European Commission

European Road Safety Observatory
www.erso.eu

Traffic Safety Basic Facts 2018

Cyclists

Transport

General

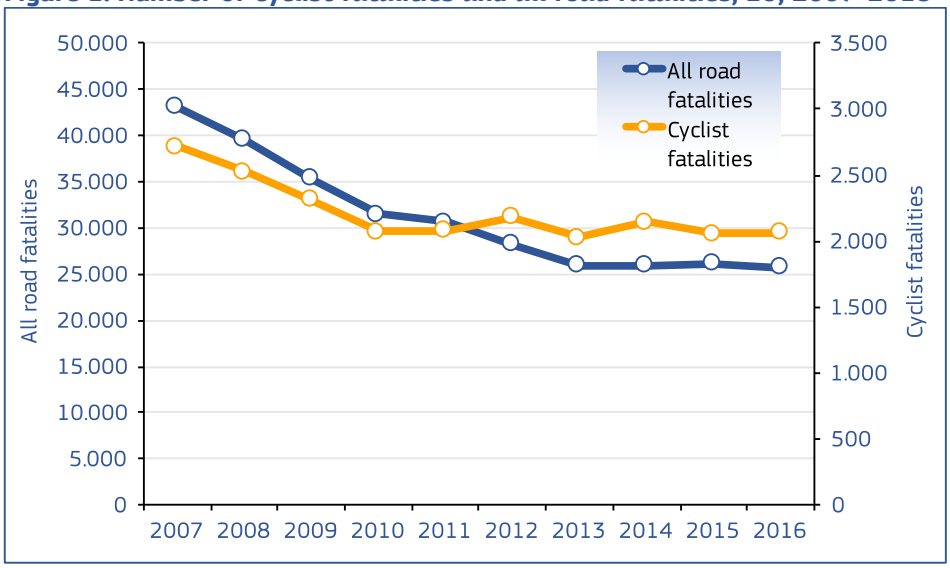
In 2016, about 25.600 people were killed in road accidents throughout the EU, a reduction of 40% from the 2007 total of 43.150. This fact sheet explores the known characteristics of cyclist fatalities. Cyclists, while relatively small in proportion with respect to motorized vehicles, have a high level of vulnerability, creating a significant need to better understand the characteristics specific to this 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.

In 2016, about 2.000 cyclists were killed in road accidents in the EU countries, 8% of all road fatalities.

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 cyclists fatalities hereinafter referred to as fatalities. The term "bicycles" refers only to push bikes. The most recent year or period for which data are available has been analysed.

Bicycle fatalities make up 8% of the total number of road accident fatalities in 2016 in the EU countries. In these countries, 2.015 people riding bicycles were killed in road accidents in 2016 (excluding Lithuania and Slovakia).

Figure 1: Number of cyclist fatalities and all road fatalities, EU, 2007-2016



Source: CARE database, data available in May 2018

Figure 1 shows both the number of cyclist fatalities and the number of all road fatalities in the EU between 2007 and 2016. In this period the decrease of bicycle fatalities was 24%.

Table 1 shows the number of bicycle fatalities for the European Union countries from 2007 up to 2016. For some EU countries data are not available for all years. For these countries estimates are included in the EU total.

Table 1: Number of cyclist fatalities by country, 2007-2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BE	90	86	89	70	70	69	73	76	83	71
BG	-	35	29	27	17	32	31	29	29	-
CZ	116	93	84	80	63	78	74	68	84	53
DK	54	54	25	26	30	22	33	30	26	31
DE	425	456	462	381	399	406	354	396	383	393
EE	13	9	7	0	0	0	0	0	0	-
IE	15	13	7	5	9	8	5	13	-	-
EL	16	22	15	23	13	21	15	19	11	18
ES	90	59	57	67	48	74	70	75	58	67
FR	142	148	162	147	141	164	147	159	149	162
HR	28	47	29	28	28	21	23	19	34	27
IT	352	288	295	265	282	292	251	273	251	275
CY	3	6	2	2	2	1	2	1	1	0
LV	18	15	26	13	15	18	13	16	9	7
LT	-	-	-	-	-	-	18	19	22	-
LU	0	0	2	1	2	0	0	0	0	1
HU	158	109	103	92	85	84	68	98	83	73
MT	0	0	0	0	-	-	-	-	0	1
NL	147	145	138	119	144	145	112	118	107	101
AT	37	62	39	32	42	52	52	45	39	48
PL	498	433	371	280	314	300	306	286	300	271
PT	34	42	29	33	45	32	29	35	25	33
RO	179	179	157	182	140	154	161	151	162	176
SI	17	17	18	17	16	12	16	13	14	12
SK	61	46	22	27	-	-	-	-	-	-
FI	22	18	20	26	19	19	20	27	30	26
SE	33	30	20	21	21	28	14	33	17	22
UK	138	117	104	111	109	120	113	116	100	105
EU	**2.660**	**2.483**	**2.289**	**2.048**	**2.054**	**2.152**	**1.982**	**2.096**	**2.008**	**2.015**
Yearly Change		**-6,6%**	**-7,8%**	**-10,5%**	**0,3%**	**4,7%**	**-7,9%**	**5,7%**	**-4,2%**	**0,3%**
IS	0	0	0	0	0	0	0	0	1	0
NO	7	10	9	5	12	12	10	12	5	12
CH	30	27	54	34	39	36	21	34	39	33

Source: CARE database, data available in May 2018
Totals for EU include latest available data (Lithuanian and Slovakian data not included in totals)

As shown in Table 2, the EU countries with the highest percentage of bicycle fatalities in 2016 were the Netherlands (19%), Denmark (15%) and Germany (12%). In contrast, e.g. in Greece, Spain and France cyclists constitute only a small part of the road accident fatalities.

The Netherlands, Denmark and Germany had the highest percentages of cyclist fatalities in the total number of road accident fatalities.

The percentage of cyclist fatalities of all road fatalities increased from 6% in 2007 to 8% in 2016.

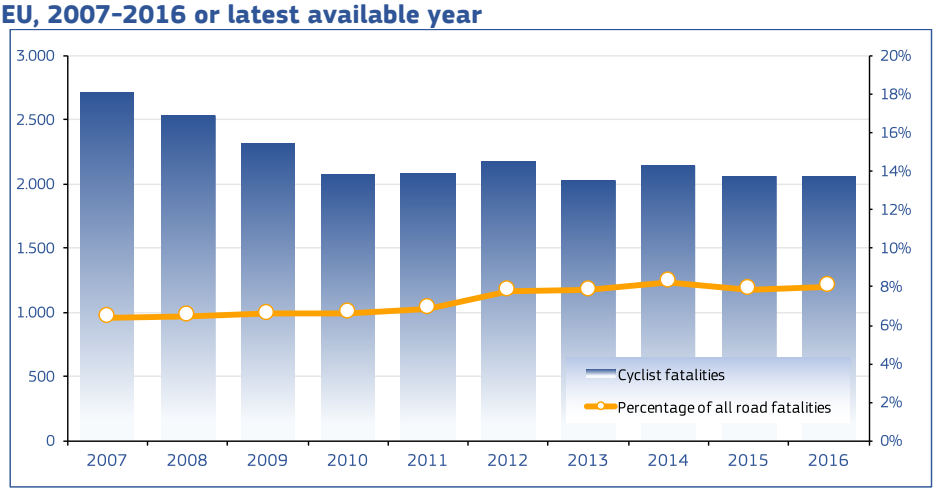
Table 2: Percentage of cyclist fatalities of all road fatalities, 2007-2016 or latest available year

