European Commission

European Road Safety Observatory
www.erso.eu

Traffic Safety Basic Facts 2018

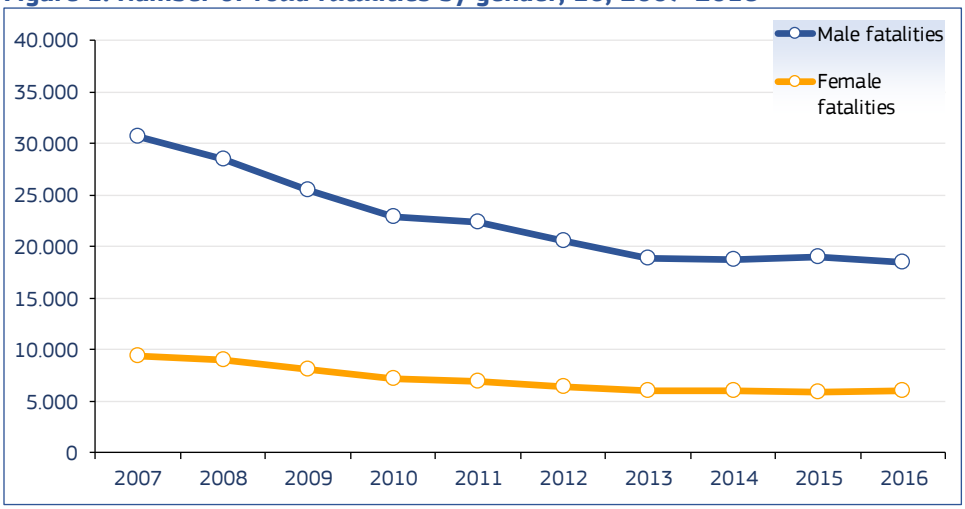
Gender

Transport

General

In 2016, more than 25.600 people were killed in road accidents throughout the EU, a reduction of 41% since 2007 total, with male fatalities having been reduced by 40% and female fatalities by 37% over the same period. There are also many gender-related differences in individual countries.

Figure 1: Number of road fatalities by gender, EU, 2007-2016



Source: CARE database, data available in May 2018

The number of people killed in road accidents in the EU decreased between 2007 and 2016 by 40% for males and by 37% for females.

Table 1 shows the reduction (in percent) of male and female road fatalities for the year 2016 compared to 2007 for the EU countries. The highest reductions for female fatalities are found in Latvia (65%), Croatia (59%), Hungary (54%) and Slovenia (53%). For male fatalities, the highest reductions were recorded in Latvia (61%) and Slovenia (56%).

The highest difference between the female and male reduction was in Finland (50% compared to 25%), while Luxembourg was the only country which experienced an increase in female fatalities.

It should be noted that data for "unknown" gender are not included in Table 1.

Table 1: Number and reduction of fatalities by country and gender, 2007 and 2016

	2007		2016		Change	
	Female	Male	Female	Male	Female	Male
BE	215	850	146	481	-32%	-43%
BG	-	-	-	-	-	-
CZ	275	946	146	451	-47%	-52%
DK	105	300	58	153	-45%	-49%
DE	1.309	3.638	864	2.342	-34%	-36%
EE	45	147	-	-	-	-
IE	85	250	-	-	-	-
EL	338	1.268	168	656	-50%	-48%
ES	823	2.985	410	1.395	-50%	-53%
FR	1.118	3.502	836	2.635	-25%	-25%
HR	157	505	64	243	-59%	-52%
IT	1.005	4.126	664	2.619	-34%	-37%
CY	14	75	10	36	-29%	-52%
LV	100	317	35	123	-65%	-61%
LT	-	-	74	165	-	-
LU	7	38	11	21	57%	-45%
HU	314	916	145	461	-54%	-50%
MT	1	11	6	17	-	55%
NL	192	517	148	385	-23%	-26%
AT	161	530	119	313	-26%	-41%
PL	1.333	4.241	757	2.269	-43%	-46%
PT	188	779	128	435	-32%	-44%
RO	740	2.060	508	1.405	-31%	-32%
SI	59	232	28	102	-53%	-56%
SK	156	505	-	-	-	-
FI	101	279	50	208	-50%	-25%
SE	127	344	65	205	-49%	-40%
UK	752	2.307	484	1.376	-36%	-40%
EU	**9.407**	**30.657**	**5.931**	**18.508**	**-37%**	**-40%**
IS	2	13	5	13	150%	0%
NO	70	163	24	111	-66%	-32%
CH	82	302	65	151	-21%	-50%

Source: CARE database, data available in May 2018
Totals for EU include latest available data (Data for Bulgaria, Lithuania and Slovakia not included in totals)

The highest difference between the female and male fatality reduction was noted in Finland.

Table 2: Fatality rates per million population and reduction by country and gender, 2007 and 2016 or latest available year

