Traffic Safety Basic Facts 2012

The Elderly (Aged >64)

In 2010 [1], over 6.500 elderly people died in road traffic accidents in 24 European countries.

Due to their greater frailty, the elderly are more likely to be seriously injured in any given accident than younger people. In 2010, 6.563 elderly people were killed in road traffic accidents in the 24 Member States for which CARE are available, as shown in Table 1 (2010 CARE data were unavailable for 4 Member States and Northern Ireland at the time of the query, so 2009 data were used instead). This constitutes 21,7% of fatalities of all ages in 2010. Table 1 presents the annual data by country from 2001, with the totals for the 19 countries with CARE data available for most of the decade. This total is presented in Figure 1; it fell by 30% between 2001 and 2010.

Table 1: Number of elderly fatalities by country, 2001-2010 [1]

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
BE	264	210	240	201	186	193	170	149	163	153
CZ	241	211	231	247	202	173	201	186	167	172
DK	102	103	99	80	70	72	95	97	61	67
DE	1.283	1.236	1.329	1.201	1.162	1.154	1.153	1.066	1.104	910
IE	47	60	53	61	56	66	58	47	26	30
EL	385	340	322	317	322	327	330	329	275	268
ES	867	835	817	746	719	671	604	544	507	527
FR	1.393	1.361	1.120	962	1.014	921	896	823	796	765
IT	1.369	1.461	1.379	1.293	1.199	1.220	1.105	1.099	1.111	1.059
LU	7	5	6	14	8	3	7	4	9	3
NL	222	213	221	199	188	209	181	174	187	-
AT	186	211	197	177	151	156	145	172	159	140
PL	910	976	885	965	931	888	945	962	810	674
PT	320	304	304	230	222	215	225	197	205	278
RO	417	458	417	483	491	504	617	570	593	494
SI	46	47	53	49	41	33	51	34	39	30
FI	96	99	96	97	91	71	79	93	69	64
SE	147	139	118	139	104	95	105	102	92	-
UK	652	655	658	589	616	572	575	499	432	391
EU-19	8.955	8.924	8.546	8.050	7.773	7.543	7.542	7.148	6.805	6.304
Yearly reduction	2,0%	0,3%	4,2%	5,8%	3,4%	3,0%	0,0%	5,2%	4,8%	7,4%
EE	-	-	-	-	21	32	41	29	18	-
HU	-	-	232	214	206	216	209	179	166	149
LV	-	-	-	-	-	61	73	55	-	44
MT	-	-	-	-	3	1	3	2	5	0
SK	-	-	-	-	77	95	97	72	51	48

2009 data for NI are used to estimate 2010 data for UK

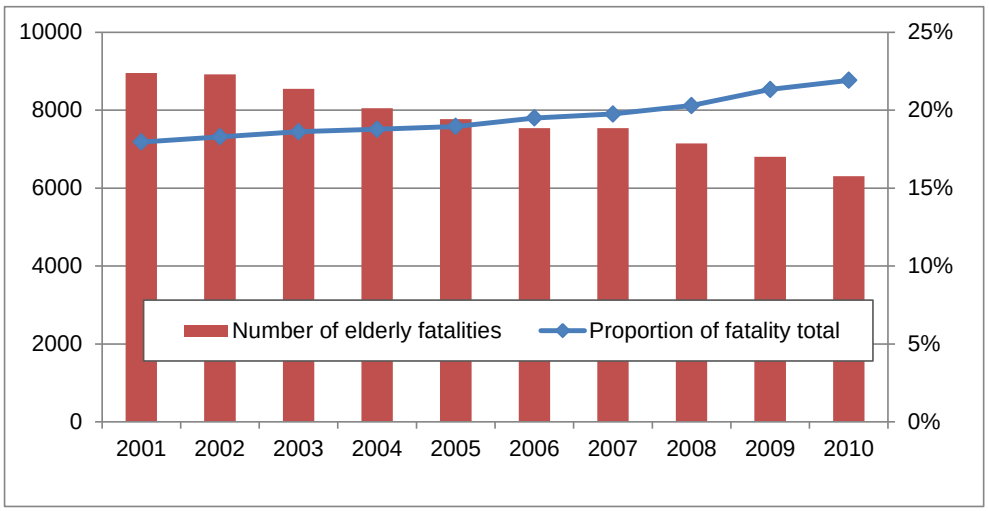
Source: CARE Database / EC
Date of query: September 2012

The number of elderly people who died in the EU-19 countries fell by 30% between 2001 and 2010.

