Traffic Safety Basic Facts 2012

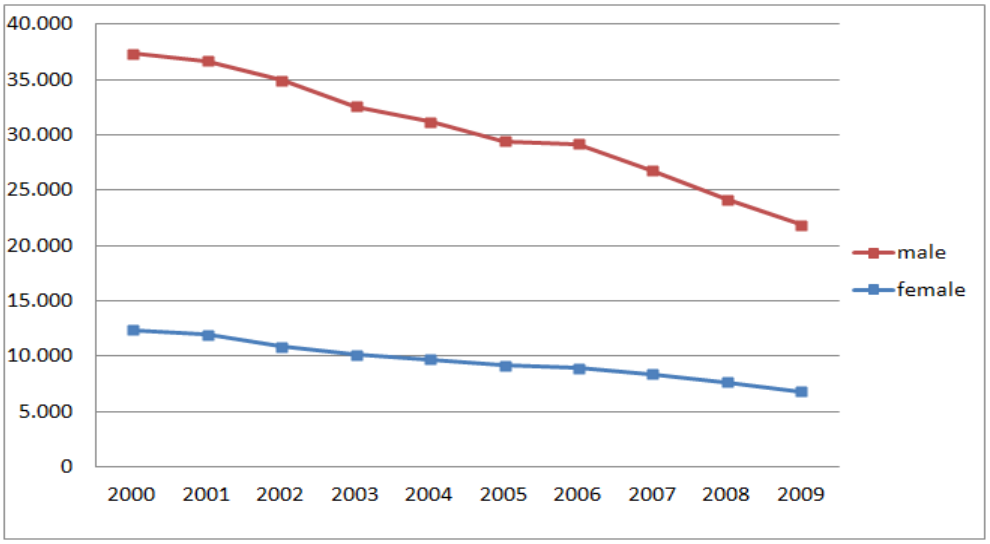
Gender

Trends in the last decade

In 2010[1], 28.759 people were killed in road traffic accidents throughout the EU-19, a reduction of more than 42% from the 2001 total of 49.859. There is little difference in this positive development by gender overall in the EU-19: the reduction is 45% for females and 41% for males. There are, however, many gender-related differences in individual countries.

The number of people killed in road accidents in the EU-19 decreased between 2001 and 2010 by 41% for males and 45% for females

Figure 1: Trend of fatalities in EU-19[2] by gender, 2001-2010[1],



Source: CARE Database
Date of Query: October 2012

As shown in Table 1, most countries show a greater reduction for females than for males. The highest reductions for female fatalities - over 50% - are found in Spain and Slovenia. On the other hand, marginal decrease is noted in Romania (1% for female and 4% for male fatalities). The biggest differences between the female and male reduction were in Slovenia with a much higher male reduction (54% compared to 33%) and Finland (female reduction of 50%, male reduction of 31%). In most of the countries female fatalities decreased more than male fatalities.

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

[1] Where a number is missing for a EU19/24 country in a particular year, its contribution to the EU-19/24 total is estimated as the most recent known value. For UK data is the sum of GB (2010) and NI (2009).
[2] The country abbreviations used and definition of EU-level are shown on Page 14

The reductions in most countries were greater for female fatalities than for male.

The biggest differences between the female and male fatalities reduction was noted in Slovenia.

Table 1: Fatalities in Europe by country, 2001-2010, by gender

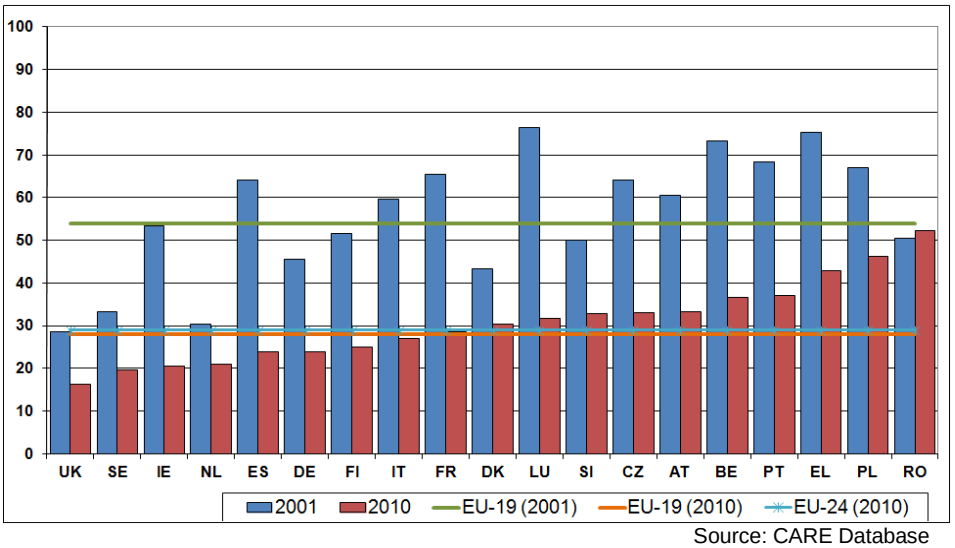
	gender	2001	2010	% difference
BE	female	384	203	-47%
	male	1.102	629	-43%
CZ	female	338	177	-48%
	male	995	607	-39%
DK	female	117	85	-27%
	male	314	170	-46%
DE	female	1.923	997	-48%
	male	5.052	2.651	-48%
IE	female	103	46	-55%
	male	304	161	-47%
EL	female	416	245	-41%
	male	1.458	1.013	-31%
ES	female	1.325	556	-58%
	male	4.123	1.917	-54%
FR	female	2.057	953	-54%
	male	6.103	3.039	-50%
IT	female	1.754	841	-52%
	male	5.342	3.249	-39%
LU	female	17	8	-53%
	male	52	24	-54%
NL	female	246	-	-
	male	743	-	-
AT	female	251	143	-43%
	male	707	409	-42%
PL	female	1.322	913	-31%
	male	4.202	2.977	-29%
PT	female	363	203	-44%
	male	1.306	734	-44%
RO	female	579	575	-1%
	male	1.871	1.802	-4%
SI	female	51	34	-33%
	male	227	104	-54%
FI	female	137	68	-50%
	male	296	204	-31%
SE	female	149	-	-
	male	433	-	-
UK	female	864	512	-41%
	male	2.728	1.453	-47%
EU-19	female	12.395	6.826	-
	male	37.359	21.878	-
EE	female	-	26	-
	male	-	71	-
LV	female	-	26	-
	male	-	121	-
HU	female	-	181	-
	male	-	555	-
MT	female	-	5	-
	male	-	8	-
SK	female	-	92	-
	male	-	279	-
EU-24	female	-	7.156	-
	male	-	22.912	-
CH	female	-	83	-
	male	-	244	-
IS	female	-	4	-
	male	-	4	-