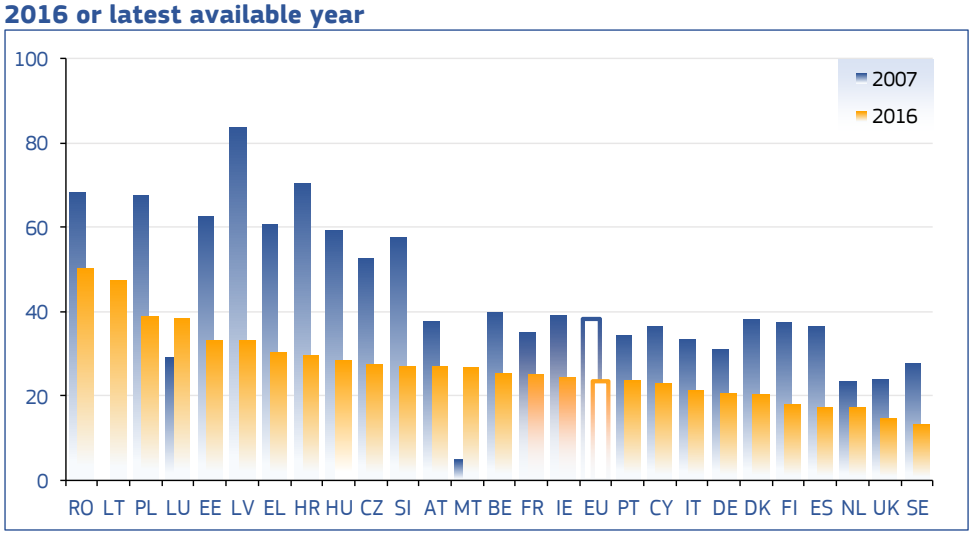
	2007		2016		Change	
	Female	Male	Female	Male	Female	Male
BE	39,8	164,0	25,4	86,4	-36%	-47%
BG	-	-	-	-	-	-
CZ	52,4	188,8	27,2	87,0	-48%	-54%
DK	38,2	111,2	20,2	53,9	-47%	-52%
DE	31,2	90,3	20,7	57,8	-33%	-36%
EE	62,6	235,5	32,9	71,3	-47%	-70%
IE	39,2	115,1	24,3	56,9	-38%	-51%
EL	60,4	233,0	30,2	125,6	-50%	-46%
ES	36,3	134,9	17,3	61,2	-52%	-55%
FR	35,1	117,1	25,0	84,0	-29%	-28%
HR	70,2	243,2	29,5	120,1	-58%	-51%
IT	33,5	146,2	21,3	88,9	-36%	-39%
CY	36,2	201,9	23,0	87,2	-37%	-57%
LV	83,7	312,7	32,9	136,0	-61%	-57%
LT	-	-	47,5	124,1	-	-
LU	29,1	161,2	38,3	72,6	32%	-55%
HU	59,4	191,7	28,2	98,3	-53%	-49%
MT	4,9	54,6	26,8	75,1	-	38%
NL	23,2	63,9	17,3	45,7	-26%	-28%
AT	37,9	131,5	26,9	73,3	-29%	-44%
PL	67,7	230,2	38,6	123,5	-43%	-46%
PT	34,4	153,7	23,5	88,7	-32%	-42%
RO	68,3	200,2	50,2	145,6	-26%	-27%
SI	57,7	235,1	26,9	99,7	-53%	-58%
SK	56,5	193,4	-	-	-	-
FI	37,5	108,0	17,9	77,0	-52%	-29%
SE	27,7	76,0	13,2	41,6	-52%	-45%
UK	24,1	77,2	14,6	42,7	-39%	-45%
EU	**38,2**	**130,9**	**23,5**	**76,8**	**-38%**	**-41%**
IS	13,2	83,0	30,3	77,7	129%	-6%
NO	29,7	70,1	9,3	42,3	-69%	-40%
CH	21,4	82,1	15,5	36,6	-28%	-55%

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

Latvia had the highest reduction of road fatalities per million population for females (61%), while Estonia had the highest reduction for males (70%).

Figures 2a and 2b show the change in the rate of fatalities per million population in each EU country between 2007 and 2016.

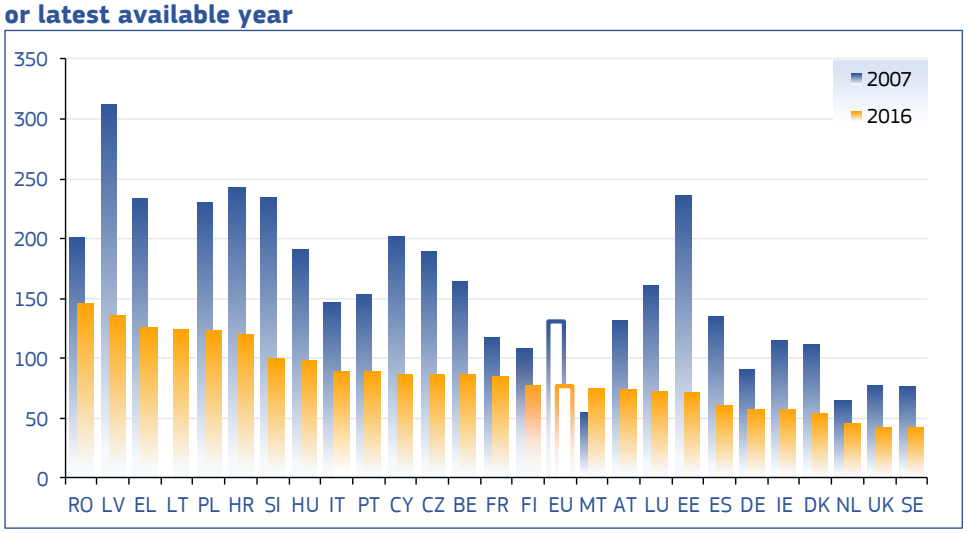
Figure 2a: Female fatality rates per million population by country, 2007 and 2016 or latest available year



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

Fatality rates decreased between 2007 and 2016 for males and females in almost all EU countries.