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BE	8%	9%	9%	8%	8%	9%	10%	10%	11%	11%
BG	-	3%	3%	3%	3%	5%	5%	4%	4%	-
CZ	10%	9%	9%	10%	8%	11%	11%	10%	11%	9%
DK	13%	13%	8%	10%	14%	13%	17%	16%	15%	15%
DE	9%	10%	11%	10%	10%	11%	11%	12%	11%	12%
EE	7%	7%	7%	0%	0%	0%	0%	0%	0%	-
IE	4%	5%	3%	2%	5%	5%	3%	7%	-	-
EL	1%	1%	1%	2%	1%	2%	2%	2%	1%	2%
ES	2%	2%	2%	3%	2%	4%	4%	4%	3%	4%
FR	3%	3%	4%	4%	4%	4%	4%	5%	4%	5%
HR	5%	7%	5%	7%	7%	5%	6%	6%	10%	9%
IT	7%	6%	7%	6%	7%	8%	7%	8%	7%	8%
CY	3%	7%	3%	3%	3%	2%	5%	2%	2%	0%
LV	4%	5%	10%	6%	8%	10%	7%	8%	5%	4%
LT	-	-	-	-	-	-	7%	7%	9%	-
LU	0%	0%	4%	3%	6%	0%	0%	0%	0%	3%
HU	13%	11%	13%	12%	13%	14%	12%	16%	13%	12%
MT	0%	0%	0%	0%	-	-	-	-	0%	4%
NL	21%	21%	21%	22%	26%	26%	24%	25%	20%	19%
AT	5%	9%	6%	6%	8%	10%	11%	10%	8%	11%
PL	9%	8%	8%	7%	7%	8%	9%	9%	10%	9%
PT	4%	5%	3%	4%	5%	4%	5%	5%	4%	6%
RO	6%	6%	6%	8%	7%	8%	9%	8%	9%	9%
SI	6%	8%	11%	12%	11%	9%	13%	12%	12%	9%
SK	9%	8%	6%	7%	-	-	-	-	-	-
FI	6%	5%	7%	10%	7%	7%	8%	12%	11%	10%
SE	7%	8%	6%	8%	7%	10%	5%	12%	7%	8%
UK	5%	4%	4%	6%	6%	7%	6%	6%	6%	6%
EU	**6%**	**6%**	**7%**	**7%**	**7%**	**8%**	**8%**	**8%**	**8%**	**8%**
IS	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%
NO	3%	4%	4%	2%	7%	8%	5%	8%	4%	9%
CH	8%	8%	15%	10%	12%	11%	8%	14%	15%	15%

Source: CARE database, data available in May 2018

Figure 2 shows the number of cyclist fatalities and the percentage of all road fatalities in the EU between 2007 and 2016. In this period there was a decrease of 24% in the number of cyclist fatalities. The percentage of cyclist fatalities of all road fatalities increased from 6% in 2007 to 8% in 2016.

Figure 2: Number of cyclist fatalities and percentage of all road fatalities, EU, 2007-2016 or latest available year



Source: CARE database, data available in May 2018

As shown in Table 3, cyclist fatality rates per million population in the EU decreased from 5,5 in 2007 to 4,0 in 2016.

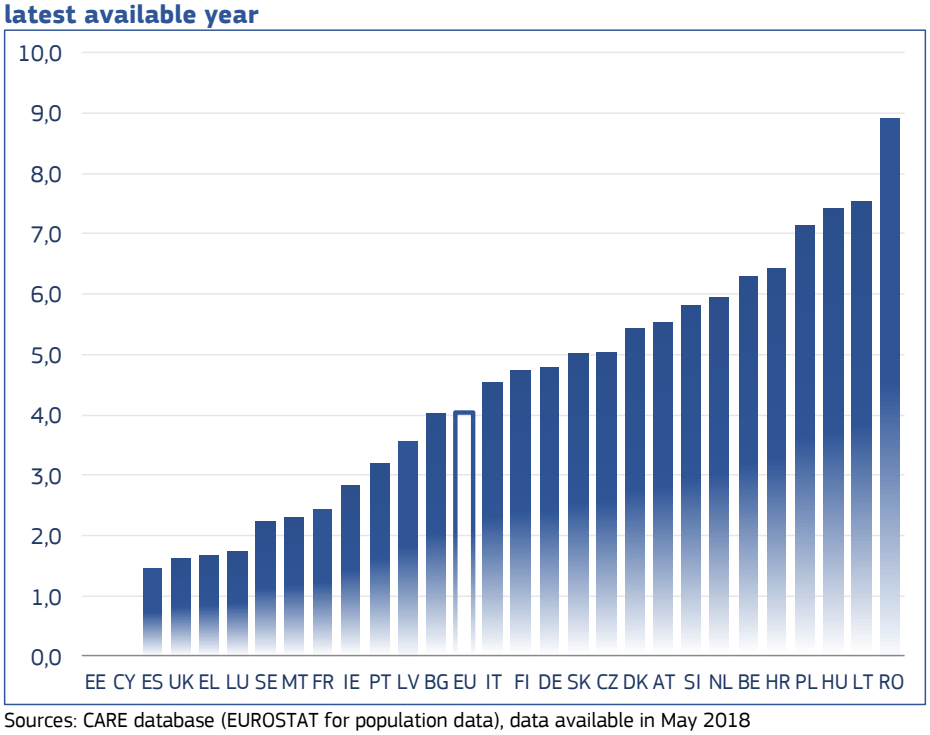
Table 3: Cyclist fatality rates per million population by country, 2007-2016 or latest available year

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
BE	8,5	8,1	8,3	6,5	6,4	6,2	6,5	6,8	7,4	6,3
BG	-	4,7	3,9	3,6	2,3	4,4	4,3	4,0	4,0	-
CZ	11,3	9,0	8,1	7,6	6,0	7,4	7,0	6,5	8,0	5,0
DK	9,9	9,9	4,5	4,7	5,4	3,9	5,9	5,3	4,6	5,4
DE	5,2	5,5	5,6	4,7	5,0	5,1	4,4	4,9	4,7	4,8
EE	9,7	6,7	5,2	0,0	0,0	0,0	0,0	0,0	0,0	-
IE	3,5	2,9	1,5	1,1	2,0	1,7	1,1	2,8	-	-
EL	1,4	2,0	1,4	2,1	1,2	1,9	1,4	1,7	1,0	1,7
ES	2,0	1,3	1,2	1,4	1,0	1,6	1,5	1,6	1,2	1,4
FR	2,2	2,3	2,5	2,3	2,2	2,5	2,2	2,4	2,2	2,4
HR	6,5	10,9	6,7	6,5	6,5	4,9	5,4	4,5	8,0	6,4
IT	6,0	4,9	5,0	4,5	4,8	4,9	4,2	4,5	4,1	4,5
CY	4,0	7,7	2,5	2,4	2,4	1,2	2,3	1,2	1,2	0,0
LV	8,1	6,8	12,0	6,1	7,2	8,8	6,4	8,0	4,5	3,6
LT	-	-	-	-	-	-	6,1	6,5	7,5	-
LU	0,0	0,0	4,1	2,0	3,9	0,0	0,0	0,0	0,0	1,7
HU	15,7	10,9	10,3	9,2	8,5	8,5	6,9	9,9	8,4	7,4
MT	0,0	0,0	0,0	0,0	-	-	-	-	0,0	2,3
NL	9,0	8,8	8,4	7,2	8,6	8,7	6,7	7,0	6,3	5,9
AT	4,5	7,5	4,7	3,8	5,0	6,2	6,2	5,3	4,5	5,5
PL	13,1	11,4	9,7	7,4	8,2	7,9	8,0	7,5	7,9	7,1
PT	3,2	4,0	2,7	3,1	4,3	3,0	2,8	3,4	2,4	3,2
RO	8,3	8,3	7,3	8,5	6,5	7,7	8,0	7,6	8,2	8,9
SI	8,5	8,5	8,9	8,3	7,8	5,8	7,8	6,3	6,8	5,8
SK	11,4	8,6	4,1	5,0	-	-	-	-	-	-
FI	4,2	3,4	3,8	4,9	3,5	3,5	3,7	5,0	5,5	4,7
SE	3,6	3,3	2,2	2,2	2,2	3,0	1,5	3,4	1,7	2,2
UK	2,3	1,9	1,7	1,8	1,7	1,9	1,8	1,8	1,5	1,6
EU	**5,5**	**5,1**	**4,6**	**4,1**	**4,2**	**4,3**	**4,0**	**4,2**	**4,0**	**4,0**
IS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	3,0	0,0
NO	1,5	2,1	1,9	1,0	2,4	2,4	2,0	2,3	1,0	2,3
CH	4,0	3,6	7,0	4,4	5,0	4,5	2,6	4,2	4,7	4,0

Sources: CARE database (EUROSTAT for population data), data available in May 2018

Cyclist fatality rates per million population in the EU decreased from 5,5 in 2007 to 4,0 in 2016.