Source: CARE Database
Date of Query: October 2012

Figure 1 and Figure 2 show the change in the rate of fatalities per million inhabitants in each EU-19 country between 2001 and 2010[1]. Only in Romania the rate increased over the decade.

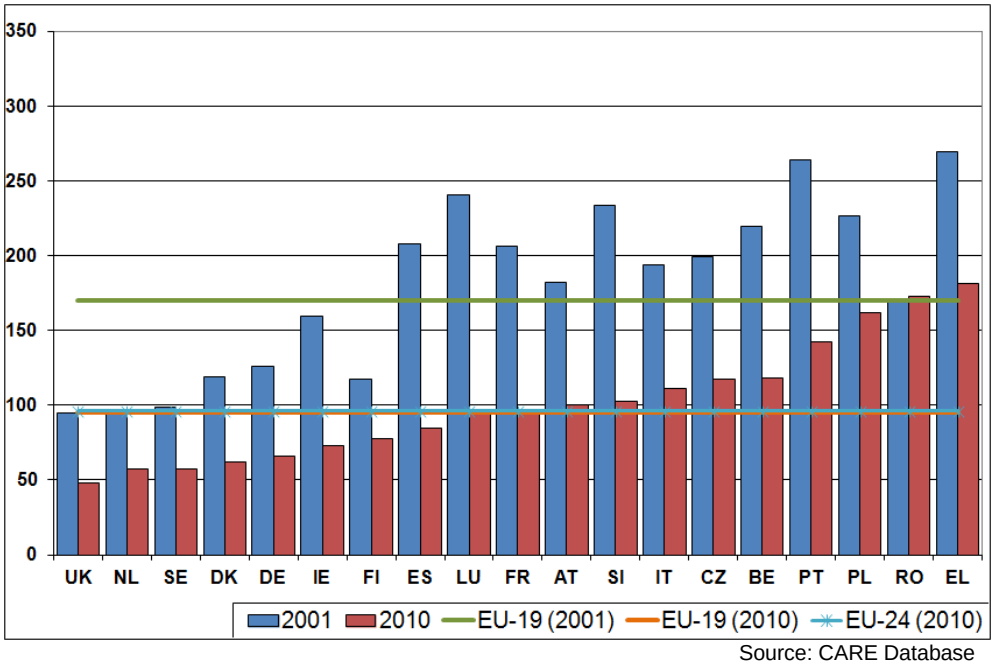
Fatality rates decreased between 2001 and 2010[1] for males and females in all EU-19 countries except Romania.

Figure 1: Female fatalities per million inhabitants by country, 2001 and 2010[1]



Source: CARE Database
Eurostat for population data
Date of Query: October 2012

Figure 2: Male fatalities per million inhabitants by country, 2001 and 2010[1]



Source: CARE Database
Eurostat for population data
Date of Query: October 2012

It should be noted that for the Netherlands and Sweden data refer to 2009 rather than 2010 and for the United Kingdom data is the sum of Great Britain (2010) and Northern Ireland (2009).

Table 2 shows the annual fatality rates per country for 2001 and 2010.

Table 2: Fatalities per million inhabitants by country, 2001-2010

	gender	2001	2010	% diferrence
BE	female	73	37	-50%
	male	220	118	-46%
CZ	female	64	33	-48%
	male	199	118	-41%
DK	female	43	30	-30%
	male	119	62	-48%
DE	female	46	24	-48%
	male	126	66	-47%
IE	female	53	20	-62%
	male	160	73	-54%
EL	female	75	43	-43%
	male	269	181	-33%
ES	female	64	24	-63%
	male	208	85	-59%
FR	female	66	29	-56%
	male	206	97	-53%
IT	female	60	27	-55%
	male	194	111	-43%
LU	female	39	16	-59%
	male	118	48	-60%
NL	female	30	-	-
	male	94	-	-
AT	female	61	33	-45%
	male	182	100	-45%
PL	female	67	46	-31%
	male	227	162	-29%
PT	female	68	37	-46%
	male	264	143	-46%
RO	female	50	52	3%
	male	171	172	1%
SI	female	50	33	-34%
	male	233	103	-56%
FI	female	52	25	-52%
	male	117	78	-34%
SE	female	33	20	-
	male	99	57	-
UK	female	29	16	-43%
	male	95	48	-50%
EU-19	female	54	28	-
	male	170	95	-
EE	female	-	36	-
	male	-	115	-
LV	female	-	21	-
	male	-	117	-
HU	female	-	34	-
	male	-	117	-
MT	female	-	24	-
	male	-	39	-
SK	female	-	33	-
	male	-	106	-
EU-24	female	-	29	-
	male	-	96	-
CH	female	-	21	-
	male	-	64	-
IS	female	-	25	-
	male	-	25	-

