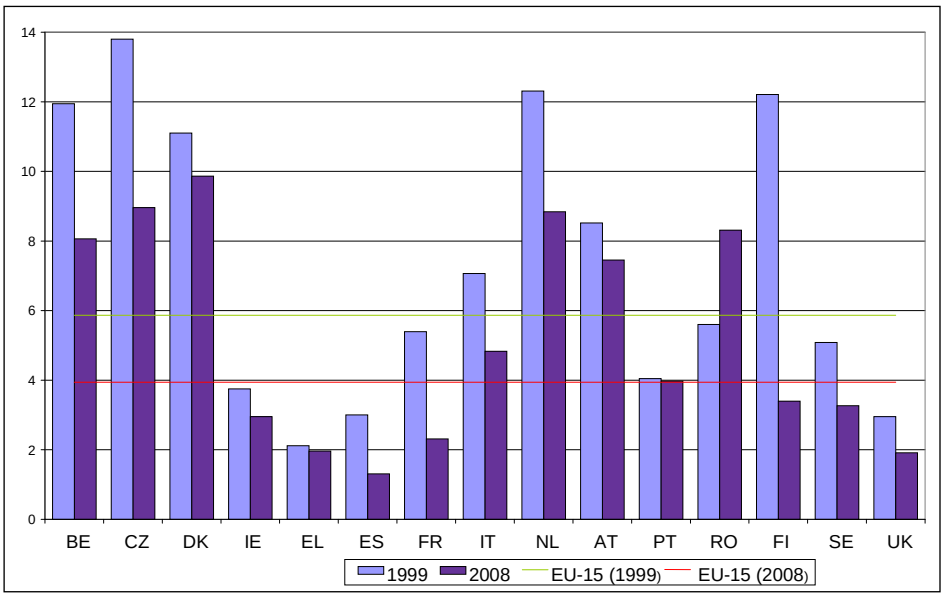
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BE	11.9	13.1	12.7	10.2	10.6	7.6	6.8	8.8	8.5	8.1
CZ	13.8	14.7	13.7	15.7	15.6	12.8	11.3	10.7	11.3	9.0
DK	11.1	10.9	10.5	9.7	8.7	9.8	7.6	5.7	9.9	9.9
DE	-	8.0	7.7	7.1	7.5	5.8	7.0	5.9	5.2	5.5
EE	-	-	-	-	-	-	5.2	9.7	9.7	6.7
IE	3.8	2.6	3.1	4.6	2.5	2.7	2.4	2.1	3.5	3.0
EL	2.1	2.0	2.7	1.3	1.9	2.2	1.6	1.9	1.4	2.0
ES	3.0	2.1	2.5	2.3	1.9	2.1	1.9	1.7	2.0	1.3
FR	5.4	4.5	4.2	3.6	3.2	2.8	2.9	2.9	2.2	2.3
IT	7.1	7.0	6.4	5.7	6.2	5.6	5.7	5.3	6.0	4.8
LV	-	-	-	-	-	-	-	14.4	7.9	6.6
LU	-	2.3	2.3	2.3	-	-	2.2	-	-	-
HU	-	-	-	-	17.6	18.1	15.1	15.2	15.7	10.9
NL	12.3	12.5	12.2	10.5	11.6	9.7	9.3	11.0	9.0	8.8
AT	8.5	7.7	6.9	9.9	6.9	7.1	5.7	5.8	4.5	7.5
PL	-	-	15.9	17.8	16.9	18.1	15.8	13.3	13.1	11.4
PT	4.0	5.5	4.9	5.6	6.0	4.5	4.5	3.8	3.2	4.0
RO	5.6	7.0	6.5	6.0	7.2	6.0	9.5	9.2	8.3	8.3
SI	-	13.1	8.0	9.0	-	11.0	9.5	7.5	8.5	8.0
SK	-	-	-	-	-	-	10.4	9.6	11.3	8.5
FI	12.2	10.2	11.4	10.2	7.5	5.0	8.2	5.5	4.2	3.4
SE	5.1	5.3	4.8	4.7	3.9	3.0	4.2	2.9	3.6	3.3
UK	3.0	2.2	2.4	2.2	2.0	2.3	2.5	2.4	2.3	1.9
EU-16	5.9	5.6	5.4	5.0	4.9	4.4	4.6	4.4	4.3	3.9

Source: CARE Database / EC Date of query: February 2011

Cyclist fatality rates in 2008 were highest in Hungary and Poland and lowest in Spain and the UK.

[1] The country abbreviations are shown on Page 17. EU-16 refers to the 23 countries in Table 1 less DE, EE, LV, HU, PL, SI and SK.

Figure 1: Cyclist fatality rates, 2008 and 1999 compared



Source: CARE Database / EC
Date of query: February 2011

Table 3 shows that the two EU countries with the highest percentage of cyclist fatalities in 2008 were The Netherlands (with around 21%) and Denmark (with around 13%). In contrast, in Greece and Spain cyclists constitute only a small part (<2%) of road accident fatalities. Luxembourg is excluded because of its low number of cyclist fatalities.

Denmark and the Netherlands have the highest percentages of cyclist fatalities in the total number of road accident fatalities.