Figure 3: Cyclist fatality rates per million population by country, 2016 or latest available year

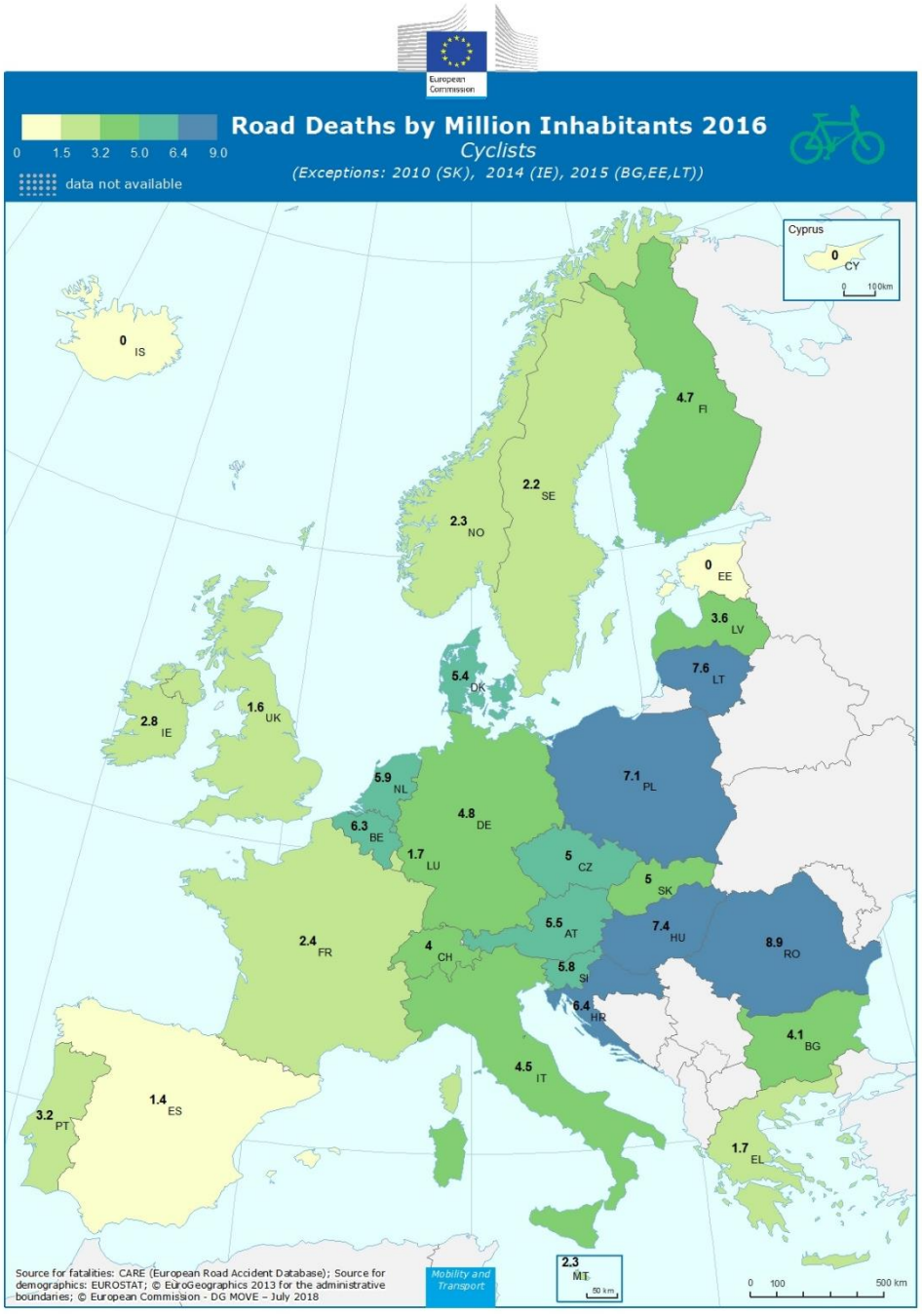


Sources: CARE database (EUROSTAT for population data), data available in May 2018

Romania, Lithuania and Hungary had the highest cyclist fatality rates per million population in the EU in 2016.

Romania, Lithuania and Hungary had the highest cyclist fatality rates per million population in the EU 2016. Estonia, Cyprus and Spain had the lowest cyclist fatality rates per million population in the EU 2016.

Map 1: Cyclist fatality rates per million population by country, 2016 or latest available year



In the following tables and figures, the CARE data for 2016 are analysed in greater detail. It should be noted that the latest available data are used, meaning 2010 data for SK, 2014 data for IE and 2015 data for BG, EE and LT.

Age group and gender

Table 4 indicates that, across the EU countries, the majority of cyclist fatalities are males (80%), however, with a considerable variation between countries (e.g. 62% in the Netherlands and over 90% in Romania). Across the EU, there appears to be a large proportion of cyclists of 65 years or older who die as the cause of an accident (45%).

45% of the cyclists in the EU were at least 65 years old when they died in a road accident.

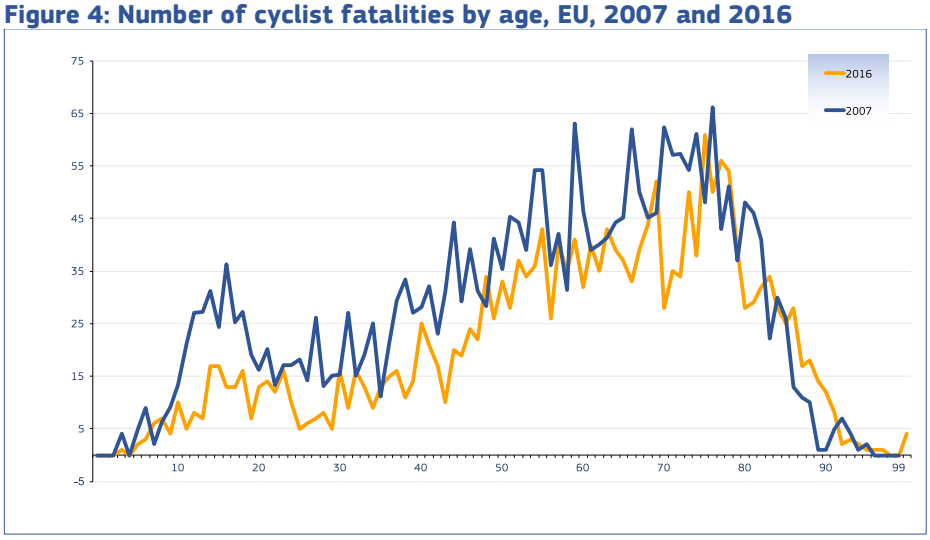
Table 4: Total number and distribution of cyclist fatalities by country, age and gender, 2016 or latest available year