Source: CARE Database
Date of Query: October 2012

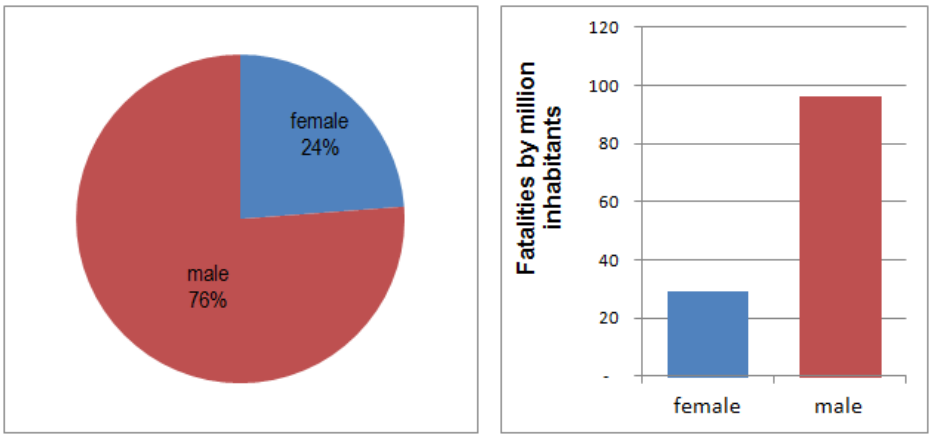
Spain has the greatest reduction of fatalities per million inhabitants (63% for females and 59% for males)

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 male fatality rate in 2010[1] was more than three times the respective female rate.

Figure 3: Fatalities and fatality rates by gender, EU-24, 2010[1]

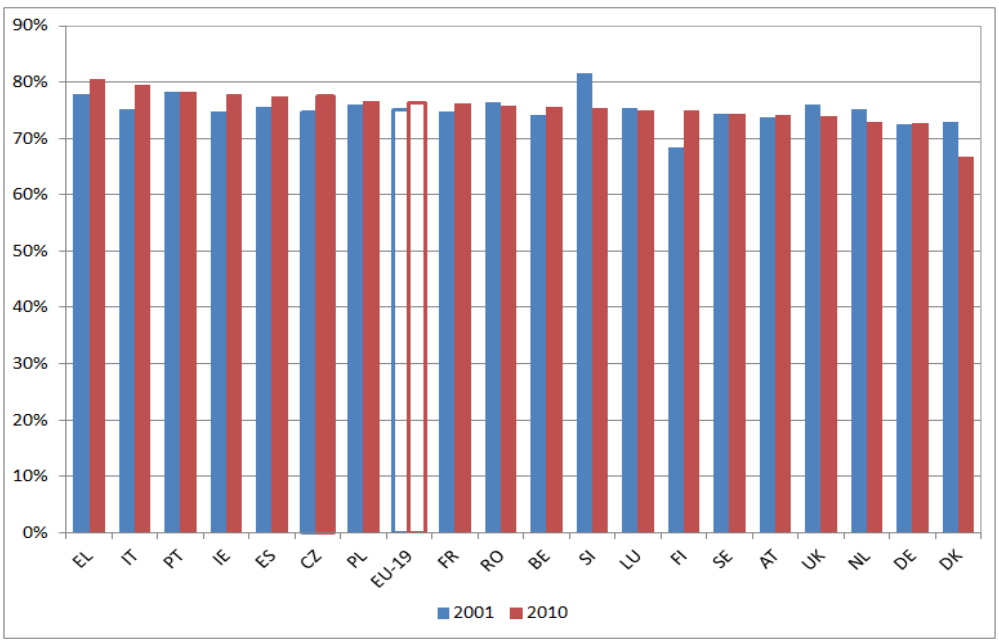


Source: CARE Database
Date of Query: October 2012

Figure 4 shows that the high proportion of fatalities who were male slightly increased in EU-19 within the last decade, from 75% to 76%. The highest increases were noted in Finland (from 68% in 2001 to 75% in 2010) and Italy (from 75% to 79%). Greece also had the highest male percentage in Europe in 2010. On the other hand, the highest decreases occurred in Slovenia (from 82% to 75%), Denmark, United Kingdom and the Netherlands.

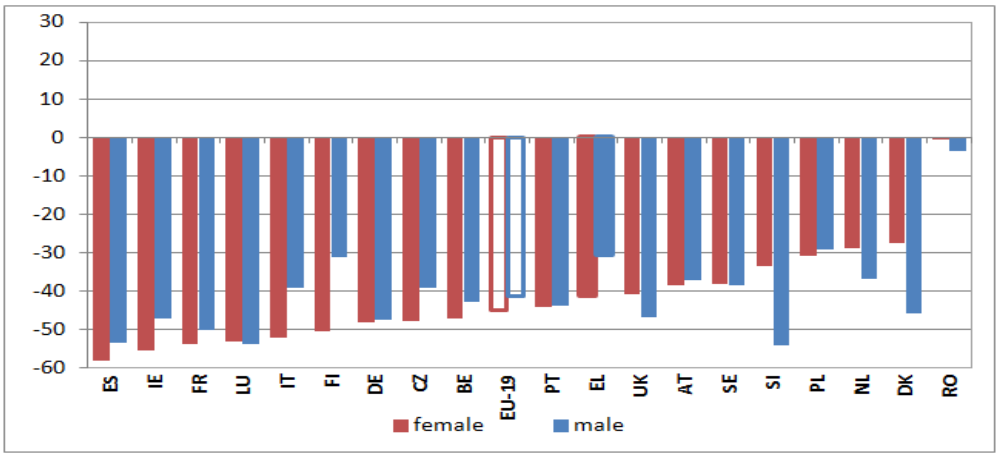
76% of all road accident fatalities in the EU-19 were male in 2010[1], compared with 75% in 2001