Table 3: Proportion of road accident fatalities who were cyclists, 1999-2008

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
BE	9%	9%	9%	8%	9%	7%	7%	9%	8%	9%
CZ	10%	10%	11%	11%	11%	9%	9%	10%	10%	9%
DK	11%	12%	13%	11%	11%	14%	12%	10%	13%	13%
DE	-	9%	9%	9%	9%	8%	11%	10%	9%	10%
EE	-	-	-	-	-	-	4%	6%	7%	7%
IE	3%	2%	3%	5%	3%	3%	3%	2%	4%	5%
EL	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%
ES	2%	1%	2%	2%	1%	2%	2%	2%	2%	2%
FR	4%	3%	3%	3%	3%	3%	3%	4%	3%	3%
IT	6%	6%	5%	5%	5%	5%	6%	5%	7%	6%
LV	-	-	-	-	-	-	-	8%	4%	5%
LU	0%	1%	1%	2%	0%	0%	2%	0%	0%	0%
HU	-	-	-	-	13%	14%	12%	12%	13%	11%
NL	18%	18%	20%	17%	18%	20%	20%	25%	21%	21%
AT	6%	6%	6%	8%	6%	7%	6%	7%	5%	9%
PL			11%	12%	11%	12%	11%	10%	9%	8%
PT	2%	3%	3%	3%	4%	4%	4%	4%	4%	5%
RO	5%	6%	6%	5%	7%	5%	8%	8%	6%	6%
SI	-	8%	6%	7%	0%	8%	7%	6%	6%	7%
SK	-	-	-	-	-	-	9%	8%	9%	8%
FI	15%	13%	14%	13%	10%	7%	11%	9%	6%	5%
SE	8%	8%	7%	8%	7%	6%	9%	6%	7%	8%
UK	5%	4%	4%	4%	3%	4%	5%	4%	5%	4%
EU-16	5.0%	4.8%	4.8%	4.6%	4.9%	4.7%	5.1%	5.3%	5.4%	5.4%

Source: CARE Database / EC
Date of query: February 2011

Who is involved?

Table 4 indicates that across the EU countries the majority of cyclist fatalities were males. The proportion of female cyclist fatalities was highest in the Netherlands (41%), while it was 7% or less in countries like Spain, Romania and Slovenia. Across the EU countries, over one third of cyclist fatalities were at least 60 years old (37%).

Over one third of cyclist fatalities were at least 60 years old.

Table 4: Percentage of cyclist fatalities by age and gender, 2008.

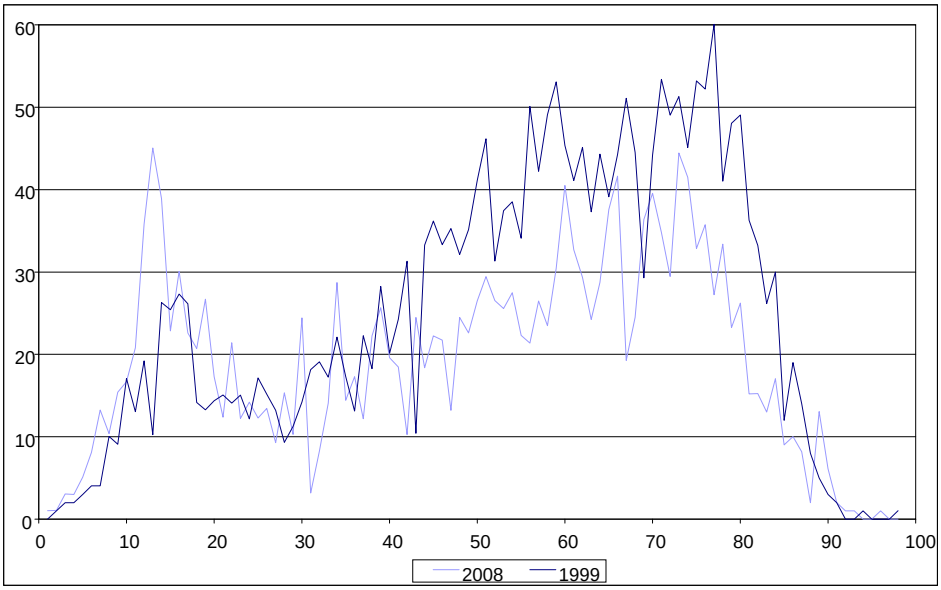
Age group	0-14		15-24		25-39		40-59		60+		Un-known
Gender	female	male	female	male	female	male	female	male	female	male	
BE	0%	9%	6%	9%	3%	3%	9%	22%	9%	28%	0%
CZ	0%	2%	0%	1%	2%	13%	8%	25%	9%	40%	1%
DK	0%	4%	4%	6%	9%	15%	6%	9%	15%	33%	0%
DE	2%	4%	2%	6%	2%	7%	7%	18%	17%	36%	0%
EE	0%	0%	0%	0%	0%	0%	11%	22%	22%	44%	0%
IE	0%	8%	0%	23%	0%	0%	15%	23%	0%	31%	0%
EL	0%	9%	0%	5%	0%	14%	14%	32%	0%	27%	0%
ES	0%	10%	0%	4%	3%	12%	0%	33%	0%	37%	0%
FR	1%	7%	3%	11%	5%	8%	5%	16%	5%	39%	0%
IT	0%	3%	2%	4%	2%	11%	5%	20%	13%	38%	1%
LV	0%	13%	0%	7%	0%	0%	0%	27%	0%	53%	0%
LU	0%	0%	1%	1%	2%	6%	7%	37%	8%	35%	4%
HU	3%	6%	7%	3%	3%	3%	5%	14%	23%	33%	0%
NL	0%	0%	5%	2%	0%	3%	8%	32%	16%	34%	0%
AT	1%	3%	1%	3%	2%	7%	6%	27%	12%	38%	0%
PL	0%	0%	0%	5%	8%	3%	0%	35%	8%	41%	0%
PT	1%	4%	1%	3%	1%	10%	3%	31%	2%	45%	0%
RO	0%	0%	0%	13%	0%	13%	0%	38%	6%	31%	0%
SI	0%	7%	0%	7%	0%	2%	9%	35%	7%	30%	4%
SK	0%	0%	0%	11%	6%	6%	6%	0%	22%	50%	0%
FI	0%	0%	0%	3%	10%	0%	7%	23%	13%	43%	0%
SE	2%	8%	5%	12%	4%	20%	4%	26%	0%	19%	0%
UK	1%	4%	2%	5%	2%	8%	6%	23%	11%	36%	1%
EU-23	0%	9%	6%	9%	3%	3%	9%	22%	9%	28%	0%

Source: CARE Database / EC
Date of query: February 2011

Figure 4 indicates that over a ten-year period (1999-2008), the number of cyclist fatalities has fallen markedly for most ages in the EU-16 countries. This figure displays also a clear trend in fatalities evident both in 1999 and 2008: there is a peak in fatalities of cyclists aged between 12 and 17, the age where children are likely to increasingly be undertaking independent, solo cycle travel. A general decrease in fatality risk then follows till around 30 years, at which point a continuous if jagged increase in fatality numbers is evident until about the age of 80. After this there is a relatively sharp decline.