	0-14		15-17		18-24		25-49		50-64		65+		All ages		Total
	F	M	F	M	F	M	F	M	F	M	F	M	F	M	
BE	3%	4%	0%	4%	1%	1%	4%	13%	7%	10%	16%	36%	31%	69%	71
BG	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
CZ	0%	0%	0%	0%	0%	0%	0%	19%	8%	31%	6%	37%	13%	87%	53
DK	3%	0%	0%	3%	6%	3%	10%	6%	3%	16%	10%	39%	32%	68%	31
DE	1%	1%	1%	1%	1%	2%	4%	8%	7%	15%	14%	45%	28%	72%	393
EE	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
IE	0%	0%	0%	0%	0%	0%	15%	46%	8%	8%	0%	23%	23%	77%	13
EL	0%	17%	0%	11%	6%	0%	0%	11%	6%	22%	6%	22%	17%	83%	18
ES	0%	1%	1%	1%	1%	3%	3%	27%	0%	28%	1%	31%	7%	93%	67
FR	1%	6%	0%	2%	2%	4%	2%	13%	5%	23%	6%	35%	17%	83%	162
HR	0%	4%	0%	0%	0%	0%	0%	4%	11%	30%	4%	48%	15%	85%	27
IT	0%	1%	0%	0%	1%	3%	0%	24%	3%	19%	7%	42%	12%	88%	275
CY	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
LV	0%	0%	0%	0%	0%	0%	17%	0%	17%	33%	0%	33%	33%	67%	7
LT	0%	5%	0%	0%	0%	0%	10%	14%	19%	14%	5%	33%	33%	67%	22
LU	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	1
HU	0%	0%	1%	0%	1%	5%	4%	10%	4%	40%	10%	25%	21%	79%	73
MT	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%	1
NL	4%	2%	0%	3%	6%	2%	1%	8%	7%	7%	20%	41%	38%	62%	101
AT	2%	0%	0%	2%	0%	2%	0%	13%	15%	13%	13%	42%	29%	71%	48
PL	0%	5%	0%	2%	1%	3%	3%	14%	8%	23%	8%	33%	21%	79%	271
PT	0%	6%	0%	0%	0%	3%	3%	22%	3%	19%	6%	38%	13%	88%	33
RO	1%	2%	1%	2%	1%	1%	1%	25%	2%	28%	2%	34%	7%	93%	176
SI	0%	8%	0%	8%	8%	0%	0%	17%	0%	33%	0%	25%	8%	92%	12
SK	0%	4%	0%	4%	0%	4%	4%	23%	4%	27%	12%	19%	19%	85%	27
FI	4%	0%	0%	0%	0%	0%	0%	12%	4%	23%	27%	31%	35%	65%	26
SE	0%	5%	0%	0%	5%	9%	0%	9%	0%	23%	14%	36%	18%	82%	22
UK	0%	5%	0%	5%	0%	8%	6%	27%	5%	24%	3%	19%	13%	87%	105
EU	**1%**	**3%**	**0%**	**2%**	**1%**	**3%**	**3%**	**16%**	**6%**	**21%**	**9%**	**36%**	**20%**	**80%**	**2.064**
IS	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
NO	8%	8%	0%	0%	0%	0%	0%	17%	0%	25%	0%	42%	8%	92%	12
CH	6%	3%	0%	3%	0%	0%	12%	12%	0%	30%	12%	21%	30%	70%	33

Source: CARE database, data available in May 2018

Between 2007 and 2016, the peak in fatalities of cyclists aged between 12 and 17 has disappeared; the climax around the age of 75 has remained.

Figure 4: Number of cyclist fatalities by age, EU, 2007 and 2016



Source: CARE database, data available in May 2018

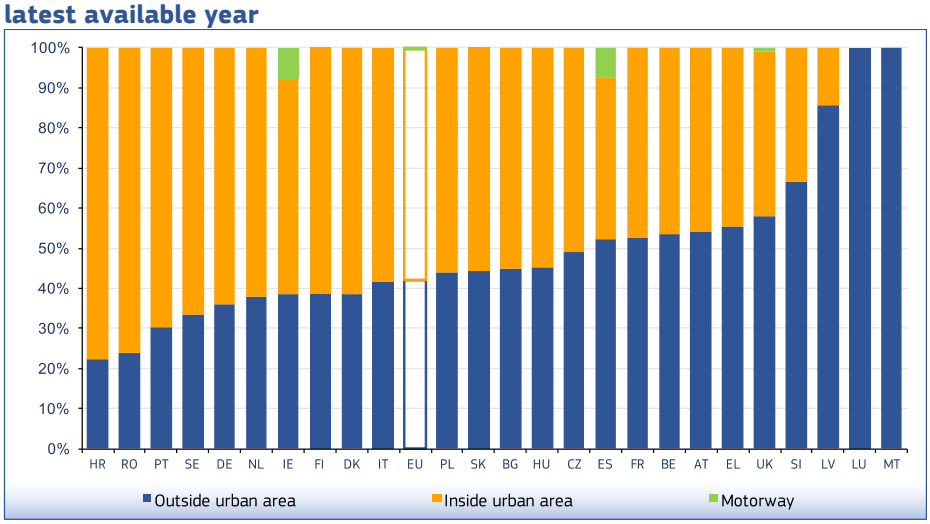
Figure 4 indicates that over the period 2007-2016, there has been a marked reduction in cyclist fatality numbers across almost all ages in the EU countries. The least reduction occurred for cyclists aged over 75, the most visible one refers to cyclists aged between 12 and 17 and between 65 to 70 years.

Area and Road Type

58% of the cyclist fatalities in the EU countries occurred inside urban areas.

In general, 58% of the cyclist fatalities in the EU countries were killed inside urban areas but there are large differences between the countries, as follows from Figure 5. In Croatia and Romania 78% and 76% of cyclist fatalities respectively occurred in urban areas, whilst in Latvia this share was only 26% (low numbers for Malta and Luxembourg).

Figure 5: Distribution of cyclist fatalities by country and area type, 2016 or latest available year



Source: CARE database, data available in May 2018

Junction

As shown in Table 5, 28% of the cyclist fatalities in the EU countries occurred at junctions.

28% of the cyclist fatalities in the EU countries occurred at junctions.

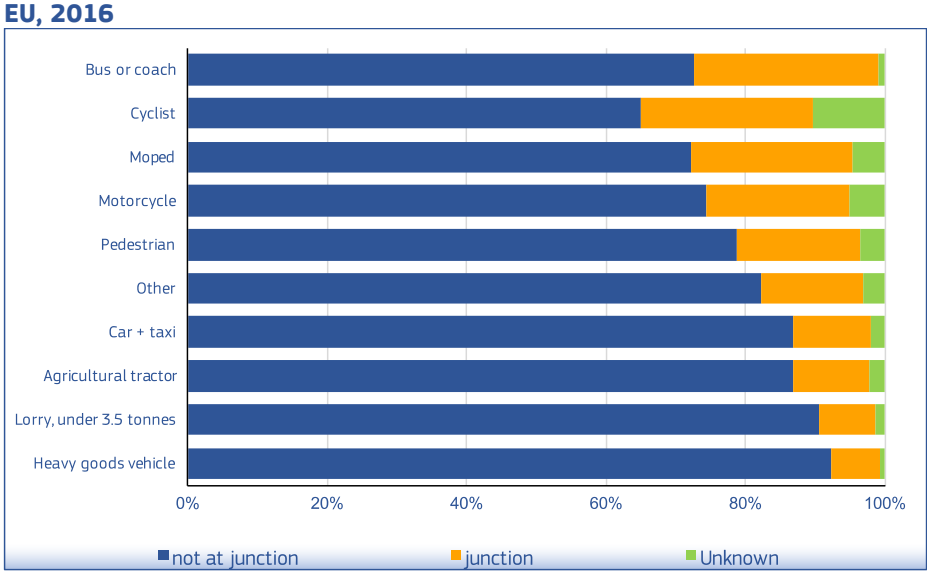
Table 5: Number of cyclist fatalities by country and "junction" and percentage of cyclist fatalities at junction by country, 2016 or latest available year

	Not at junction	At junction				% at junction	Total known
		Crossroad	Roundabout	T or staggered junction	Other		
BE	39	0	0	0	25	39%	64
BG	22	0	0	0	0	0%	22
CZ	35	6	1	11	0	34%	53
DK	11	6	0	10	4	65%	31
DE	213	0	0	0	0	0%	213
EE	0	0	0	0	0	0%	0
IE		0	2	3	0	100%	5
EL	18	0	0	0	0	0%	18
ES	49	6	2	8	2	27%	67
FR	119	16	8	11	8	27%	162
HR	16	4	0	7	0	41%	27
IT	164	49	21	41	0	40%	275
CY	0	0	0	0	0	0%	0
LV	7	0	0	0	0	0%	7
LT	20	0	0	0	0	0%	20
LU	1	0	0	0	0	0%	1
HU	50	15	1	7	0	32%	73
MT	1	0	0	0	0	0%	1
NL	51	45	3		0	48%	99
AT	28	12	0	3	5	42%	48
PL	205	0	4	0	62	24%	271
PT	21	4	2	5	1	36%	33
RO	142	34	0	0	0	19%	176
SI	10	0	0	0	1	9%	11
SK	17	3	1	5	0	35%	26
FI	15	0	0	0	0	0%	15
SE	11	7	1	0	3	50%	22
UK	63	10	5	22	5	40%	105
EU	**1.328**	**217**	**51**	**133**	**116**	**28%**	**1.845**
IS	0	0	0	0	0	0%	0
LI	-	-	-	-	-	-	-
NO	-	-	-	-	-	-	-
CH	0	2	0	11	0	100%	13

Source: CARE database, data available in May 2018

As a comparison of these proportions to other modes of transport, Figure 6 presents the percentage of cyclist fatalities at junctions compared to other modes of transport.