Figure 4: Percentage of fatalities who were male, EU-19, 2001 and 2010[1]



Source: CARE Database
Eurostat for population data
Date of Query: October 2012

Figure 5: Percentage increase of fatalities between 2001 and 2010[1], by gender, EU-19



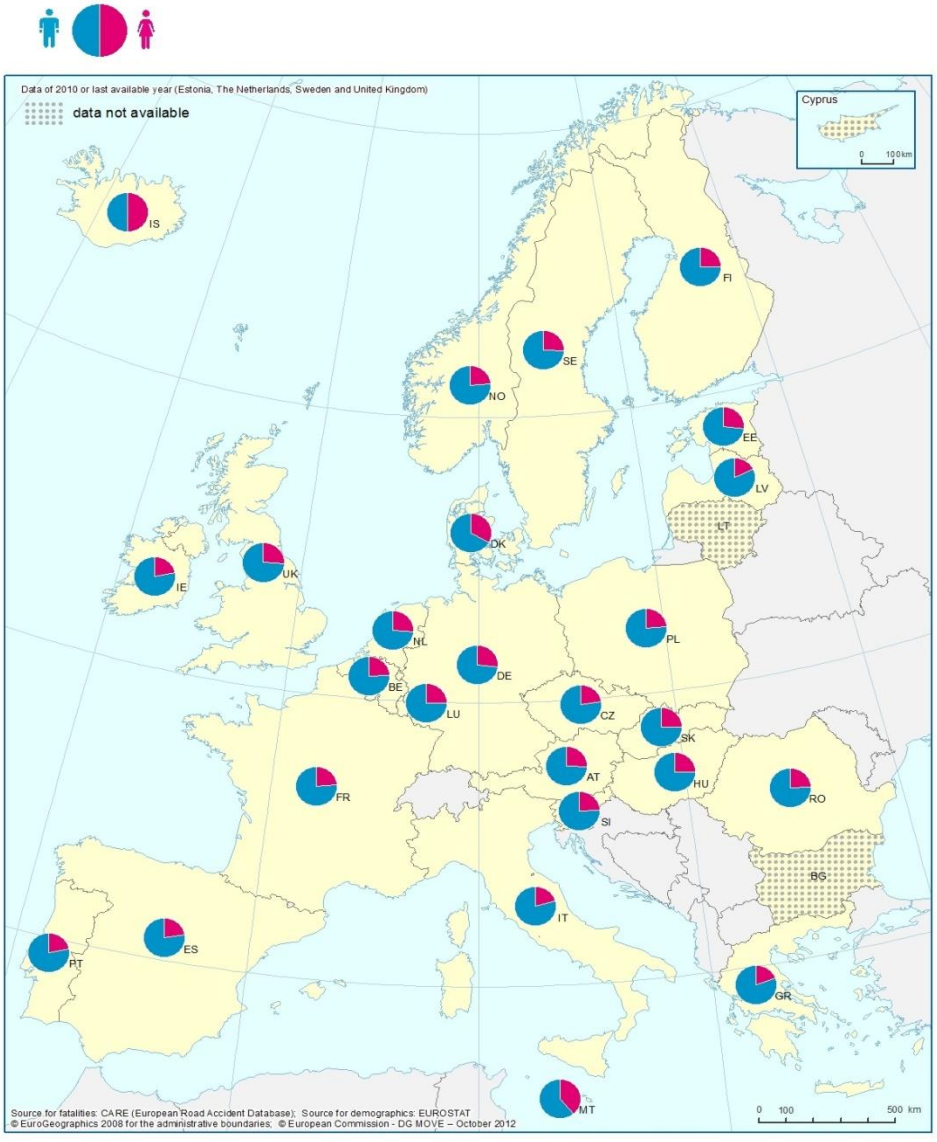
Source: CARE Database
Date of Query: October 2012

The highest male fatality proportions in 2010[1] were recorded in Slovenia and Spain

Map 1 shows a geographical representation of the ratios between the male and female fatality counts. There is a slight tendency for rates to be higher in the south, and the highest male ratios were recorded in Greece, Portugal, Italy and Latvia.

In half of the countries the female fatality reduction in the decade was lower that the EU-19 average

Map 1: The proportion of fatalities by gender, 2010[1]



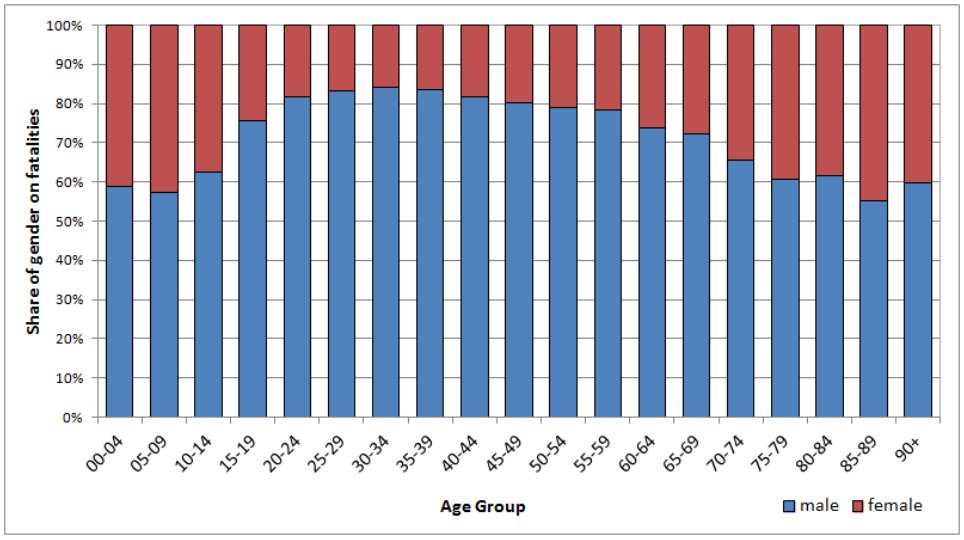
Source: CARE Database/EC

Age and Gender

The ratio between male and female fatalities increases with age and reaches the peak of 84% fatalities being male between the ages of 30 to 39. It then falls among older age groups. Figure 6 shows that about four fifths of fatalities aged 15-54 were men: over all ages, more than 76% of fatalities were male. This reflects a gender specific development in the travel behaviour of men and women in Europe, beginning from the age of 15 years.