Fatality numbers have reduced noticeably over 10 years.

Figure 2: Ten-Year Comparison of Cyclist Fatalities by Age in EU-16 countries



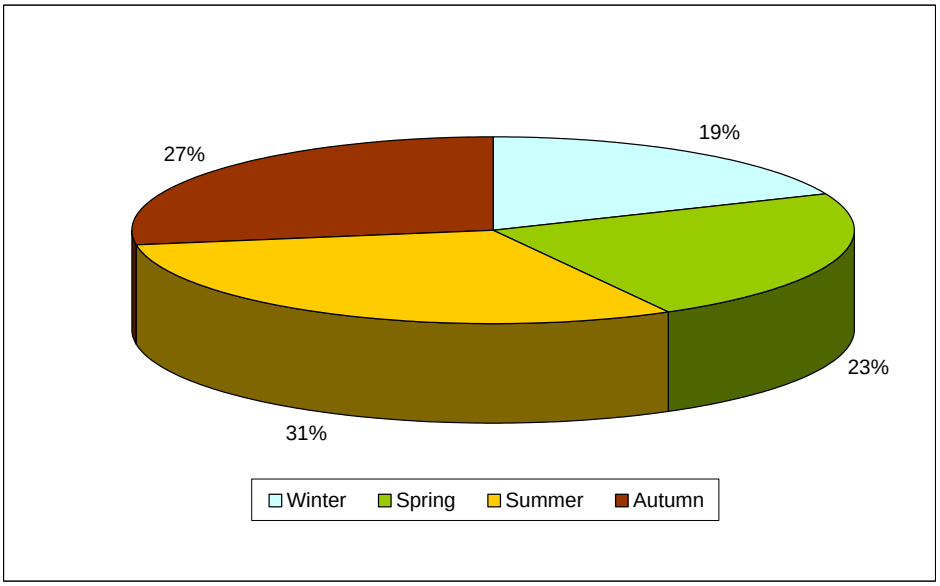
Source: CARE Database / EC
Date of query: February 2011

When do these Crashes Occur?

Over the year, around a third of cyclist fatalities occurred during the summer (June, July and August: 31%), approximately a quarter in the spring (March, April and May: 23%) and a quarter in the autumn (September, October and November: 27%). Winter (December, January and February) produced the least proportions of fatalities (19%). As the slippery wet conditions of many European winters are conducive to high severity crash injuries, these analysis outcomes are likely to be associated with the actual number of cyclists on the road during these seasons rather than an indication of risk of injury per cyclist.

Cyclist fatalities are more common during the summer, nearly twice as many as during the winter.

Figure 3: Proportion of Cyclist Fatalities per Season in 2008



Source: CARE Database / EC
Date of query: February 2011

Table 5 shows that there is no clear trend in the incidence of cyclist fatalities by month among individual countries. The peak for the EU-22 occurred in July (11% of cyclist fatalities) and the fewest fatalities occurred in December, February and March (6% of cyclist fatalities in each month).

Table 5: Cyclist fatalities by month – EU-22 (EU-23 minus Luxemburg), 2008

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BE	8%	5%	9%	7%	12%	13%	12%	7%	7%	9%	2%	9%
CZ	10%	10%	4%	5%	10%	11%	11%	18%	8%	3%	8%	3%
DK	9%	9%	11%	11%	7%	7%	15%	0%	13%	6%	4%	7%
DE	6%	4%	5%	8%	14%	10%	11%	11%	10%	7%	5%	7%
EE	11%	0%	0%	0%	11%	22%	11%	0%	22%	11%	11%	0%
IE	15%	15%	0%	8%	0%	8%	15%	8%	8%	23%	0%	0%
EL	0%	5%	23%	0%	18%	9%	5%	18%	0%	9%	5%	9%
ES	11%	2%	8%	12%	1%	6%	16%	17%	12%	3%	8%	4%
FR	5%	7%	9%	5%	14%	7%	9%	16%	7%	12%	7%	3%
IT	7%	9%	7%	7%	9%	11%	11%	7%	9%	8%	10%	7%
LV	0%	7%	13%	7%	7%	0%	13%	13%	33%	7%	0%	0%
HU	7%	6%	8%	12%	6%	7%	12%	9%	6%	14%	6%	6%
NL	8%	5%	8%	3%	11%	9%	9%	8%	11%	10%	14%	3%
AT	2%	5%	3%	8%	6%	15%	18%	11%	6%	13%	10%	3%
PL	6%	8%	7%	5%	9%	12%	8%	9%	9%	12%	10%	8%
PT	8%	3%	8%	8%	3%	8%	8%	14%	16%	11%	8%	5%
RO	6%	3%	7%	8%	7%	9%	7%	9%	10%	13%	12%	8%
SI	6%	0%	0%	13%	6%	6%	13%	13%	6%	19%	19%	0%
SK	9%	4%	2%	4%	7%	17%	9%	17%	17%	2%	9%	2%
FI	6%	0%	0%	0%	11%	11%	33%	6%	6%	11%	11%	6%
SE	0%	0%	0%	20%	10%	17%	7%	17%	13%	10%	7%	0%
UK	12%	5%	5%	8%	6%	4%	15%	9%	8%	14%	11%	3%
EU-22	7%	6%	6%	7%	10%	10%	11%	10%	9%	10%	8%	6%

Source: CARE Database / EC
Date of query: February 2011

Slightly more cyclists were killed on Wednesdays and Fridays than on other days.