[1] The country abbreviations and definition of EU level are shown on Page 20. Where a value is missing for an EU-19 country in a particular year, its contribution to the EU-19 total is estimated as the previous or next known value.

Since 2008, more than one fifth of all road traffic fatalities have been at least 65 years old.

Figure 1: Number of elderly fatalities and share of fatality total in EU-19, 2001-2010[1]



2009 fatality data for NI, NL and SE used as proxies for the 2010 data

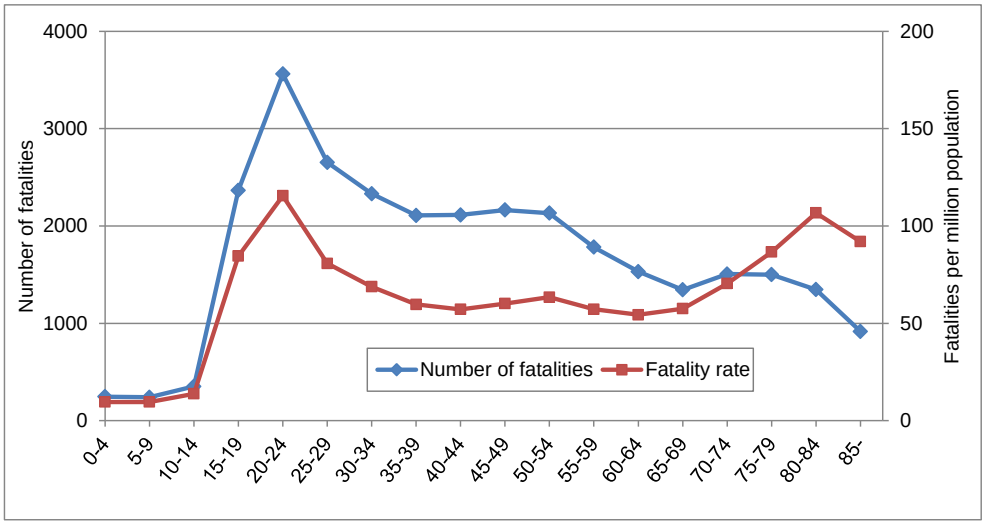
Source: CARE Database / EC
Date of query: September 2012

Although the number of elderly fatalities has decreased over the last decade, the total number has fallen faster and the proportion of all fatalities who were elderly has tended to rise.

Figure 2 puts these figures for the elderly in a broader context. It shows the number of fatalities in 2010 in the EU-24 countries in 5-year age groups. The population of these age groups varies, so the figure also shows the number of fatalities per million population. The elderly suffered fewer fatalities than the younger adult groups, but their fatality rates were amongst the highest.

The rate of road traffic fatalities per million population begins to rise about the age of 65.

Figure 2: Number of fatalities and fatality rate in EU-24 by age group, 2010



2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012
Source of population data: EUROSTAT

In most European countries, the elderly are at greater risk of being killed in a road accident than the overall population. Middle-aged people (45-64 years old) are at a lower risk of being killed than the elderly.

Table 2 compares the fatality rates of elderly people and middle-aged people (45-64 years) with the fatality rate of the whole population. The ratios of elderly to middle-aged and of elderly to all fatalities clearly show that the risk of being killed in an accident is higher for the elderly than for the middle-aged and that the elderly have an above-average fatality risk in most of the EU-24 countries.