The peak in the proportion of male fatalities occurs in the 30–39 age group (84%)

Figure 6: Distribution of fatalities by gender, by age group, EU-24, 2010[1]

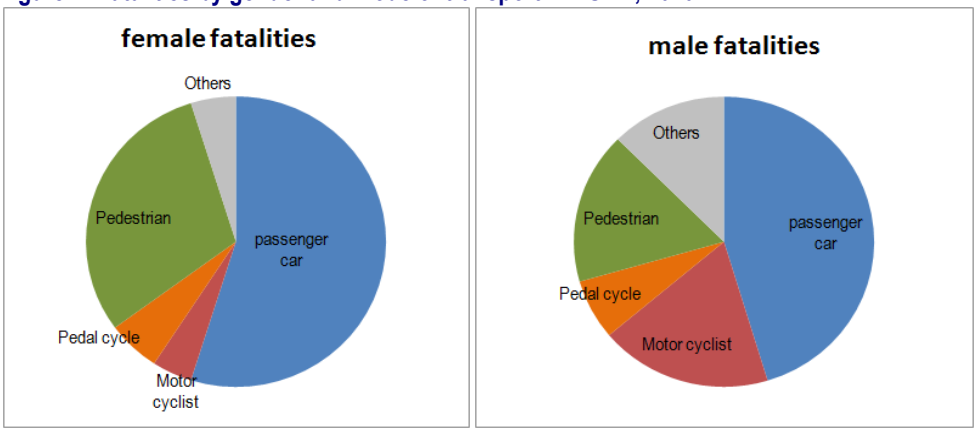


Source: CARE Database
Date of Query: October 2012

Mode of transport and Gender

The male and female distributions of fatalities by road user type also differ (see Figure 7). In 2010[1], proportionately more women than men were killed in passenger cars, whereas proportionately far more men than women were riding motorcycles. The proportion of fatalities who were pedestrians was almost twice as great for women as for men.

Figure 7: Fatalities by gender and mode of transport in EU-24, 2010[1]

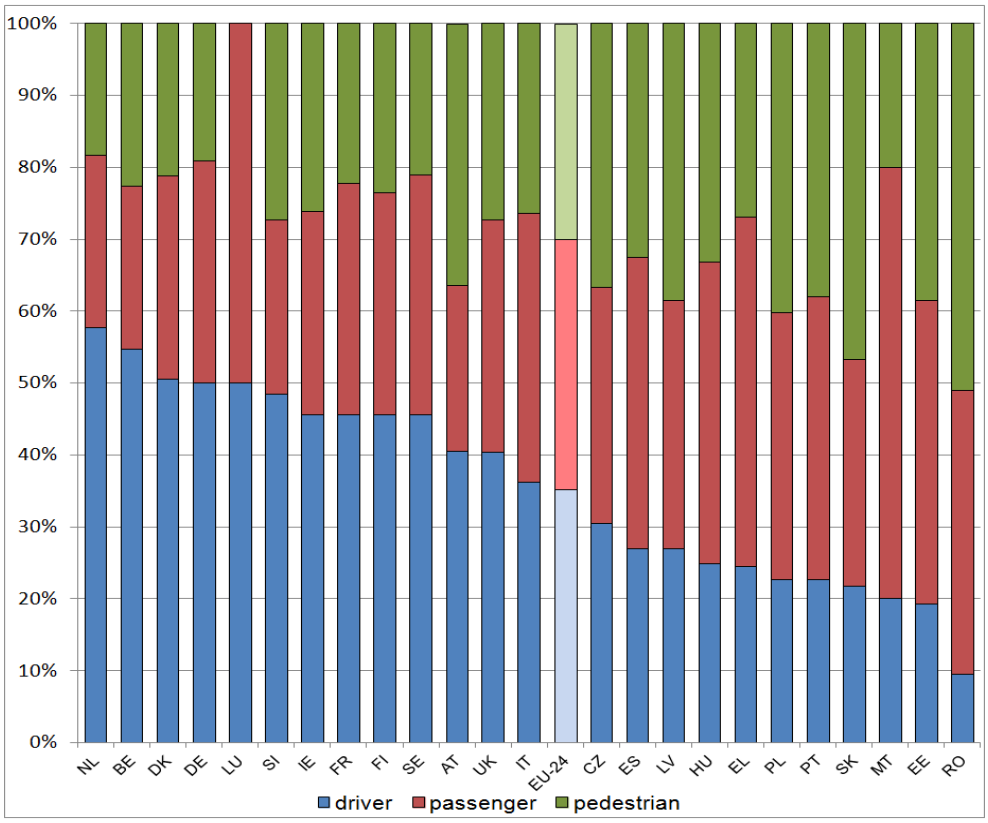


Source: CARE Database
Date of Query: October 2012

Detailed results by person class for males and females are presented in Figures 8, 9 and Table 3.