Figure 6: Distribution of road fatalities by "junction" and mode of transport, EU, 2016



Source: CARE database, data available in May 2018

Fatalities occurring at junctions were second highest for bicycles compared to the other modes of transport.

With 25% of cyclist fatalities occurring at junctions, bicycles have the second highest fatality share at junctions. Buses or Coaches have the highest fatality rate at junctions.

Day of the week and Time of the day

Overall in the EU, most cyclist fatalities occurred in the 12:00-16:00 period (26%) and in the 16:00-20:00 period (27%).

Table 6 shows the total number and distribution over six four-hour periods for each of the EU countries; however, there is no clear trend in the time of accidents for individual countries. Some differences might be due to different daily cycling patterns due to climatic conditions; also some of the numbers of fatalities in individual countries were low, and differences are unlikely to be statistically significant. Overall in the EU most cyclist fatalities occurred in the 12:00-16:00 period (26%) and in the 16:00-20:00 period (27%).

Table 6: Total number and distribution of cyclist fatalities by country and time of day, 2016 or latest available year

	0:00-3:59	4:00-7:59	8:00-11:59	12:00-15:59	16:00-19:59	20:00-23:59	Total
BE	1%	8%	24%	28%	28%	10%	71
BG	7%	7%	10%	21%	38%	17%	29
CZ	4%	21%	15%	25%	23%	11%	53
DK	0%	19%	39%	26%	10%	6%	31
DE	2%	7%	22%	32%	28%	9%	393
EE	0%	0%	0%	0%	0%	0%	0
IE	0%	8%	15%	23%	31%	23%	13
EL	11%	6%	17%	11%	28%	28%	18
ES	4%	7%	34%	25%	21%	7%	67
FR	3%	5%	36%	22%	29%	4%	162
HR	0%	11%	22%	15%	30%	22%	27
IT	6%	3%	31%	25%	22%	13%	275
CY	0%	0%	0%	0%	0%	0%	0
LV	14%	0%	0%	14%	43%	29%	7
LT	0%	9%	14%	23%	55%	0%	22
LU	0%	0%	0%	0%	0%	100%	1
HU	0%	19%	26%	21%	22%	12%	73
MT	0%	0%	0%	100%	0%	0%	1
NL	4%	7%	23%	33%	27%	7%	101
AT	0%	8%	19%	31%	25%	17%	48
PL	1%	8%	24%	25%	33%	8%	271
PT	0%	15%	30%	18%	24%	12%	33
RO	1%	9%	18%	20%	32%	20%	176
SI	0%	8%	17%	33%	17%	25%	12
SK	4%	15%	22%	22%	30%	7%	27
FI	12%	19%	27%	27%	12%	4%	26
SE	5%	14%	23%	23%	18%	18%	22
UK	6%	13%	20%	27%	22%	12%	105
EU	**3%**	**9%**	**25%**	**26%**	**27%**	**11%**	**2.064**
IS	0%	0%	0%	0%	0%	0%	0
NO	-	-	-	-	-	-	-
CH	25%	8%	17%	25%	8%	17%	12

Source: CARE database, data available in May 2018

Table 7 shows the total number and distribution of cyclist fatalities by country and day of the week in 2016. Whereas in some countries (Croatia or Denmark) a high percentage of cyclist fatalities occurred on specific days, the EU percentages are nearly the same for all days of the week.

Whereas in some countries (Croatia and Denmark) a high percentage of cyclist fatalities occurred on specific days, the EU percentages are nearly the same for all days of the week.

Table 7: Total number and distribution of cyclist fatalities by country and day of the week, 2016 or latest available year

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
BE	13%	24%	21%	13%	7%	17%	6%	71
BG	14%	24%	14%	7%	7%	17%	17%	29
CZ	13%	8%	8%	17%	25%	17%	13%	53
DK	13%	16%	10%	23%	23%	10%	6%	31
DE	13%	17%	18%	20%	14%	10%	9%	393
EE	0%	0%	0%	0%	0%	0%	0%	0
IE	15%	15%	31%	0%	15%	8%	15%	13
EL	11%	6%	11%	6%	22%	28%	17%	18
ES	10%	16%	24%	16%	7%	12%	13%	67
FR	12%	15%	14%	15%	17%	15%	11%	162
HR	7%	11%	7%	26%	22%	11%	15%	27
IT	14%	13%	17%	14%	11%	17%	14%	275
CY	0%	0%	0%	0%	0%	0%	0%	0
LV	29%	14%	0%	29%	14%	0%	14%	7
LT	18%	27%	18%	9%	5%	14%	9%	22
LU	0%	0%	0%	100%	0%	0%	0%	1
HU	8%	14%	15%	12%	18%	19%	14%	73
MT	0%	0%	0%	0%	0%	100%	0%	1
NL	11%	17%	11%	15%	17%	17%	13%	101
AT	17%	6%	6%	21%	17%	17%	17%	48
PL	14%	10%	13%	19%	20%	16%	8%	271
PT	12%	15%	21%	9%	12%	18%	12%	33
RO	16%	12%	11%	13%	15%	15%	17%	176
SI	0%	33%	8%	0%	25%	25%	8%	12
SK	15%	30%	15%	11%	11%	11%	7%	27
FI	23%	15%	23%	12%	15%	4%	8%	26
SE	18%	18%	23%	14%	5%	14%	9%	22
UK	13%	13%	13%	21%	17%	8%	14%	105
EU	**13%**	**14%**	**15%**	**16%**	**15%**	**14%**	**12%**	**2.064**
IS	0%	0%	0%	0%	0%	0%	0%	0
NO	8%	0%	8%	8%	33%	17%	25%	12
CH	6%	18%	21%	24%	12%	9%	9%	33

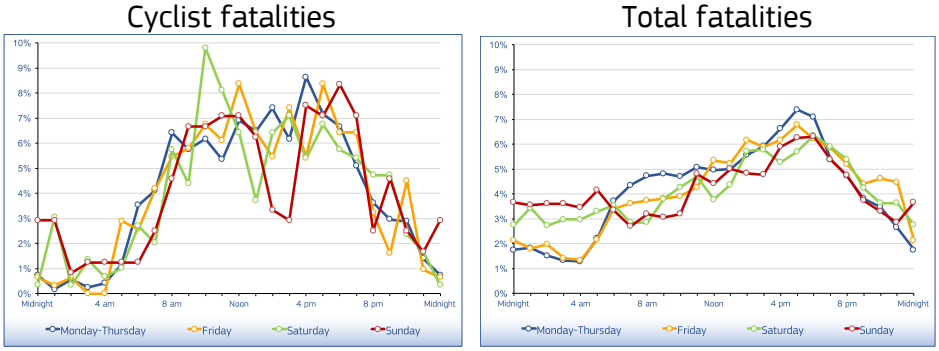
Source: CARE database, data available in May 2018

Especially for Monday to Thursday and Friday the peaks of cyclist fatalities are between 14:00 and 18:00, whereas on Sunday the peak of cyclist fatalities is a bit later (between 16:00 and 20:00).