Figure 2b: Male fatality rates per million population by country, 2007 and 2016 or latest available year



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

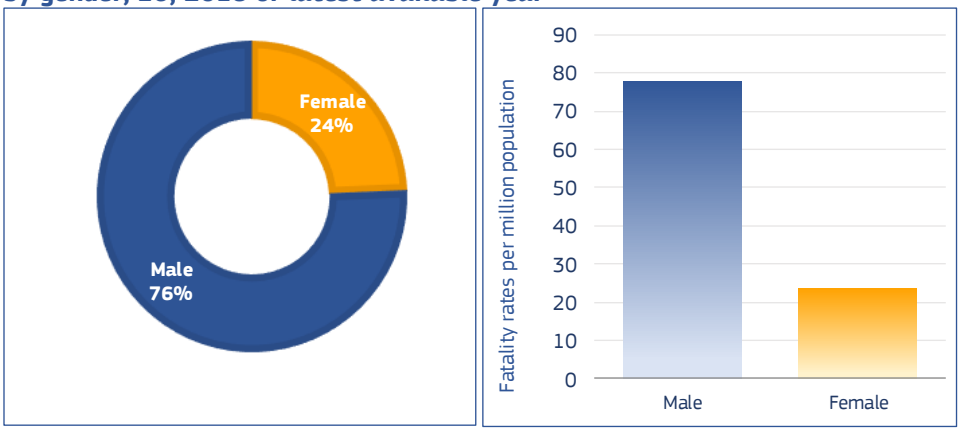
In the following tables and figures, the CARE data for 2016 are analysed in greater detail. It should be noted that the latest available data are used, meaning 2010 data for SK, 2014 data for IE and 2015 data for BG, EE and LT.

The relationship between male and female fatalities

Beside the trends presented above over the last ten years, one fact is obvious from the tables: far more males than females are killed in road accidents. Figure 3 shows the clear difference between the male and female fatality rates: less than one quarter of all fatalities are female fatalities.

The road fatality rate of males in 2016 was more than three times the respective female rate.

Figure 3: Distribution of road fatalities and fatality rates per million population by gender, EU, 2016 or latest available year

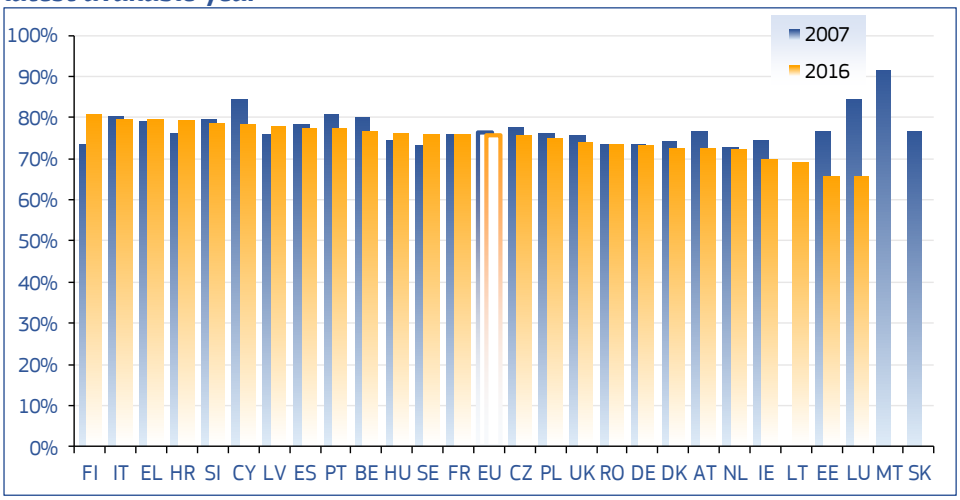


Sources: CARE database (EUROSTAT for population data), data available in May 2018

Figure 4 shows that the high proportion of fatalities who were male on average in the EU did not change between 2007 and 2016. Finland had the highest male percentage in Europe in 2016 (81%), followed by Italy and Greece (80%). The highest increase in male fatalities was noted in Finland (from 73% in 2007 to 81% in 2016), followed by Croatia (from 76% to 79%) and Sweden (from 73% to 76%). On the other hand, the highest decrease occurred in Estonia (from 77% in 2007 to 66% in 2016).

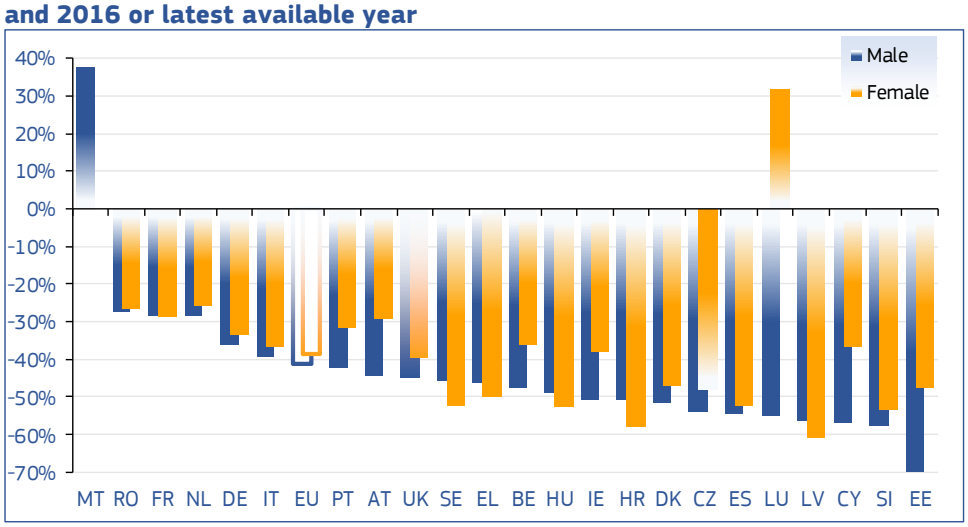
The percentage of male road fatalities in the EU did not change significantly between 2007 and 2016.