Table 6 presents the overall percentages of cyclist fatalities by day of week in 2008. Nearly 38% of fatalities in Ireland occurred on Wednesdays, and relatively many on Tuesdays in Estonia, Greece and Latvia; however, the numbers of cyclist fatalities are too low for the differences to be considered statistically significant. Overall, there were slightly more cyclist fatalities on Wednesdays and Fridays than on other days.

Table 6: Cyclist fatalities by day of week – EU-22, 2008

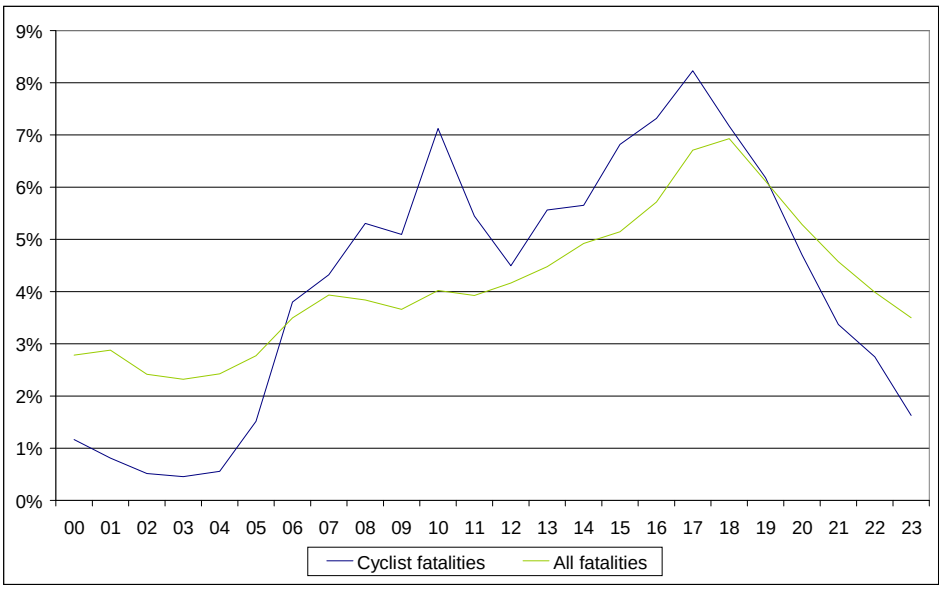
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
BE	13%	8%	14%	15%	17%	23%	9%
CZ	10%	16%	18%	12%	18%	15%	11%
DK	9%	15%	11%	22%	26%	9%	7%
DE	17%	13%	14%	13%	18%	11%	14%
EE	0%	44%	11%	11%	0%	33%	0%
IE	0%	0%	38%	15%	23%	15%	8%
EL	5%	23%	18%	14%	9%	18%	14%
ES	11%	18%	10%	20%	16%	12%	13%
FR	18%	11%	17%	14%	16%	11%	14%
IT	15%	15%	15%	15%	15%	13%	13%
LV	20%	40%	0%	0%	27%	7%	7%
HU	9%	18%	15%	22%	17%	9%	10%
NL	14%	16%	17%	10%	20%	14%	8%
AT	16%	10%	21%	19%	6%	15%	13%
PL	15%	13%	15%	13%	19%	13%	12%
PT	14%	22%	14%	19%	14%	5%	14%
RO	9%	14%	13%	15%	18%	13%	16%
SI	13%	0%	13%	19%	13%	31%	13%
SK	13%	11%	17%	13%	13%	15%	17%
FI	11%	17%	17%	28%	22%	6%	0%
SE	17%	13%	7%	10%	17%	23%	13%
UK	16%	16%	16%	15%	17%	10%	9%
EU-22	14%	14%	15%	14%	17%	13%	12%

Source: CARE Database / EC
Date of query: February 2011

Figure 4 presents the distribution of cyclist fatalities over 24 hours for the EU-22 countries. A large percentage of fatalities across the countries occurred between 16:00 and 19:59 (29%). There were also significant numbers of fatalities in the 08:00-11:59 and 12:00-15:59 periods (23% and 22% respectively). Compared to other transport modes, relatively many cyclists were killed during the daytime.

Almost one third of cyclist fatalities occurred during the 16:00-19:59 period.

Figure 4: Distribution of cyclist fatalities and of all road fatalities by hour of day, EU-22, 2008.



Source: CARE Database / EC
Date of query: February 2011

Table 7 shows the distribution over six three-hour periods for each of the EU-21 countries. Germany is excluded, because for that country the hour of the crash is not available in CARE for cyclist fatalities.