Table 2: Fatalities per million population for the middle-aged and elderly, by country, 2010

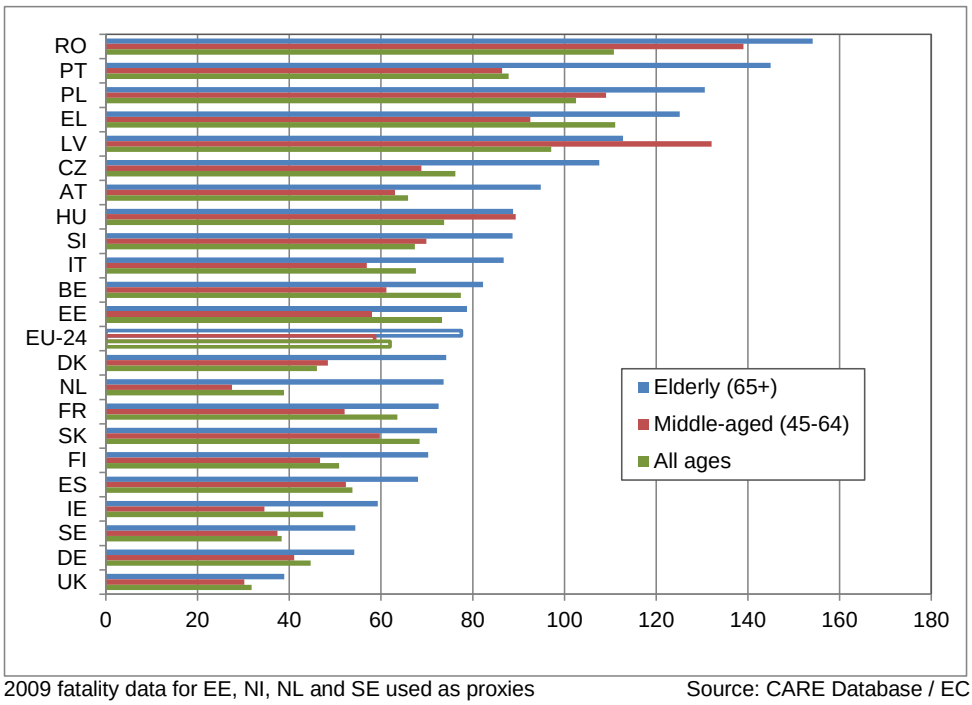
	Fatality rate			Comparisons	
	Middle-aged (45-64)	Elderly (65+)	All ages	Elderly / Middle-aged	Elderly / All ages
BE	61	82	77	1,34	1,06
CZ	69	108	76	1,56	1,41
DK	48	74	46	1,53	1,61
DE	41	54	45	1,32	1,21
EE	58	79	73	1,36	1,07
IE	35	59	47	1,72	1,25
EL	93	125	111	1,35	1,13
ES	52	68	54	1,30	1,27
FR	52	73	64	1,39	1,14
IT	57	87	68	1,52	1,28
LV	132	113	97	0,85	1,16
LU	77	43	64	0,56	0,67
HU	89	89	74	0,99	1,20
MT	17	0	31	0,00	0,00
NL	27	74	39	2,68	1,90
AT	63	95	66	1,50	1,44
PL	109	131	103	1,20	1,27
PT	86	145	88	1,68	1,65
RO	139	154	111	1,11	1,39
SI	70	89	67	1,27	1,32
SK	60	72	68	1,21	1,06
FI	47	70	51	1,50	1,38
SE	37	54	38	1,46	1,42
UK	30	39	32	1,29	1,22
EU-24	59	78	62	1,32	1,25

2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012
Source of population data: EUROSTAT

Romania, Greece and Poland have the highest overall fatality rates, and their rates for the elderly are also among the highest. The three sets of fatality rates are illustrated in Figure 3, with countries being sorted by the overall fatality rate for the elderly (Luxembourg and Malta are excluded because of the low number of fatalities).

Figure 3: Fatalities per million population, 2010



2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012
Source of population data: EUROSTAT

Age and gender

Table 3 gives more details of the age groups and of the gender distribution of elderly fatalities, using three age ranges. Almost two thirds of elderly fatalities are men.