Figure 7 presents the distribution of cyclist fatalities and total fatalities by day of the week and time of the day. Especially for Monday to Thursday and Friday the peaks of cyclist fatalities are between 14:00 and 18:00, whereas on Sunday the peak of cyclist fatalities is a bit later (between 16:00 and 20:00).

Compared to other transport modes, relatively many cyclists are killed between 08:00 and 18:00 and relatively few between 21:00 and 07:00.

Figure 7: Distribution of cyclist and total fatalities by day of the week and time of the day, EU, 2016 or latest available year



Source: CARE database, data available in May 2018

Seasonality

Table 8 shows that there is no clear trend in the incidence of cyclist fatalities by month among individual countries. The peak for the EU countries occurred from May to September (11% of cyclist fatalities) and the fewest fatalities occurred in January (4% of cyclist fatalities).

The peak for the EU countries occurred from May to September (11% of cyclist fatalities) and the fewest fatalities occurred in January (4% of cyclist fatalities).

Table 8: Total number and distribution of cyclist fatalities by country and month, 2016 or latest available year

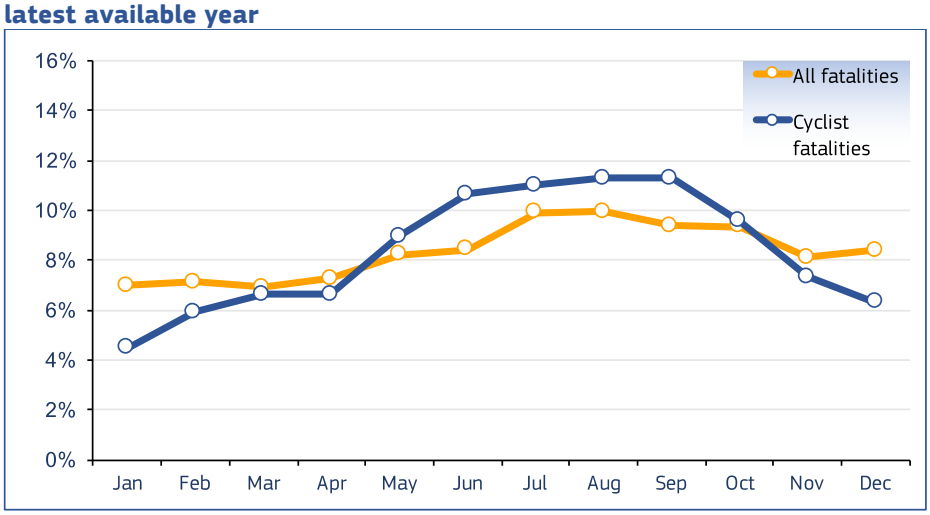
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
BE	8%	6%	8%	8%	8%	8%	10%	11%	13%	8%	8%	1%	71
BG	14%	7%	3%	10%	14%	0%	10%	10%	10%	14%	7%	0%	29
CZ	4%	9%	8%	8%	8%	9%	11%	9%	13%	8%	2%	11%	53
DK	6%	3%	13%	3%	10%	13%	16%	3%	13%	0%	13%	6%	31
DE	5%	5%	4%	7%	9%	9%	10%	14%	15%	10%	6%	6%	393
EE	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
IE	23%	0%	0%	8%	8%	8%	23%	0%	0%	0%	15%	15%	13
EL	6%	11%	0%	17%	0%	11%	0%	17%	17%	0%	11%	11%	18
ES	3%	6%	13%	13%	10%	10%	7%	6%	10%	7%	4%	7%	67
FR	2%	2%	9%	6%	9%	10%	14%	10%	9%	12%	8%	7%	162
HR	7%	11%	4%	0%	11%	4%	19%	7%	7%	15%	4%	11%	27
IT	6%	9%	7%	6%	9%	11%	11%	12%	9%	8%	4%	7%	275
CY	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
LV	0%	29%	0%	0%	14%	14%	0%	14%	0%	29%	0%	0%	7
LT	5%	0%	5%	5%	0%	23%	14%	5%	0%	14%	14%	18%	22
LU	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	1
HU	4%	11%	7%	5%	11%	14%	5%	5%	11%	11%	14%	1%	73
MT	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	1
NL	11%	9%	4%	3%	4%	9%	16%	10%	11%	10%	7%	7%	101
AT	0%	4%	2%	2%	17%	19%	8%	15%	15%	8%	8%	2%	48
PL	2%	5%	7%	8%	8%	13%	11%	9%	14%	7%	9%	7%	271
PT	6%	6%	21%	3%	12%	12%	9%	9%	3%	15%	0%	3%	33
RO	1%	5%	7%	7%	9%	12%	9%	14%	10%	11%	9%	7%	176
SI	0%	0%	0%	0%	8%	17%	25%	17%	8%	8%	8%	8%	12
SK	4%	7%	0%	4%	7%	15%	4%	11%	15%	11%	15%	7%	27
FI	0%	0%	4%	4%	19%	12%	4%	23%	8%	19%	4%	4%	26
SE	0%	5%	5%	14%	0%	14%	14%	27%	9%	9%	5%	0%	22
UK	6%	5%	10%	7%	13%	9%	13%	9%	8%	10%	8%	5%	105
EU	**4%**	**6%**	**7%**	**7%**	**9%**	**11%**	**11%**	**11%**	**11%**	**10%**	**7%**	**6%**	**2.064**
IS	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0
NO	0%	0%	8%	8%	17%	8%	8%	33%	17%	0%	0%	0%	12
CH	6%	3%	3%	3%	15%	12%	3%	15%	21%	12%	3%	3%	33

Source: CARE database, data available in May 2018

Figure 8 shows that about one third of cyclist fatalities in 2016 in the EU countries occurred in July, August and September. The proportion of cyclist fatalities in December, January and February is only about 16%. This is less than the proportion of all fatalities during these months. As the slippery wet conditions of many European winters are conducive to high severity accident 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.

About one third of cyclist fatalities in 2016 in the EU countries occurred in July, August and September.

Figure 8: Distribution of total and cyclist fatalities by month, EU, 2016 or latest available year



Source: CARE database, data available in May 2018

Lighting conditions

The role of light conditions on the incidence of cyclist fatalities is demonstrated in Table 9 and Figure 9.

Table 9: Number of cyclist fatalities by country and lighting condition and percentage of cyclist fatalities in darkness or twilight by country, 2016 or latest available year

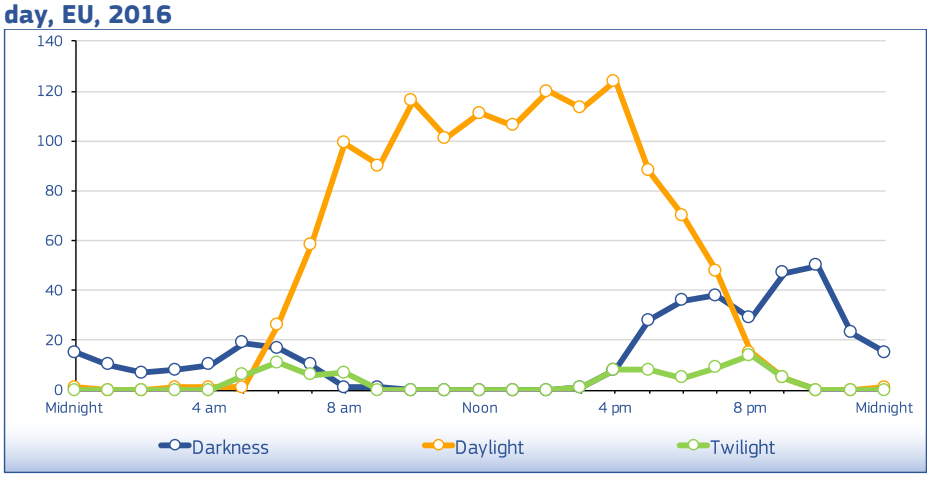
	Darkness	Daylight	Twilight	Total known	Total	% dark or twilight
BE	10	58	1	69	71	16%
BG	10	19	0	29	29	34%
CZ	11	38	4	53	53	28%
DK	5	25	0	30	31	17%
DE	61	313	19	393	393	20%
EE	0	0	0	0	0	0%
IE	2	11	0	13	13	15%
EL	8	9	1	18	18	50%
ES	10	53	4	67	67	21%
FR	21	137	4	162	162	15%
HR	11	16	0	27	27	41%
IT	0	0	0	0	275	0%
CY	0	0	0	0	0	0%
LV	5	2	0	7	7	71%
LT	6	0	2	8	22	100%
LU	1	0	0	1	1	100%
HU	19	52	2	73	73	29%
MT	0	1	0	1	1	0%
NL	18	76	7	101	101	25%
AT	8	40	0	48	48	17%
PL	60	195	16	271	271	28%
PT	6	22	5	33	33	33%
RO	54	113	9	176	176	36%
SI	5	7	0	12	12	42%
SK	8	17	1	26	27	35%
FI	3	22	1	26	26	15%
SE	3	14	1	18	22	22%
UK	29	76	0	105	105	28%
EU	**374**	**1.316**	**77**	**1.767**	**2.064**	**26%**
IS	1	0	0	0	1	0%
NO	3	6	0	9	12	33%
CH	7	20	6	33	33	39%