Table 7: Distribution of cyclist fatalities by hour of day, EU-22, 2008

	0:00-3:59 h	4:00-7:59 h	8:00-11:59 h	12:00-15:59 h	16:00-19:59 h	20:00-23-59 h
BE	6%	10%	24%	20%	33%	7%
CZ	1%	12%	18%	23%	35%	8%
DK	2%	19%	31%	20%	22%	6%
EE	0%	11%	22%	11%	22%	33%
IE	8%	8%	8%	38%	15%	23%
EL	9%	14%	14%	14%	36%	14%
ES	2%	4%	30%	27%	27%	11%
FR	3%	8%	27%	27%	30%	5%
IT	3%	4%	29%	21%	28%	15%
LV	0%	0%	20%	27%	40%	13%
HU	2%	17%	23%	18%	28%	13%
NL	4%	6%	19%	33%	26%	12%
AT	3%	6%	13%	37%	27%	13%
PL	2%	13%	20%	21%	30%	14%
PT	3%	11%	22%	22%	24%	19%
RO	2%	12%	21%	16%	33%	16%
SI	6%	13%	19%	19%	19%	25%
SK	2%	11%	24%	15%	28%	17%
FI	0%	11%	28%	28%	22%	11%
SE	10%	17%	23%	37%	10%	3%
UK	5%	13%	25%	17%	28%	12%
EU-22	3%	10%	23%	22%	29%	12%

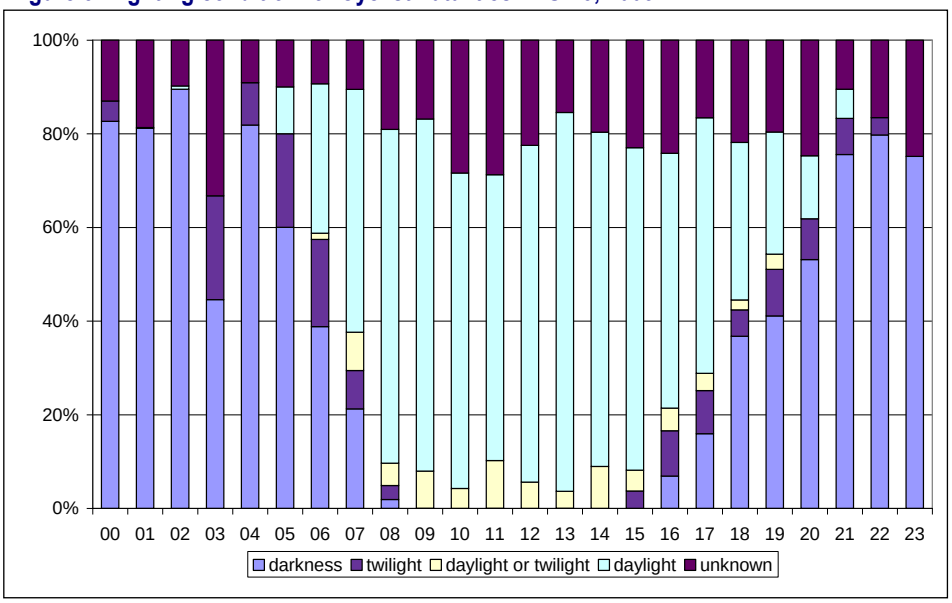
Source: CARE Database / EC
Date of query: February 2011

The proportion of cyclist fatalities between 12:00 and 15:59 was slightly above average in Austria, Ireland and Sweden.

There is no clear trend in the times of collisions for individual countries – the fatality proportion between 12:00 and 15:59 was slightly above average in Austria, Ireland and Sweden, while the proportion between 16:00 and 19:59 in Greece, Latvia and Slovakia was slightly high. Again, some of the numbers of fatalities in individual countries were low and differences are unlikely to be statistically significant. Of countries with larger numbers of fatalities, the highest number of fatalities in France occurred between 16:00 and 19:59 hours; from 08:00 to 11:59 in Italy; and from 16:00 to 19:59 in Poland.

The role of light conditions on the incidence of cyclist fatalities is demonstrated in Figure 5 and Table 8. Some fatalities occurring between 16:00 and 19:59 hours may be related to the lighting conditions, where around 25% of crashes occurred in the dark. On the other hand, crashes between 08:00 and 11:59, and between 12:00 and 15:59 hours have few fatalities related to darkness, and relatively few in the twilight.

Figure 5: Lighting condition for Cyclist Fatalities - EU-23, 2008.



Source: CARE Database / EC
Date of query: February 2011

Additionally, in almost all countries at least one-fifth of cyclist fatalities were killed when lighting was poor (twilight and darkness); the proportion exceeded 40% in Poland.

At least 20% of cyclist fatalities in nearly all countries were killed in poor lighting conditions

Table 8: Number of Cyclist Fatalities by Lighting Condition, EU-22, 2008

	Darkness	Twilight	Daylight or twilight	Daylight	Unknown	Sum	% dark or twilight
BE	18	4	0	64	0	86	26%
CZ	22	0	0	0	71	93	24%
DK	10	3	0	41	0	54	24%
DE	82	17	0	357	0	456	22%
EE	5	0	0	4	0	9	56%
IE	5	0	8	0	0	13	38%
EL	6	2	0	14	0	22	36%
ES	9	2	0	48	0	59	18%
FR	27	4	0	117	0	148	21%
IT	0	0	0	0	288	288	0%
LV	3	2	0	10	0	15	33%
HU	31	4	0	74	0	109	32%
NL	33	6	0	106	0	145	27%
AT	18	0	0	44	0	62	29%
PL	127	56	0	250	0	433	42%
PT	11	1	0	30	0	42	30%
RO	44	18	0	103	14	179	35%
SI	0	0	0	0	16	16	0%
SK	13	1	0	30	2	46	30%
FI	2	0	0	16	0	18	11%
SE	5	1	0	21	3	30	20%
UK	41	0	75	1	0	117	35%
EU-22	513	121	83	1,330	394	2,440	26%