Figure 4: Percentage of male road fatalities by country, 2007 and 2016 or latest available year



Source: CARE database, data available in May 2018

Figure 5: Percentage increase of road fatalities by country and gender, EU, 2007 and 2016 or latest available year



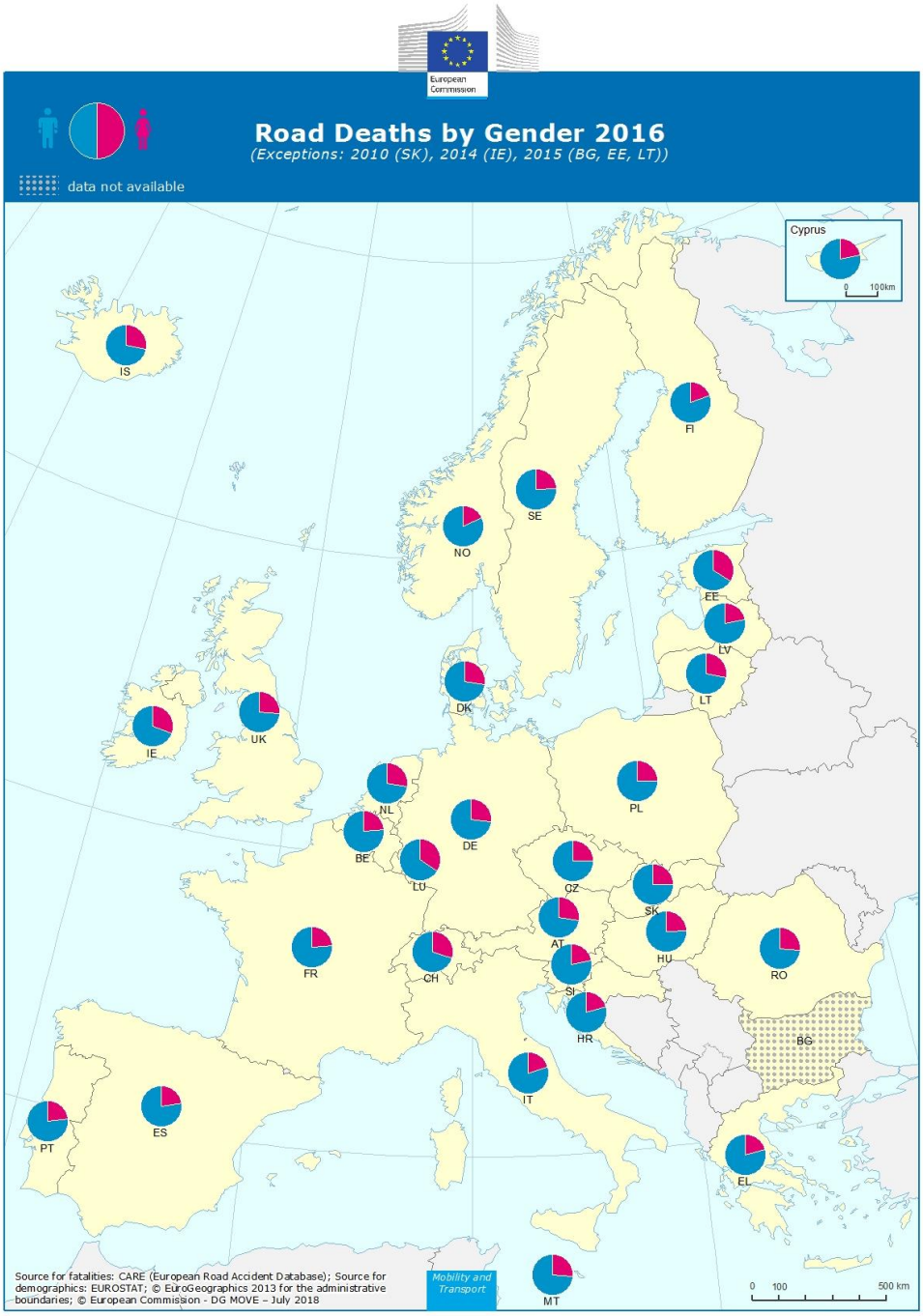
Source: CARE database, data available in May 2018

In more than half of the countries the male road fatality reduction between 2007 and 2016 was higher than the EU average.

Map 1 shows a geographical representation of the ratios between the male and female road fatality counts. There is a slight tendency for male percentages to be higher in the South, with the highest male ratios being recorded in Italy, Greece and Croatia.

The highest male fatality percentages in 2016 were recorded in Finland, Italy and Greece.

Map 1: Distribution of road fatalities by country and gender, 2016 or latest available year

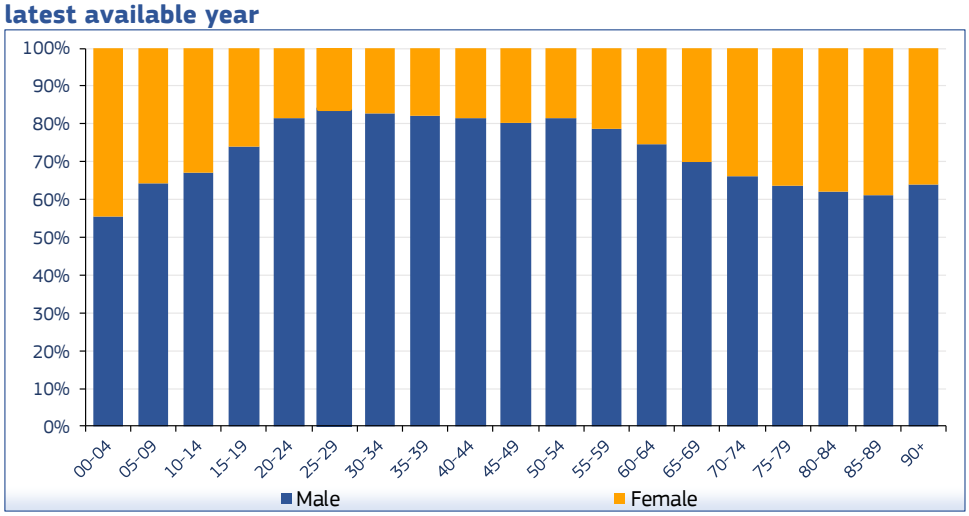


Age group

The ratio between male and female fatalities increases with age and reaches a peak for the age group 25-29 years when 84% of fatally injured were male. It then falls among older age groups. Figure 6 shows that more than four fifths of fatalities of 20-54 aged were men: over all ages, about 76% of fatally injured were males. This reflects a specific gender development in the travel behaviour of males and females in Europe, beginning from the age of 15 years.