The proportion of fatalities as passengers or pedestrians is higher for females than for males

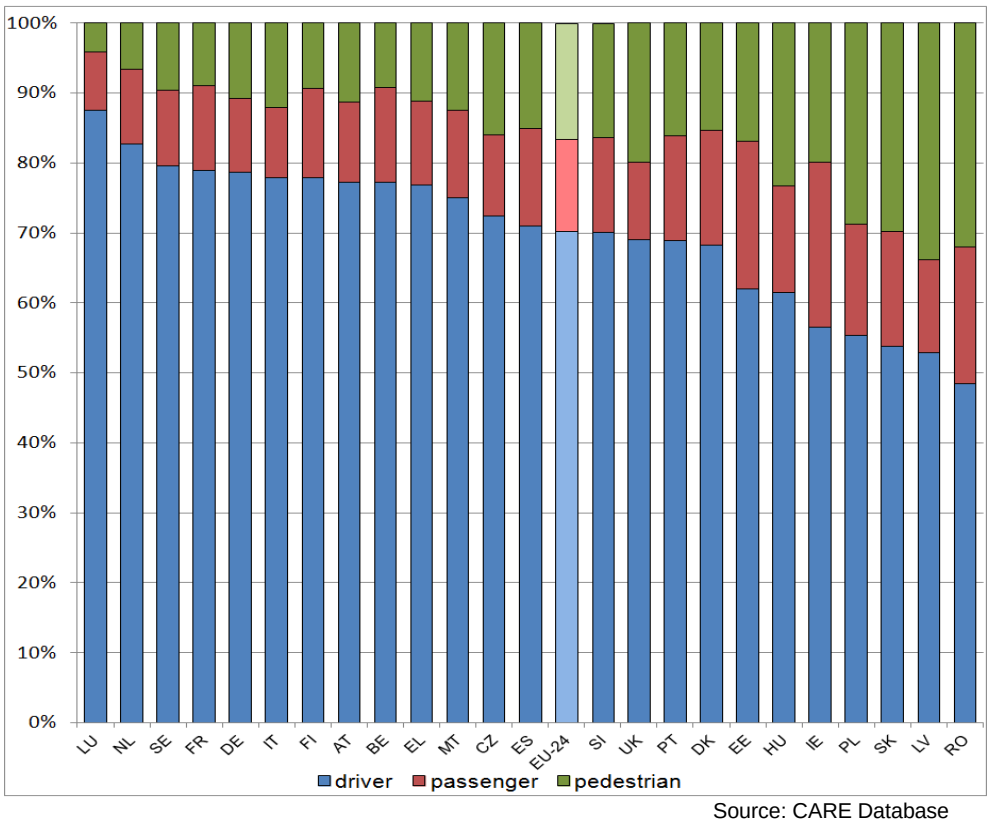
Figure 8: Percentage of female fatalities for person class, EU-24, 2010[1]



Source: CARE Database
Date of query: October 2012

In EU-24 only 35% of female fatalities were drivers, compared to 70% of males

Figure 9: Percentage of male fatalities for person class, EU-24, 2010[1]



Source: CARE Database
Date of query: October 2012

Table 3: Number of male and female fatalities by person class, EU-24, 2010[1]

Country	Gender	Driver	Passenger	Pedestrian	Total
BE	female	55%	23%	23%	203
	male	77%	14%	9%	627
CZ	female	31%	33%	37%	177
	male	72%	12%	16%	607
DK	female	51%	28%	21%	85
	male	68%	16%	15%	170
DE	female	50%	31%	19%	997
	male	79%	11%	11%	2.651
EE	female	19%	42%	38%	26
	male	62%	21%	17%	71
IE	female	46%	28%	26%	46
	male	57%	24%	20%	161
EL	female	24%	49%	27%	245
	male	77%	12%	11%	1.013
ES	female	27%	41%	32%	556
	male	71%	14%	15%	1.917
FR	female	46%	32%	22%	953
	male	79%	12%	9%	3.039
IT	female	36%	37%	26%	841
	male	78%	10%	12%	3.249
LV	female	27%	35%	38%	26
	male	53%	13%	34%	121
LU	female	50%	50%	0%	8
	male	88%	8%	4%	24
HU	female	25%	42%	33%	181
	male	61%	15%	23%	555
MT	female	20%	60%	20%	5
	male	75%	13%	13%	8
NL	female	58%	24%	18%	175
	male	83%	11%	7%	468
AT	female	41%	23%	36%	143
	male	77%	11%	11%	409
PL	female	23%	37%	40%	913
	male	55%	16%	29%	2.977
PT	female	23%	39%	38%	203
	male	69%	15%	16%	734
RO	female	10%	39%	51%	575
	male	48%	20%	32%	1.800
SI	female	48%	24%	27%	33
	male	70%	13%	16%	104
SK	female	22%	32%	47%	92
	male	54%	16%	30%	279
FI	female	46%	31%	24%	68
	male	78%	13%	9%	204
SE	female	46%	33%	21%	90
	male	80%	11%	10%	260
UK	female	40%	32%	27%	512
	male	69%	11%	20%	1.453
EU-24	female	35%	35%	30%	7.153
	male	70%	13%	17%	22.901
CH	female	36%	22%	42%	83
	male	74%	9%	16%	244
IS	female	25%	50%	25%	4
	male	75%	0%	25%	4

Source: CARE Database
Date of query: October 2012

The proportion of male fatalities who were drivers exceeded 80% in the Netherlands and Sweden in 2010[1]

The proportion of fatalities who were drivers is much higher for males than for females. The male proportion exceeds 80% in some countries, whereas the highest female proportion is 55% in Belgium - with the exception of the Netherlands (58%). Female proportions as passengers or pedestrians are higher than male proportions in all countries. For the EU-24, 35% of all female fatalities were passengers compared to 13% of males; 30% of all female fatalities were pedestrians compared to 17% of males.