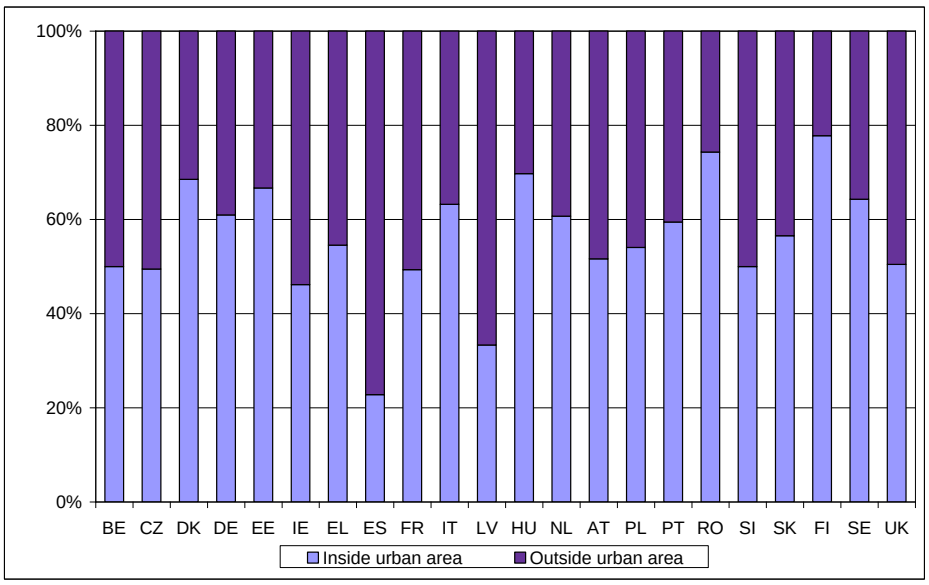
Source: CARE Database / EC
Date of query: February 2011

Where Do These Fatalities Occur?

Almost 60% of the cyclist fatalities in the EU-22 countries were killed inside urban areas. There are large differences between the countries, as follows from Figure 6. In Spain more than 75% of cyclist fatalities were killed in rural areas.

Almost 60% of the cyclist fatalities in the EU-22 countries were killed inside urban areas.

Figure 6: Distribution of cyclist fatalities by area type, EU-22, 2008.



Source: CARE Database / EC
Date of query: February 2011

Between 5% (Greece) and 61% (Denmark) of cyclist fatalities were killed at intersections across the EU countries. Of these, around 68% occurred at a crossroads and around 9% at T- or Y-junctions. When considering individual countries however, the geometrical designs involved were more diverse. In The Netherlands, Poland and Romania over 90% of their junction cyclist fatalities occurred at crossroads (Figure 7). Only T/Y junctions were involved in Estonia, while in countries like Ireland and Portugal there were large proportions of fatalities at T junctions. There were unidentified intersection types in Greece and Slovakia.

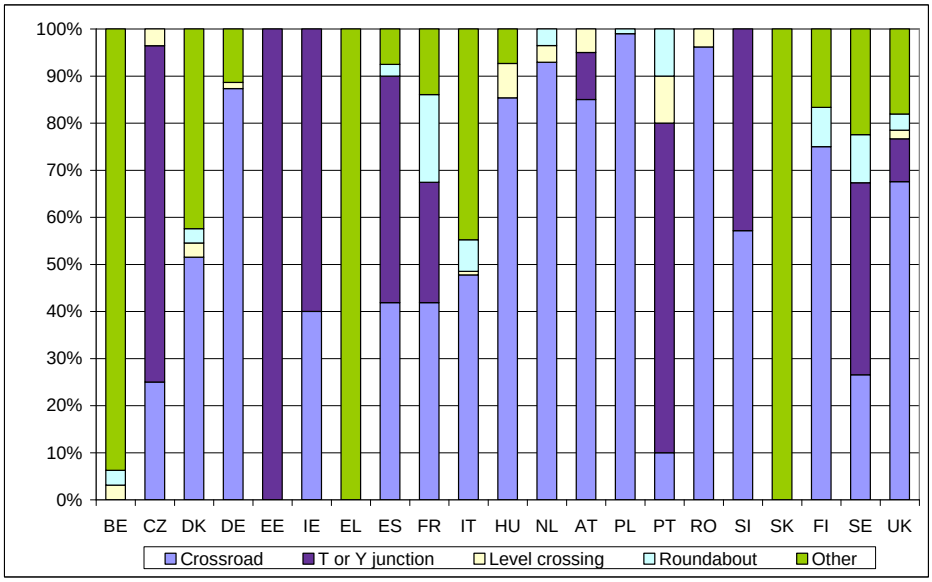
The percentage of fatalities at intersections varied from as little as 5% to 61%.

Table 9: Number of Cyclist Fatalities by Junction Type – EU-22, 2008.

	Not at junction	At junction					% at junction
		Crossroad	T or Y junction	Level crossing	Roundabout	Other	
BE	54	0	0	1	1	30	37%
CZ	65	7	20	1	0	0	30%
DK	21	17	0	1	1	14	61%
DE	69	200	0	3	0	26	50%
EE	6	0	2	0	0	0	22%
IE	0	2	3	0	0	0	38%
EL	21	0	0	0	0	1	5%
ES	41	8	9	0	0	1	31%
FR	105	18	11	0	8	6	29%
IT	154	64	0	1	9	60	47%
LV	15	0	0	0	0	0	0%
HU	68	35	0	3	0	3	38%
NL	60	79	0	3	3	0	59%
AT	33	17	2	1	0	0	32%
PL	335	97	0	0	1	0	23%
PT	30	1	8	1	1	0	27%
RO	153	25	0	1	0	0	15%
SI	8	0	0	0	0	0	0%
SK	30	8	6	0	0	0	30%
FI	12	0	0	0	0	6	33%
SE	4	9	0	0	1	2	40%
UK	68	13	20	0	5	11	42%
EU-22	1,352	600	81	16	31	160	36%