Source: CARE database, data available in May 2018
*Totals for EU include latest available data

26% of cyclist fatalities in the EU were killed in poor lighting conditions.

Table 9 shows that in the EU countries, 26% of cyclist fatalities were killed when lighting was poor (twilight or darkness); for Latvia and Greece the proportion is even 71% and 50% respectively.

Figure 9: Distribution of cyclist fatalities by light conditions and time of the day, EU, 2016



Source: CARE database, data available in May 2018

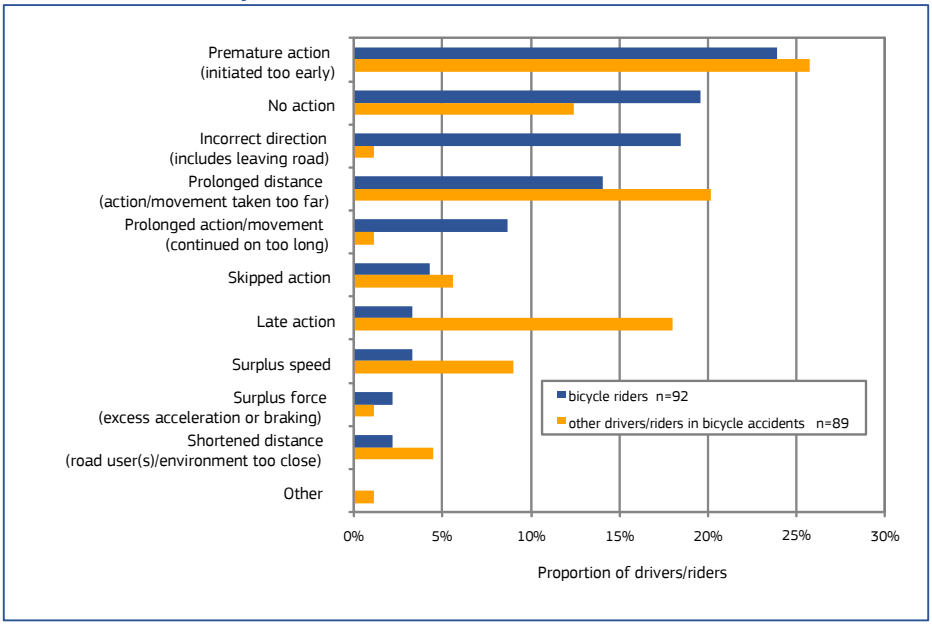
Some fatalities occurring between 16:00 and 20:00 hours may be related to lighting conditions: about 21% of these accidents occurred in the dark.

Accident Causation

Between 2005 and 2008, data of 1.006 accidents (involving all road user types and all injury severities) was collected in Germany, Italy, The Netherlands, Finland, Sweden and the UK[12].

In the database, 9% (91) of the accidents involve the rider of a bicycle. Males account for 50% of this group and the mean age is 47 years. 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.

[1]SafetyNet D5.5, Glossary of Data Variables for Fatal and Accident Causation Databases

[2]SafetyNet D5.8, In-Depth Accident Causation Database and Analysis Report

In combination with prolonged distance and prolonged action/movement - movements taken too far and manoeuvres that last for too long (for 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 injury accidents involving bicycle riders. For this group there are 74 such links in total.

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

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

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 factor' type causes (for example, not observing a red light due to distraction or inattention).

Road Accident Health Indicators

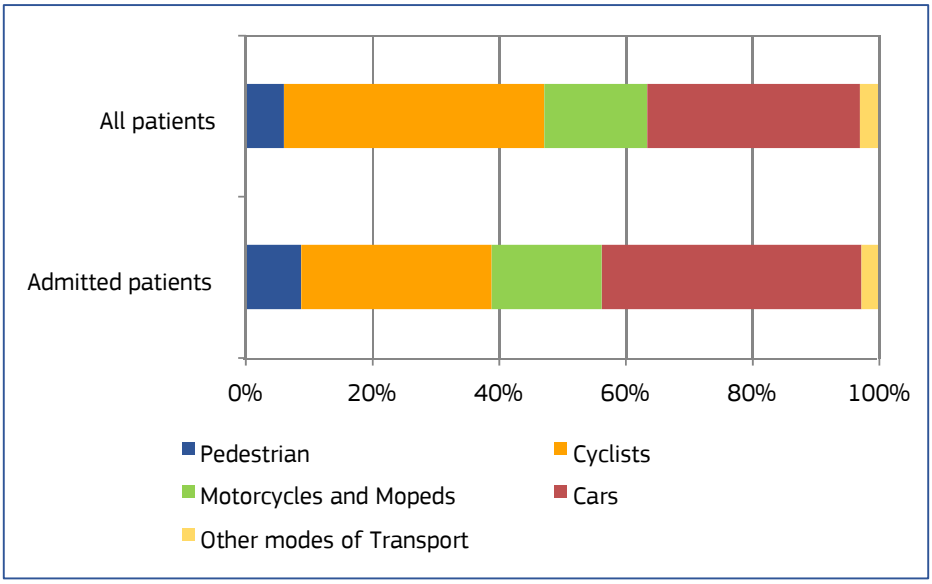
By 2012, thirteen member states routinely collected data in a sample of hospitals and contributed them to the EU injury Database.

Injury data can be obtained from a wide range of sources, such as police and ambulance reports, national insurance schemes, and hospital records, each of which provides a specific but yet incomplete picture of the injuries suffered in road accidents. In order to obtain a comprehensive view of these injuries, the EU Council issued a Recommendation that urges member states to use synergies between existing data sources and to develop national injury surveillance systems rooted in the health sector.[3]At present, thirteen member states are routinely collecting injury data in a sample of hospitals and delivering these data to the Commission. This system is called the EU Injury Database (EU IDB).[4]

Within the EU IDB "transport module" injuries suffered in road accidents are recorded by "mode of transport", "role of injured person" and "counterpart". These variables can complement information from police records, in particular for injury patterns and the improved assessment of injury severity. The indicators used include the percentage of casualties attending hospital who are admitted to hospital, the mean length of stay of hospital admissions, the nature and type of body part injured, and potentially also long term consequences of injuries.

According to estimates based on the EU IDB more than four million people are injured annually in road traffic accidents, one million of whom have to be admitted to hospital.