ROAD ACCIDENT HEALTH INDICATORS

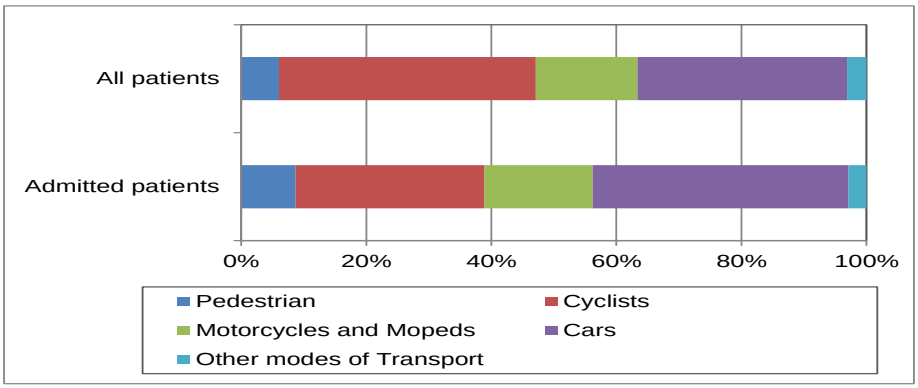
Injury data can be obtained from a wide range of sources, such as police and ambulance reports, national insurance schemes, and hospital records, each of which provides a specific but yet incomplete picture of the injuries suffered in road accidents. In order to obtain a comprehensive view of these injuries, 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.[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]

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

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 injuries annually in road traffic 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



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-admitted = 23 568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008

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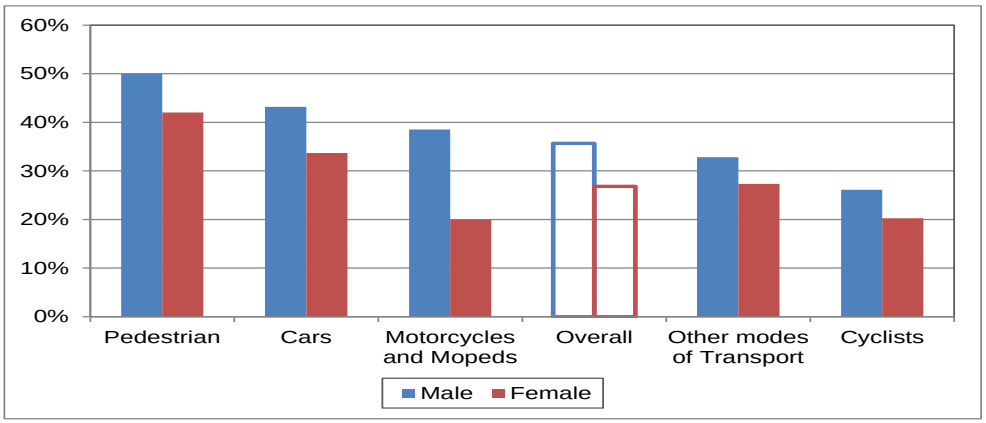
[3] OJ C 164/1, 18.7.2007
[4] https://webgate.ec.europa.eu/sanco/heidi/index.php/IDB

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.

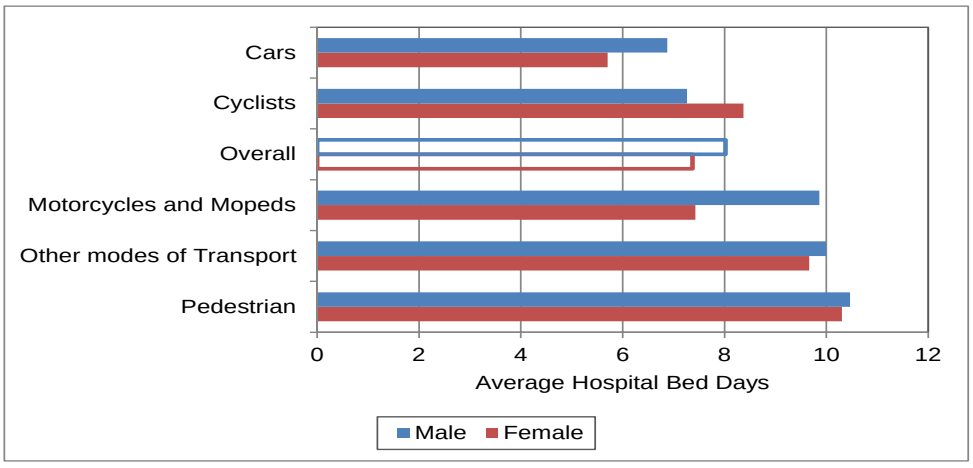
36% of male casualties who attended a hospital were admitted to the hospital – 27% of females; their average stay in hospital was eight days – about seven days for females.

Figure 11: Proportion of 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).