Source: CARE Database / EC
Date of query: February 2011

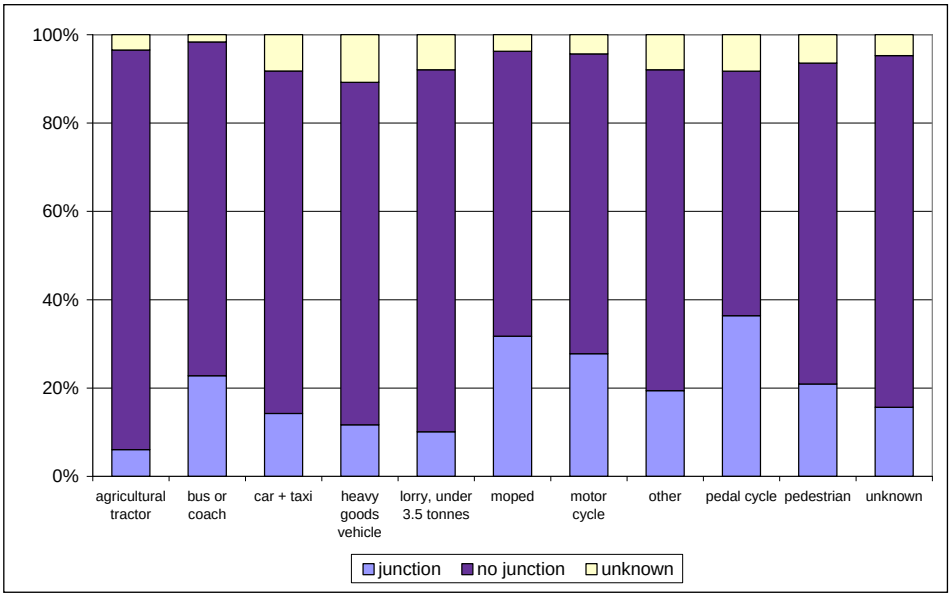
Figure 7: Distribution of cyclist fatalities by junction type, EU-22 Latvia and Slovenia, 2008.



Source: CARE Database / EC
Date of query: February 2011

Figure 8 compares the percentage of cyclist fatalities at intersections to the percentage for other transport modes. Nearly 40% of cyclist fatalities occurred at intersections, higher than for any other mode of transport. Mopeds had the next highest percentage occurring at intersections, around 30%, whereas 14% of car occupant fatalities occurred at intersections.

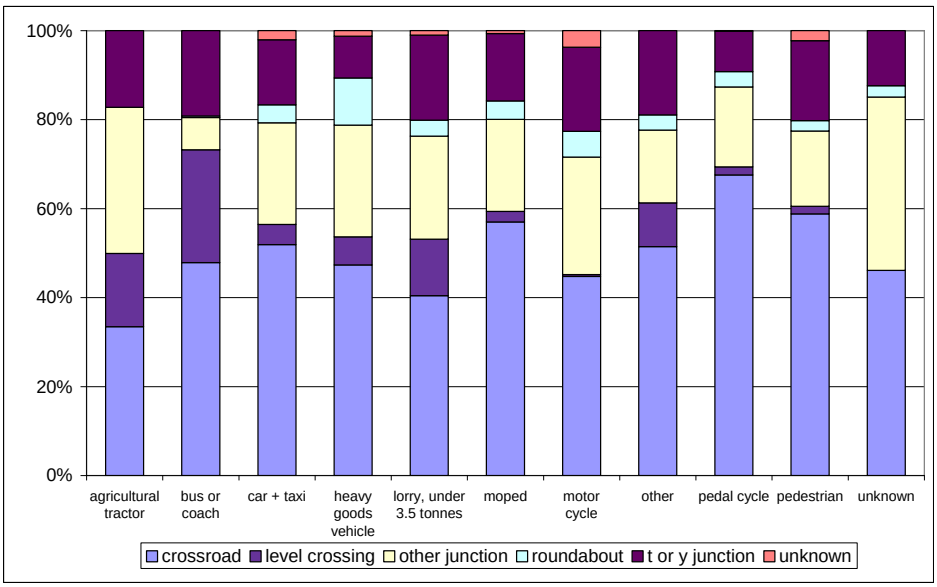
Figure 8: Fatality Proportions Involving Cyclists at Intersections Compared to other Modes of Transport – EU-25, 2008.



Source: CARE Database / EC
Date of query: February 2011

When comparing fatalities at the various types of junctions with the different modes of transport, it is evident that once again pedal cyclist fatalities were over-represented at crossroads (Figure 9), with over 60% occurring at crossroads compared to around 50% for car and taxi occupants. The percentage occurring at T- junctions was smaller than for many other modes of transport.

Figure 9: Distribution of fatalities on junctions over junction types in the EU-22 countries in 2008.



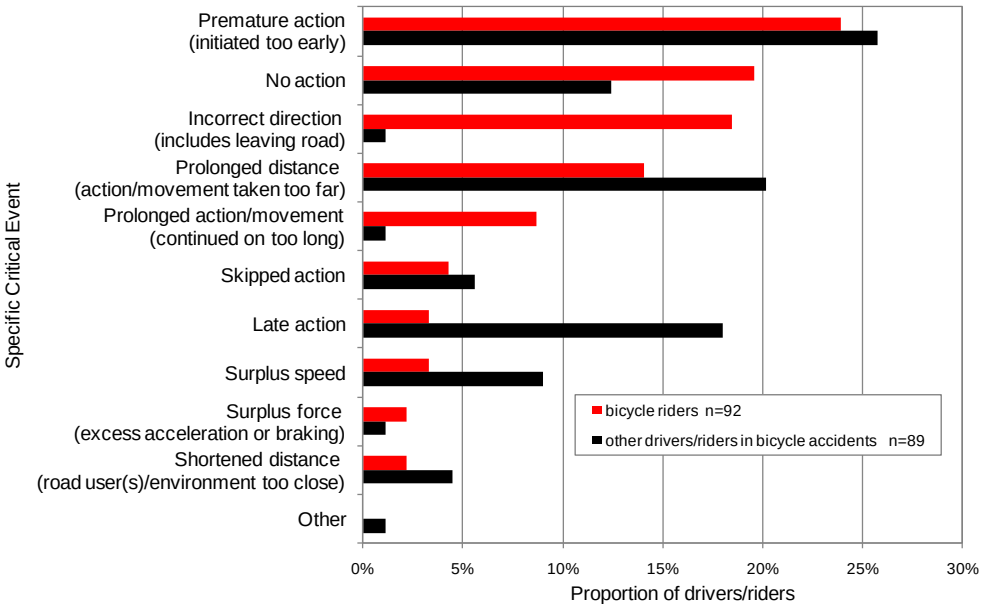
Source: CARE Database / EC
Date of query: February 2011