Table 3: Number of elderly fatalities by age group, gender and country, 2010

	Proportion by age			Proportion by gender		Total
	65-74	75-84	85+	male	female	
BE	42%	44%	13%	61%	39%	153
CZ	46%	40%	14%	58%	42%	172
DK	36%	43%	21%	48%	52%	67
DE	43%	44%	12%	64%	36%	910
EE	61%	33%	6%	56%	44%	18
IE	60%	30%	10%	73%	27%	30
EL	42%	46%	12%	74%	26%	268
ES	46%	40%	14%	66%	34%	527
FR	35%	48%	18%	59%	41%	765
IT	40%	46%	13%	73%	27%	1.059
LV	89%	6%	6%	83%	17%	44
LU						3
HU	53%	35%	12%	67%	33%	149
MT						0
NL	34%	47%	20%	64%	36%	187
AT	41%	42%	17%	65%	35%	140
PL	49%	42%	9%	56%	44%	674
PT	47%	44%	9%	73%	27%	278
RO	53%	37%	10%	59%	41%	494
SI	40%	40%	20%	63%	37%	30
SK	46%	40%	15%	52%	48%	48
FI	56%	36%	8%	64%	36%	64
SE	43%	36%	21%	61%	39%	92
UK	34%	43%	23%	58%	42%	391
EU-24	43%	43%	14%	64%	36%	6.563

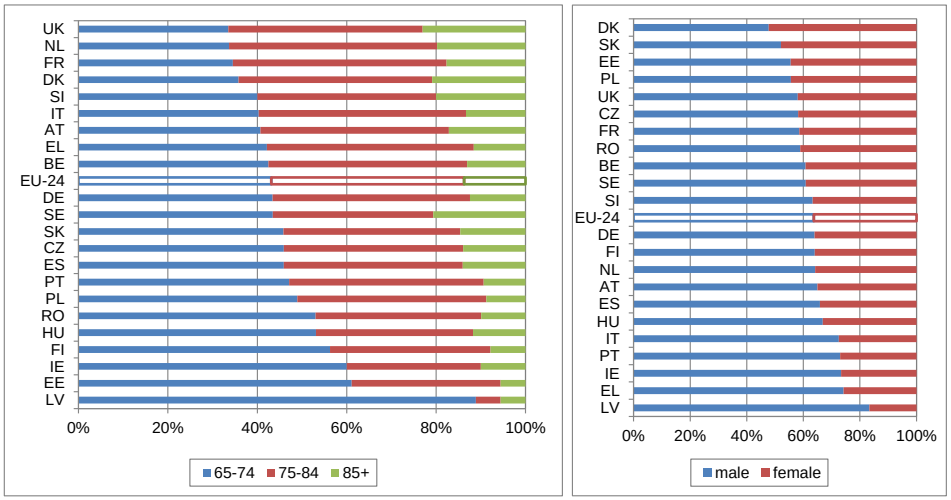
Percentages only for cells with at least 10 elderly fatalities. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

Almost two thirds of the elderly people killed in road accidents are men.

Women make up a higher proportion of fatalities among the elderly (36%) than within the whole population (24%). Figure 4 illustrates the results from Table 3 (Luxembourg and Malta are excluded because the low number of fatalities may mean that proportions are misleading). The highest proportions of female elderly fatalities occur in Denmark (52%) and Slovakia (48%). The highest proportions of elderly fatalities aged 65-74 occur in Ireland (60%) and Estonia (61%) (there are relatively many fatalities in Latvia with unknown age).

Figure 4: Proportion of elderly fatalities by age group, gender and country, 2010



2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

The proportion of elderly people killed in road accidents who are at least 85 years old is highest in the UK and the Netherlands.

Table 4 calculates the rate of fatalities per million population for the three age groups in Table 3. The 75-84 age group has the highest fatality rate, averaged over the EU-24, while the 65-74 group has the lowest. These differences are probably influenced by the tendency for personal mobility to reduce with increasing age, and for frailty to increase. The table also shows that in most countries the fatality rate of elderly men is over twice the rate of elderly women.

Averaged over Europe, the fatality rate for elderly men is well over twice the rate for elderly women.