Figure 11: Distribution of non-fatal road accident casualties attending hospital, by mode of transport



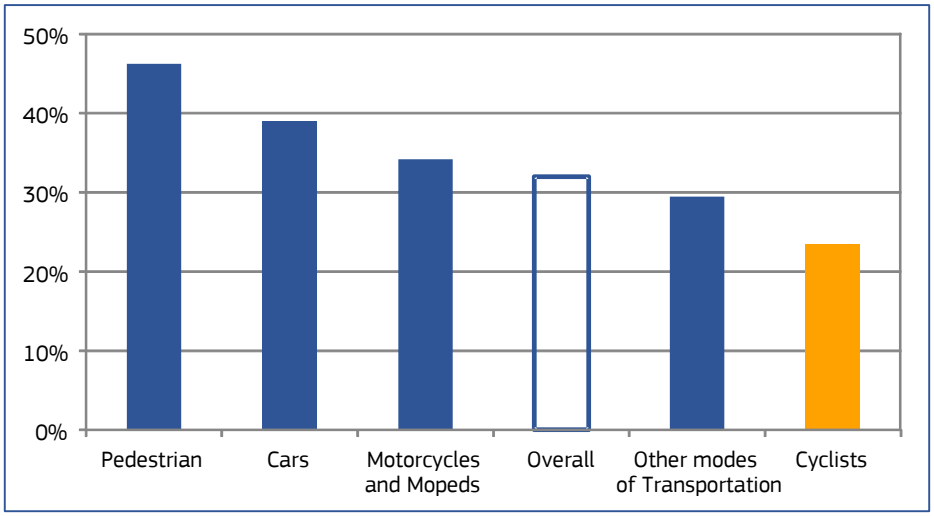
EU Injury Database (EU IDB AI) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n-all = 73 600: n-admitted = 23.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

[3]OJ C 164/1, 18.7.2007
[4]https://webgate.ec.europa.eu/sanco/heidi/index.php/IDB

Figure 11 is based on IDB data from nine countries for accidents that occurred between 2005 and 2008. Vulnerable road users (pedestrians, cyclists, motorcycles and mopeds) accounted for almost two thirds (63%) of road accident casualties attending hospital, and for over half of casualties admitted to the hospital (56%).

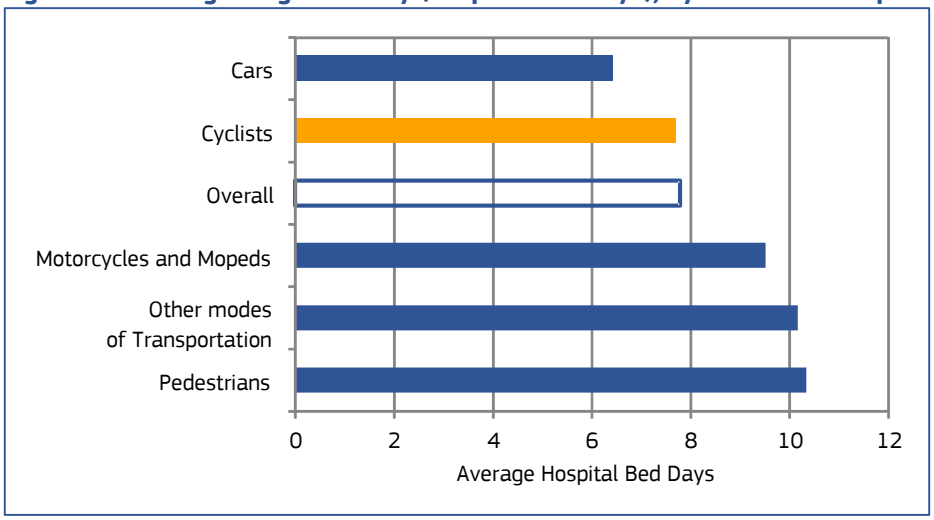
Figure 12 shows that 32% of road accident casualties recorded in the IDB were admitted to the hospital overall, and 23% for cyclists. Figure 12 shows that the average length of stay was eight days, for cyclists and overall.

Figure 12: Share of casualties who attended a hospital who were admitted to hospital, by mode of transport



EU Injury Database (EU IDB AI) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n-all = 73 600: n-admitted = 23.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

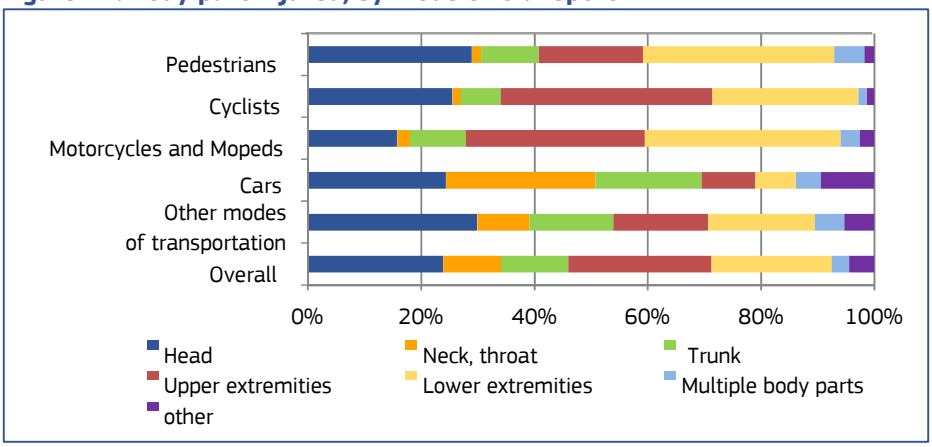
Figure 13: Average length of stay (hospital bed days), by mode of transport



EU Injury Database (EU IDB AI) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n-all = 73 600: n-admitted = 23.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

About 25% of the cyclists casualties who attended a hospital were admitted to the hospital; their average stay in hospital was almost eight days.

Figure 14: Body part injured, by mode of transport



EU Injury Database (EU IDB AI) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n-all = 73 600: n-admitted = 23.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

Fractures, contusions and bruises account for almost two thirds of all injuries inflicted on cyclist casualties attending hospital.

Naturally, hospital data can provide information on the injury patterns sustained by the accident victims. Figure 15 illustrates the distribution of body parts injured of the various road user types. Cyclists, for example, show a high proportion of injuries of the upper extremities.

Table 11 shows the types of injuries most frequently recorded in the EU IDB. It compares the distribution of injuries among cyclists and all types of road users.

Table 11: Top ten types of injury in cyclists and all modes of transport

Type of injury	Cyclists	All modes of Transport
Contusion, bruise	31%	34%
Fracture	34%	27%
Open wound	13%	10%
Distortion, sprain	6%	8%
Concussion	6%	7%
Other specified brain injury	2%	2%
Luxation, dislocation	3%	2%
Injury to muscle and tendon	1%	2%
Abrasion	1%	1%
Injury to internal organs	0%	1%
Other specified types of injury	3%	6%
Total	**100%**	**100%**

EU Injury Database (EU IDB AI) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n-all = 73 600: n-admitted = 23.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

Notes

1. Country abbreviations

Belgium	BE	Italy	IT	Romania	RO
Bulgaria	BG	Cyprus	CY	Slovenia	SI
Czech Republic	CZ	Latvia	LV	Slovakia	SK
Denmark	DK	Lithuania	LT	Finland	FI
Germany	DE	Luxembourg	LU	Sweden	SE
Estonia	EE	Hungary	HU	United Kingdom	UK
Ireland	IE	Malta	MT		
Greece	EL	Netherlands	NL	Iceland	IS
Spain	ES	Austria	AT	Liechtenstein	LI
France	FR	Poland	PL	Norway	NO
Croatia	HR	Portugal	PT	Switzerland	CH

2. Sources: CARE (Community database on road accidents)
The full glossary of definitions of variables used in this Report is available at:
http://ec.europa.eu/transport/road_safety/pdf/statistics/cadas_glossary.pdf

3. Data available in May 2018.

4. Data refer to 2016 and when not available the latest available data are used (2010 data for SK, 2014 data for IE and 2015 data for BG, EE and LT). Totals and related average percentages for EU also include latest available data.

5. Data for Lithuania and Slovakia are not included in the totals for the years 2007-2016.

6. At the commenting of the tables and figures, countries with small figures are omitted.

7. This 2018 edition of Traffic Safety Basic Facts updates the previous versions produced within the EU co-funded research projects SafetyNet and DaCoTA.

8. Disclaimer
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9. Please refer to this Report as follows:
European Commission, Traffic Safety Basic Facts on Cyclists, European Commission, Directorate General for Transport, June 2018.


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