The peak in the percentage of male fatalities occurred in the 25–29 age group (84%).

Figure 6: Distribution of road fatalities by gender and age group, EU, 2016 or latest available year

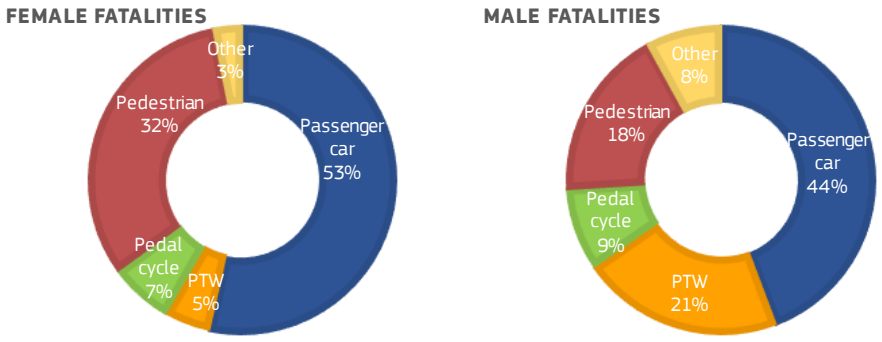


Source: CARE database, data available in May 2018

Mode of Transport and Road User Type

The distribution of male and female fatalities by road user type also differs (see Figure 7). In 2016, proportionately more females than males were killed in passenger cars, whereas proportionately far more males than females were killed riding motorcycles. The proportion of fatalities who were pedestrians was much higher for females compared to males (32% vs. 18%).

Figure 7: Distribution of road fatalities by gender and mode of transport, EU, 2016 or latest available year

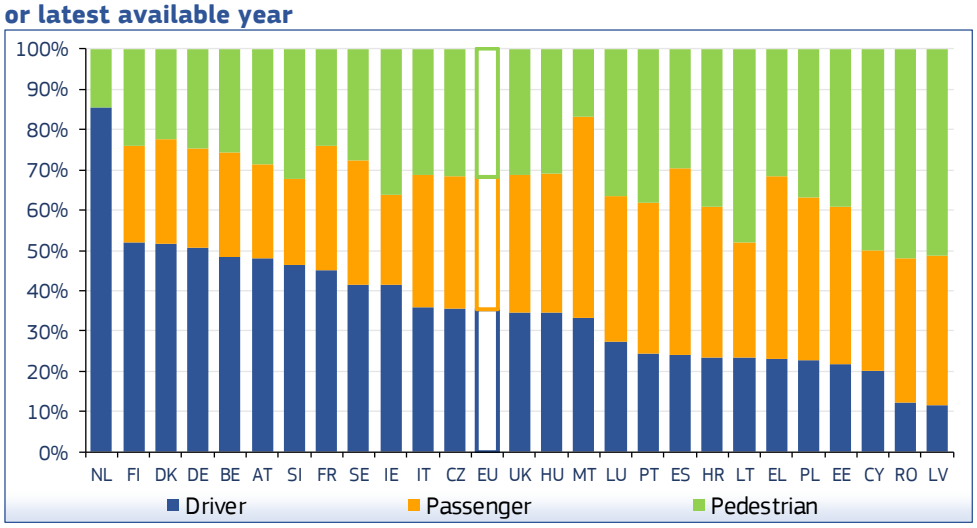


Source: CARE database, data available in May 2018

Detailed results by road user type for males and females are presented in Figures 8a, 8b and Table 3.

The percentage of passengers' fatalities or pedestrians is higher for females than for males.

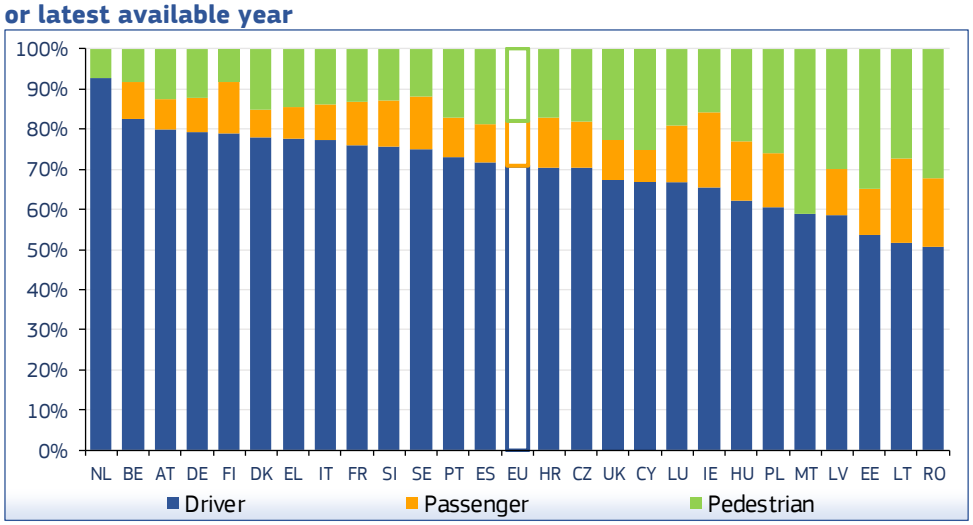
Figure 8a: Distribution of female fatalities by country and road user type, 2016 or latest available year



Source: CARE database, data available in May 2018

In 2016, only 35% of female fatalities in the EU were drivers, compared to 71% of males.