Table 4: Fatality rates of the elderly by age group, gender and country, 2010

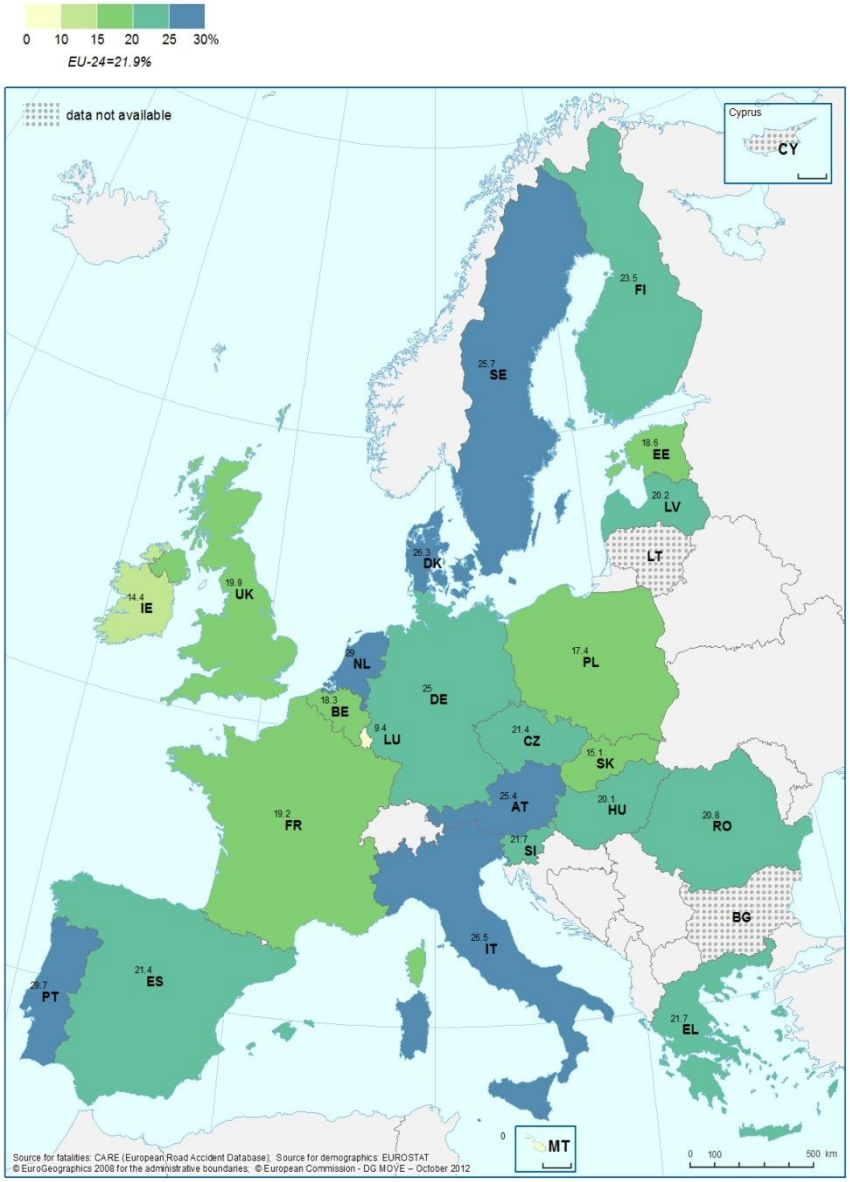
	Fatality rate by age			Fatality rate by gender		All elderly
	65-74	75-84	85+	Male	Female	
BE	71	96	85	119	56	82
CZ	87	126	165	156	75	108
DK	47	105	127	80	70	74
DE	41	74	64	81	34	54
EE	87	73	48	133	52	79
IE	63	55	52	97	29	59
EL	102	147	162	211	58	125
ES	64	72	74	105	40	68
FR	53	91	86	103	51	73
IT	69	111	88	149	41	87
LV	71	7	31	118	11	46
LU	27	39	137	67	25	43
HU	83	89	97	160	45	86
MT	0	0	0	0	0	0
NL	45	103	125	108	47	74
AT	71	121	131	149	57	95
PL	120	148	123	193	93	131
PT	130	174	123	256	67	145
RO	143	160	218	224	106	154
SI	65	99	190	143	54	89
SK	58	84	123	101	55	72
FI	74	72	46	109	43	70
SE	45	60	77	74	38	54
UK	25	49	73	51	29	39
EU-24	63	94	90	117	48	77

2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

Map 1 shows the proportion of fatalities that were elderly (at least 65 years old) by country in 2010. Among the larger countries, this ranged between 17% in Poland and 29% in the Netherlands.