Accident Causation

During the EC SafetyNet project, in-depth data were collected using a common methodology for samples of accidents that occurred in Germany, Italy, The Netherlands, Finland, Sweden and the UK[2] [3]. The SafetyNet Accident Causation Database was formed between 2005 and 2008, and contains details of 1.006 accidents covering all injury severities. A detailed process for recording causation (SafetyNet Accident Causation System – SNACS) attributes one specific critical event to each driver, rider or pedestrian. Links then form chains between the critical event and the causes that led to it. For example, the critical event of late action could be linked to the cause observation missed, which was a consequence of fatigue, itself a consequence of an extensive driving spell.

In the database, 9% (91) of the accidents involve the rider of a cyclist. Males account for 50% of this group and the mean age is 47 years old. Figure 10 compares the distributions of specific critical events for bicycle riders and other drivers/riders in bicycle accidents.

Figure 10: Distribution of specific critical events - bicycle riders and other drivers/riders in bicycle accidents



Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
N=181
Date of query: 2010

Although premature action is recorded most frequently for both bicycle riders and those others involved in bicycle accidents, it is the difference for incorrect direction that is most striking. Incorrect direction refers to a manoeuvre being carried out in the wrong direction (for example, turning left instead of right) or leaving the road (not following the intended direction of the road). Premature action describes a critical event with an action started too early, before a signal was given or required conditions established. In combination with prolonged distance and prolonged action/movement - movements taken too far and manoeuvres that last for too long (for

[2] SafetyNet D5.5, Glossary of Data Variables for Fatal and Accident Causation Databases
[3] SafetyNet D5.8, In-Depth Accident Causation Database and Analysis Report

example, not returning to correct lane) – scenarios start to emerge of conflict between bicycle riders and other road users when sharing road space.

Table 10 gives the most frequent links between causes for bicycle riders. For this group there are 74 such links in total.

Table 10: Ten most frequent links between causes – bicycle riders

Links between causes	Frequency
Faulty diagnosis - Information failure (driver/environment or driver/vehicle)	13
Observation missed - Faulty diagnosis	6
Observation missed - Inadequate plan	6
Observation missed - Temporary obstruction to view	5
Observation missed - Distraction	4
Observation missed - Permanent obstruction to view	4
Faulty diagnosis - Communication failure	4
Inadequate plan - Insufficient knowledge	4
Observation missed - Inattention	3
Information failure (driver/environment or driver/vehicle) - Inadequate information design	3
Others	22
Total	74

Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
Date of query: 2010

18% of the links between causes are observed to be between 'faulty diagnosis' and 'information failure'.

The numbers here are low but the links are similar to those seen for driver and rider groups in other Traffic Safety Basic Facts, with faulty diagnosis and observation missed being the common causes, closely followed by inadequate plan (a lack of all the required details or that the driver's ideas do not correspond to reality).

Faulty diagnosis is an incorrect or incomplete understanding of road conditions or another road user's actions. It is linked to both information failure (for example, a rider thinking another vehicle was stopped when it was in fact moving and colliding with it) and communication failure (for example, pulling out in the continuing path of a driver who has indicated for a turn too early). The causes leading to observation missed can be seen to fall into two groups, physical 'obstruction to view' type causes (for example, parked cars at a junction) and human factors (for example, not observing a red light due to distraction or inattention).

Disclaimer

The information in this document is provided as it is and no guarantee or warranty is given that the information is fit for any particular purpose. Therefore, the reader uses the information at their own risk and liability.

For more information

Further statistical information about fatalities is available from the CARE database at the Directorate General for Energy and Transport of the European Commission, 28 Rue de Mot, B -1040 Brussels.

Traffic Safety Basic Fact Sheets available from the European Commission concern:

- Main Figures
- Children (Aged <15)
- Youngsters (Aged 15-17)
- Young People (Aged 18-24)
- The Elderly (Aged >64)
- Pedestrians
- Cyclists
- Motorcycles and Mopeds
- Car occupants
- Heavy Goods Vehicles and Buses
- Motorways
- Junctions
- Urban areas
- Roads outside urban areas
- Seasonality
- Single vehicle accidents
- Gender

Country abbreviations used and definition of EU-level

EU - 16	
BE	Belgium
CZ	Czech Republic
DK	Denmark
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
LU	Luxembourg
NL	Netherlands
AT	Austria
PT	Portugal
RO	Romania
FI	Finland
SE	Sweden
UK	United Kingdom (GB+NI)

EU-21= EU-16 +	
DE	Germany
HU	Hungary
PL	Poland
SI	Slovenia
SK	Slovakia

EU-23 = EU-21 +	
EE	Estonia
LV	Latvia

Detailed data on traffic accidents are published annually by the European Commission in the Annual Statistical Report. This includes a glossary of definitions on all variables used.

More information on the DaCoTA Project, co-financed by the European Commission, Directorate-General for Mobility and Transport is available at the DaCoTA Website: http://www.dacota-project.eu/index.html.

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