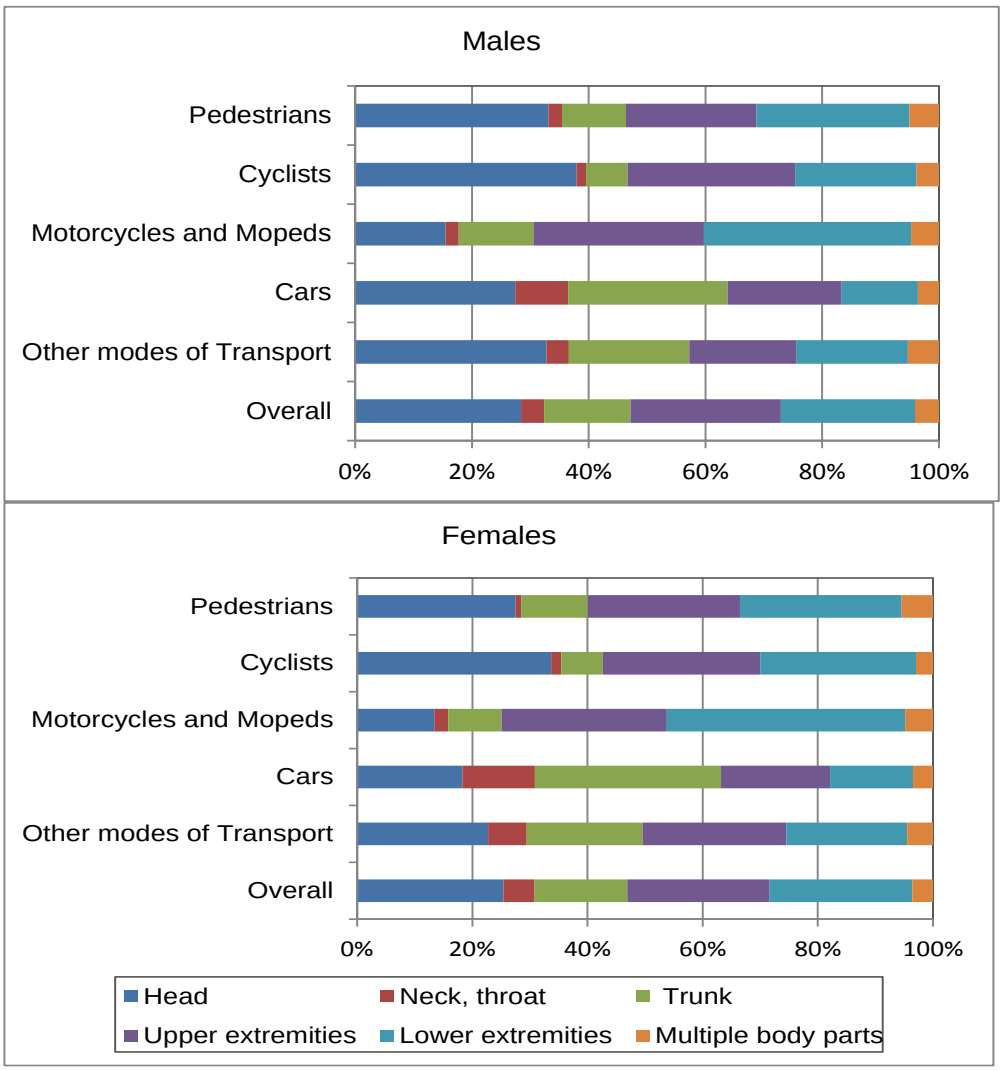
Figure 12: Average length of stay (hospital bed days), by gender and mode of transport



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).

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

Figure 13: Body part injured, 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).

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 youngsters' casualties by type of road user.

Table 4 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 4: Top ten types of transport injuries, 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 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).

Accident Causation

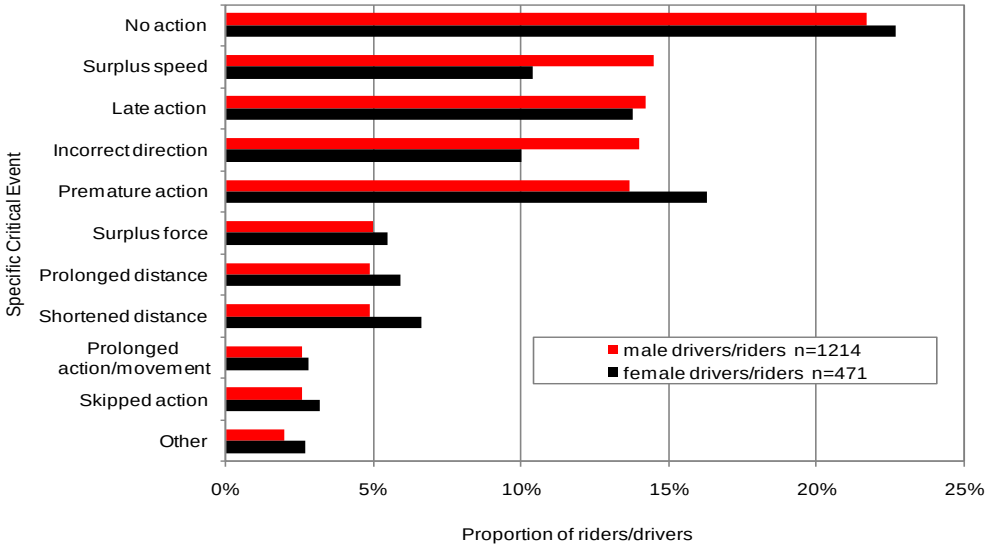
During the EC SafetyNet project, in-depth data were collected using a common methodology for samples of accidents that occurred in Germany, Italy, The Netherlands, Finland, Sweden and the UK[5] [6]. The SafetyNet Accident Causation Database was formed between 2005 and 2008, and contains details of 1.006 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.

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

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 11 compares the distribution of specific critical events for male drivers/riders to the distribution for females.

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

Figure 14: Distribution of specific critical events for drivers or riders by gender



Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
N=1685
Date of query: 2010

17% of the links for male drivers and riders between causes are observed to be between 'faulty diagnosis' and 'information failure'.

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

Table 5: 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 5 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.

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

Table 6: 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 11 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.

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
- Bicycles
- Motorcycles and Mopeds
- Car occupants
- Heavy Goods Vehicles
- Motorways
- Junctions
- Roads in urban areas
- Roads outside urban areas
- Seasonality
- Single vehicle accidents
- Gender
- Accident Causation

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Country abbreviations used and definition of EU-level

EU - 19	
BE	Belgium
CZ	Czech Republic
DK	Denmark
DE	Germany
IE	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
LU	Luxembourg
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
FI	Finland
SE	Sweden
UK	United Kingdom

EU-24= EU-19 +	
EE	Estonia
LV	Latvia
HU	Hungary
MT	Malta
SK	Slovakia

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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