Figure 8b: Distribution of male fatalities by country and road user type, 2016 or latest available year



Source: CARE database, data available in May 2018

Table 3: Total number and distribution of male and female road fatalities by country and road user type, 2016 or latest available year

	Driver		Passenger		Pedestrian		Total	
	Female	Male	Female	Male	Female	Male	Female	Male
BE	48%	82%	26%	9%	26%	8%	146	481
BG	-	-	-	-	-	-	-	-
CZ	36%	70%	33%	12%	32%	18%	146	451
DK	52%	78%	26%	7%	22%	15%	58	153
DE	51%	79%	25%	9%	25%	12%	864	2.342
EE	22%	53%	39%	12%	39%	35%	-	-
IE	41%	65%	22%	19%	36%	16%	-	-
EL	23%	78%	45%	8%	32%	15%	168	656
ES	24%	72%	46%	9%	30%	19%	410	1.395
FR	45%	76%	31%	11%	24%	13%	836	2.635
HR	23%	70%	38%	12%	39%	17%	64	243
IT	36%	77%	33%	9%	31%	14%	664	2.619
CY	20%	67%	30%	8%	50%	25%	10	36
LV	11%	59%	37%	11%	51%	30%	35	123
LT	23%	52%	29%	21%	48%	27%	74	165
LU	27%	67%	36%	14%	36%	19%	11	21
HU	34%	62%	34%	15%	31%	23%	145	461
MT	33%	59%	50%	0%	17%	41%	6	17
NL	86%	93%	-	-	14%	7%	148	385
AT	48%	80%	24%	8%	29%	12%	119	313
PL	23%	60%	40%	14%	37%	26%	757	2.269
PT	24%	73%	38%	10%	38%	17%	128	435
RO	12%	51%	36%	17%	52%	32%	508	1.405
SI	46%	75%	21%	12%	32%	13%	28	102
SK	22%	54%	32%	16%	47%	30%	-	-
FI	52%	79%	24%	13%	24%	8%	50	208
SE	42%	75%	31%	13%	28%	12%	65	205
UK	35%	67%	34%	10%	31%	23%	484	1.376
EU	**35%**	**71%**	**33%**	**11%**	**32%**	**18%**	**5.931**	**18.508**
IS	60%	77%	40%	8%	0%	15%	5	13
NO	54%	79%	29%	11%	17%	10%	24	111
CH	43%	77%	22%	5%	35%	18%	65	151

Source: CARE database, data available in May 2018

Fatally injured males who were drivers were close to 80% in Belgium, Austria and Finland in 2016.

The percentage of fatalities who were drivers is higher for males than for females. The male proportion exceeds 80% in Belgium, whereas the highest female percentage was found in Denmark and Finland (52%). It is noted that the Netherlands have a high number of fatalities of unkown road user type. Female percentages as passengers or pedestrians are higher than male proportions in all countries.

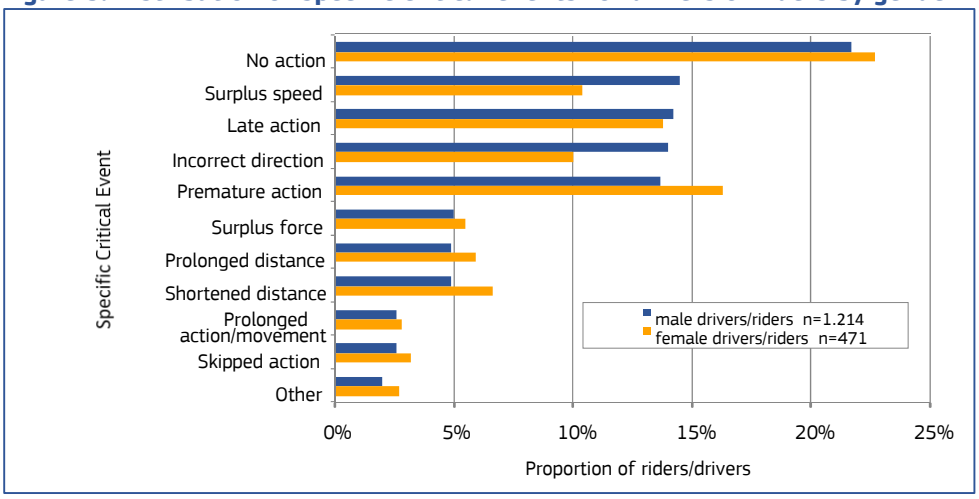
Accident Causation

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. 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, 71% of the drivers or riders are male and 28% are female (1% are unknown). The male mean age is 41 years old; 62% are car drivers, 12% powered two wheeler riders and 11% HGV drivers. The female mean age is 40 years old; 82% are car drivers and 10% bicycle riders. Figure 9 compares the distribution of specific critical events for male drivers/riders to the distribution for females.

'Surplus speed' and 'incorrect direction' are recorded more frequently for male drivers/riders than females.

Figure 9: Distribution of specific critical events for drivers or riders by gender



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

The main differences for the most frequently recorded specific critical events are that surplus speed and incorrect direction (includes going off the road instead of following the lane) are recorded more frequently for male drivers/riders and premature action is recorded more frequently for female drivers/riders.

Table 4 gives the most frequent links between causes for male drivers/riders. For this group there are 1.378 such links in total.

Table 4: Ten most frequent links between causes – male drivers/riders

Links between causes	Frequency
Faulty diagnosis - Information failure (between driver and traffic environment or driver and vehicle)	232
Observation missed - Temporary obstruction to view	83
Observation missed - Distraction	78
Inadequate plan - Insufficient knowledge	75
Observation missed - Faulty diagnosis	72
Faulty diagnosis - Communication failure	66
Observation missed - Permanent obstruction to view	62
Observation missed - Inadequate plan	56
Observation missed - Inattention	56
Inadequate plan - Under the influence of substances	43
Others	555
Total	**1.378**

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

Table 4 gives both an indication of the most frequently recorded causes and the most frequently recorded links between them. Faulty diagnosis and observation missed are the two dominant causes for this group. Faulty diagnosis is linked to both information and communication failure and the causes leading to observation missed can be seen to fall into two groups, physical 'obstruction to view' type causes and driver/rider functional failures.