Map 1: Proportion of fatalities that were elderly by country, 2010



The proportion of fatalities that were elderly varies between countries between one sixth and almost one third.

Road user type

Table 5 shows the numbers of elderly fatalities by road user type. The percentages reflect the reduced mobility options and the higher frailty of elderly persons. 38% of elderly fatalities were pedestrians in the EU-24 countries. Among the larger countries, the percentage of elderly fatalities who were pedestrians is greatest in Romania (62%) and least in the Netherlands (14%). Conversely, the proportion of elderly fatalities who were car drivers ranged between 6% in Romania and 50% in Ireland. The results are illustrated in Figure 5 (sorted by the share of pedestrian fatalities, and excluding Luxembourg).

Across Europe, two fifths of elderly fatalities were pedestrians and one quarter were car drivers.

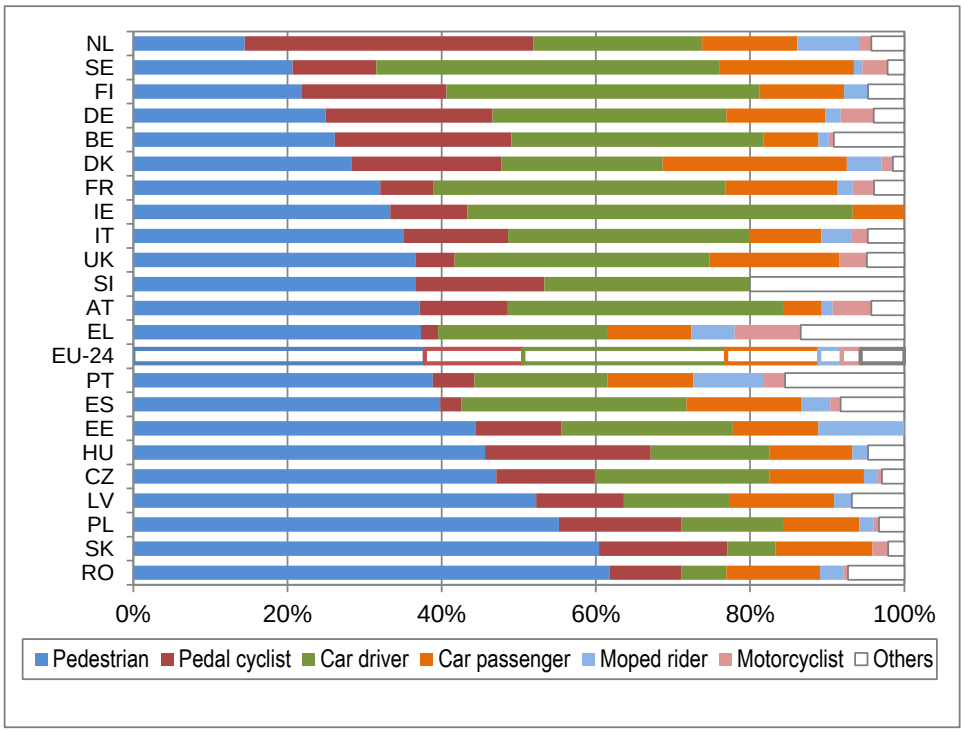
Table 5: Number of elderly fatalities by road user type, 2010

	Pedestrian	Pedal cyclist	Car driver	Car pass-enger	Moped rider	Motor-cyclist	Others	Total
BE	26%	23%	33%	7%	1%	1%	9%	153
CZ	47%	13%	23%	12%	2%	1%	3%	172
DK	28%	19%	21%	24%	4%	1%	1%	67
DE	25%	22%	30%	13%	2%	4%	4%	910
EE	44%	11%	22%	11%	11%	0%	0%	18
IE	33%	10%	50%	7%	0%	0%	0%	30
EL	37%	2%	22%	11%	6%	9%	13%	268
ES	40%	3%	29%	15%	4%	1%	8%	527
FR	32%	7%	38%	15%	2%	3%	4%	765
IT	35%	14%	31%	9%	4%	2%	5%	1.059
LV	52%	11%	14%	14%	2%	0%	7%	44
LU								3
HU	46%	21%	15%	11%	2%	0%	5%	149
MT								0
NL	14%	37%	22%	12%	8%	2%	4%	187
AT	37%	11%	36%	5%	1%	5%	4%	140
PL	55%	16%	13%	10%	2%	1%	3%	674
PT	39%	5%	17%	11%	9%	3%	15%	278
RO	62%	9%	6%	12%	3%	1%	7%	494
SI	37%	17%	27%	0%	0%	0%	20%	30
SK	60%	17%	6%	13%	0%	2%	2%	48
FI	22%	19%	41%	11%	3%	0%	5%	64
SE	21%	11%	45%	17%	1%	3%	2%	92
UK	37%	5%	33%	17%	0%	4%	5%	391
EU-24	38%	13%	26%	12%	3%	2%	6%	6.563