22% of the links for male drivers and riders between causes are observed to be between 'faulty diagnosis' and 'information failure'.

Inadequate plan can also be seen to be frequently recorded, most often with a link to insufficient knowledge but also linked with under the influence of substances.

As expected, with male drivers being such a high proportion of the database, the links between causes are similar to the results for car drivers overall.

Table 5 gives the most frequent links between causes for female drivers/riders. For this group there are 522 such links in total.

Table 5: Ten most frequent links between causes – female drivers/riders

Links between causes	Frequency
Faulty diagnosis - Information failure (between driver and traffic environment or driver and vehicle)	91
Observation missed - Distraction	40
Observation missed - Temporary obstruction to view	33
Observation missed - Faulty diagnosis	31
Observation missed - Permanent obstruction to view	30
Inadequate plan - Insufficient knowledge	28
Faulty diagnosis - Communication failure	26
Observation missed - Inadequate plan	24
Observation missed - Inattention	18
Information failure (between driver and traffic environment or driver and vehicle) - State of road	13
Others	188
Total	**522**

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

The causal links for female drivers/riders are very similar to those for male drivers/riders, although, as Figure 9 shows, they do not always lead to the same critical events.

Looking at the ten most frequent links between causes for females, under the influence of substances does not feature (as with the male group), but state of the road can be seen (current road-holding characteristics) leading to information failure.

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

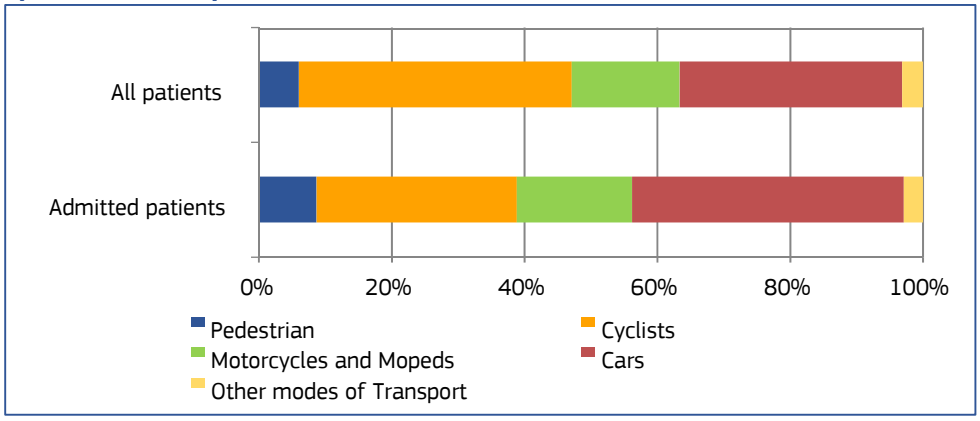
Road accident health indicators

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. 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).

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 accidents, one million of whom have to be admitted to hospital.

Figure 10: Distribution of non-fatal road accident casualties attending hospital by mode of transport

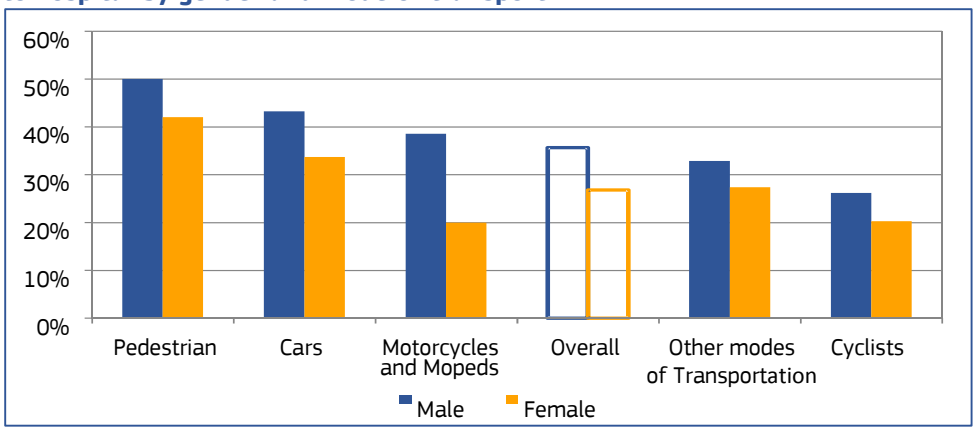


EU Injury Database (EU IDB AI) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n-all = 73.600: n-admitted = 23.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

Figure 10 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 11 shows that 36% of male road accident casualties recorded in the IDB were admitted to the hospital overall, and 27% for females. Figure 12 shows that the average length of stay for males was 8,0 days overall, and 7,4 for females.

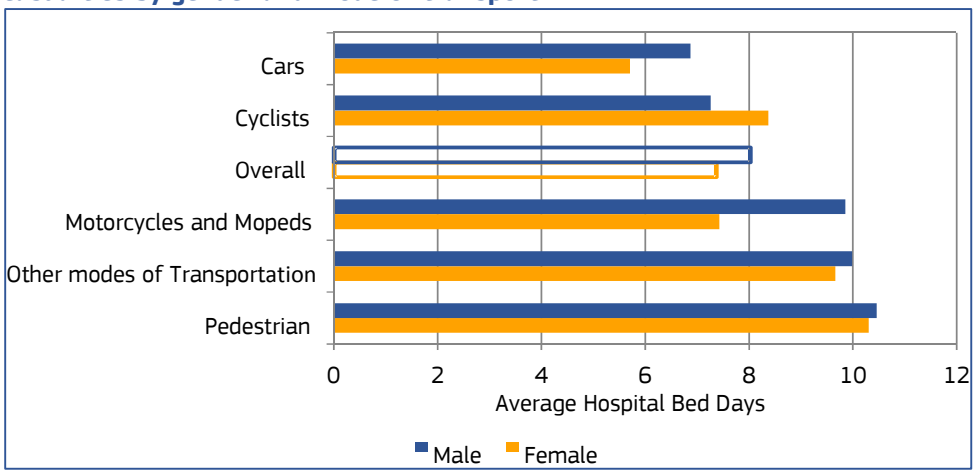
Figure 11: Percentage of non-fatal road accident casualties who were admitted to hospital by gender and mode of transport