Percentages only for cells with at least 10 elderly fatalities. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data.

Source: CARE Database / EC
Date of query: September 2012

Figure 5: Distribution of elderly fatalities by road user type, 2010



2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

Table 6 now shows the corresponding proportions of fatalities who were elderly so, for example, 38 of the 106 pedestrian fatalities in Belgium were elderly and 38/106=38%. Cases with less than 50 fatalities are excluded from Table 6 because percentages of relatively small totals may be misleading.

About two fifths of pedestrian fatalities were elderly, compared with one sixth of car occupants.

Table 6: Proportion of fatalities that are elderly, by road user type and country, 2010

	Pedestrian	Pedal cyclist	Car driver	Car pass-enger	Moped rider	Motor-cyclist	Others	Total
BE	38%	50%	16%	9%		1%	14%	18%
CZ	48%	28%	14%	18%		1%	10%	21%
DK			15%					26%
DE	48%	52%	21%	23%	24%	6%	15%	25%
EE								18%
IE			19%	4%				14%
EL	56%		16%	16%		6%	33%	21%
ES	44%	22%	20%	19%	20%	2%	17%	21%
FR	51%	36%	19%	20%	6%	3%	11%	19%
IT	60%	55%	25%	19%	21%	2%	21%	26%
LV	29%		12%					20%
LU								
HU	35%	35%	12%	12%			12%	20%
MT								
NL	43%	51%	20%	29%		4%		29%
AT	53%		22%	11%		10%		25%
PL	30%	38%	8%	9%	14%	2%	11%	17%
PT	55%		22%	22%	32%	6%	31%	30%
RO	35%	25%	6%	12%	13%	5%	20%	21%
SI								22%
SK	23%		3%	9%				13%
FI			22%					24%
SE			24%					26%
UK	33%	18%	21%	23%		3%	17%	20%
EU-24	41%	41%	18%	17%	18%	4%	17%	22%

Percentages only for cells with at least 50 fatalities of all ages. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

Type of road

Table 7 and Figure 6 show the distribution of elderly fatalities by type of road, and compare it with the distribution for the middle-aged (countries with more than a quarter of cases “unknown” are excluded from the figure). By comparison with the middle-aged fatalities, there are fewer elderly fatalities on motorways and on rural roads, but more on urban roads. This is probably a result of the relatively high proportion of elderly fatalities who are pedestrians (most pedestrian fatalities occur on urban roads). The national distributions vary greatly between the member states.

Compared with the middle-aged, relatively many elderly were killed on urban roads, and relatively few on rural roads and motorways.

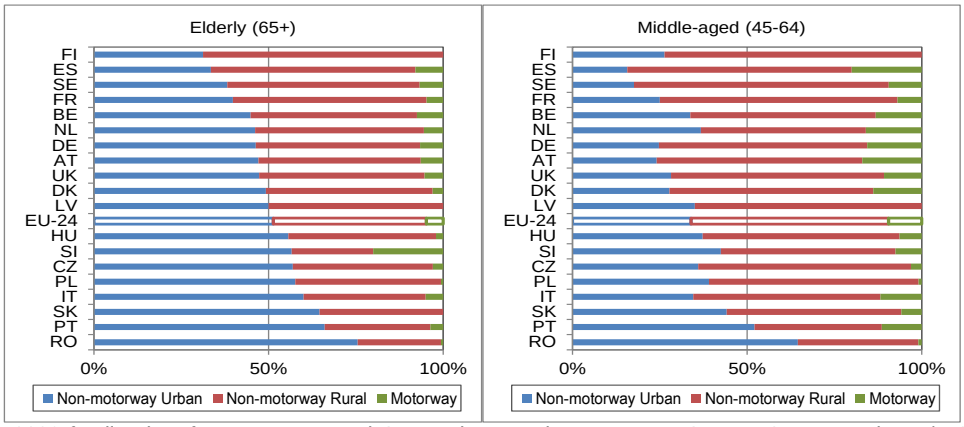
Table 7: Distribution of middle-aged and elderly fatalities by road type and country, 2010