Source: 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-male = 42.774, n-admitted = 23.568, n-male = 15.256 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

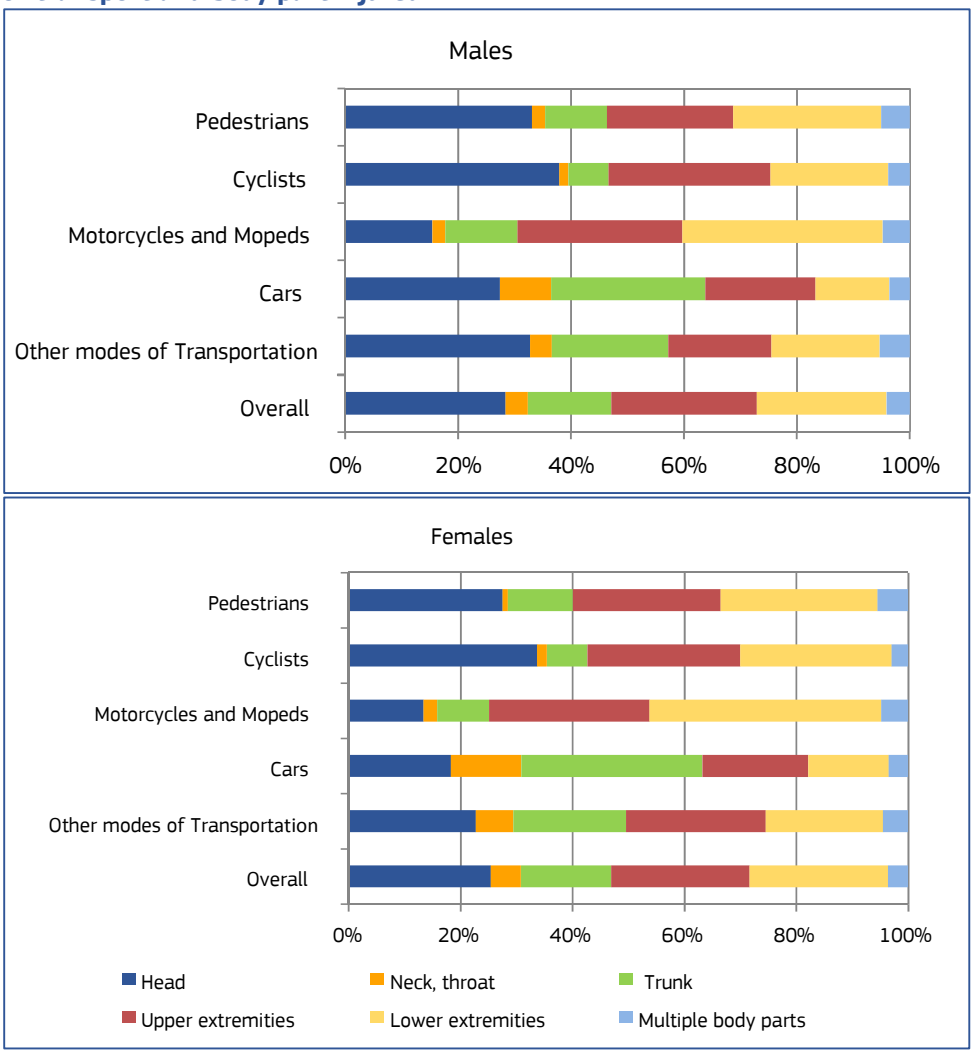
36% of male casualties who attended a hospital were admitted to the hospital – 27% of females; their average stay in hospital was eight days – about seven days for females.

Figure 12: Average length of stay (hospital bed days) of non-fatal road accident casualties by gender and mode of transport



Source: 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-male = 42.774, n-admitted = 23.568, n-male = 15.256 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).)

Figure 13: Distribution of non-fatal road accident casualties by gender, mode of transport and body part injured



Source: 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-male = 42.774, n-admitted = 23.568, n-male = 15.256 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

Injury patterns – body part injured and type of injury - differ only slightly between male and female road casualties, but injuries of males tend to be more severe, in terms of share of admissions and length of stay in hospital.

Naturally, hospital data can provide information on the injury patterns sustained by the accident victims. Figure 13 illustrates the distribution of body parts injured in male and female road casualties by type of road user.

Table 6 shows the top of the available types of injuries within the EU IDB. It compares the distribution of injuries among male and female casualties.

Table 6: Ten most frequently recorded types of injury by gender

	Male	Female	All
Contusion, bruise	31%	38%	34%
Fracture	28%	26%	27%
Open wound	11%	8%	10%
Distortion, sprain	7%	9%	8%
Concussion	8%	7%	7%
Other specified brain injury	2%	2%	2%
Luxation, dislocation	2%	1%	2%
Injury to muscle and tendon	1%	2%	2%
Abrasion	2%	1%	1%
Injury to internal organs	1%	1%	1%
Other specified types of injury	7%	6%	6%
Total	**100%**	**100%**	**100%**

Source: 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-male = 42.774, n-admitted = 23.568, n-male = 15.256 (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. At the commenting of the tables and figures, countries with small figures are omitted.

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

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

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