	Elderly (65+)				Middle-aged (45-64)			
	Motorway	Non-motorway		Total	Motorway	Non-motorway		Total
		Rural	Urban			Rural	Urban	
BE	7%	56%	35%	153	12%	48%	30%	178
CZ	3%	70%	41%	172	3%	61%	36%	197
DK	3%	63%	30%	67	14%	58%	28%	72
DE	7%	61%	25%	910	16%	60%	25%	937
EE	0%	0%	0%	18	0%	0%	0%	20
IE	10%	0%	0%	30	3%	0%	0%	35
EL	3%	16%	3%	268	8%	16%	3%	272
ES	8%	73%	18%	527	20%	64%	16%	599
FR	5%	76%	28%	765	7%	68%	25%	856
IT	5%	46%	30%	1.059	12%	54%	35%	916
LV	0%	114%	61%	44	0%	65%	35%	77
LU	33%	33%	33%	3	40%	50%	10%	10
HU	2%	89%	59%	149	6%	56%	37%	236
MT				0	0%	0%	100%	2
NL	5%	32%	25%	187	16%	46%	36%	127
AT	6%	59%	24%	140	17%	59%	24%	141
PL	0%	84%	55%	674	1%	50%	32%	1.140
PT	4%	31%	44%	278	11%	36%	52%	238
RO	1%	51%	96%	494	1%	35%	65%	733
SI	20%	67%	57%	30	8%	50%	43%	40
SK	0%	90%	79%	48	6%	50%	44%	86
FI	0%	83%	30%	64	0%	74%	26%	72
SE	7%	67%	16%	92	9%	69%	17%	90
UK	4%	65%	30%	391	9%	54%	25%	476
EU-24	4%	61%	36%	6.563	9%	53%	32%	7.550

%s do not sum to 100 in countries where road type is unknown for some fatalities. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data.

Source: CARE Database / EC
Date of query: September 2012

Figure 6: Distribution of middle-aged and elderly fatalities by road type, 2010



2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

Day of week and time of day

Table 8 shows the distribution of elderly fatalities by time of day, dividing the day into eight 3-hour periods (DE is excluded as hour is unknown for all fatalities). More than 80% of all elderly fatalities occur between 8am and 8pm. While the number of elderly fatalities decreases after 8pm in many countries, it stays high during evening

hours in southern countries (Greece and Spain), as well as Ireland.

More than 80% of all elderly fatalities occur between 8am and 8pm.

Table 8: Proportion of elderly fatalities by time of day and country, 2010

	00:00-03:59	04:00-07:59	08:00-11:59	12:00-15:59	16:00-19:59	20:00-23:59	Total
BE	4%	5%	28%	28%	29%	6%	153
CZ	2%	15%	28%	26%	23%	6%	171
DK	3%	4%	30%	31%	22%	9%	67
EE	0%	6%	33%	17%	33%	11%	18
IE	3%	10%	23%	13%	30%	20%	30
EL	4%	7%	28%	25%	22%	14%	268
ES	2%	6%	28%	25%	27%	13%	527
FR	1%	4%	33%	23%	34%	7%	765
IT	3%	4%	31%	21%	31%	9%	1.052
LV	2%	7%	9%	32%	30%	20%	44
LU							3
HU	1%	17%	30%	23%	21%	7%	149
MT							0
NL	1%	2%	18%	44%	30%	6%	186
AT	1%	6%	30%	29%	27%	7%	140
PL	2%	13%	26%	20%	30%	9%	674
PT	2%	7%	23%	27%	32%	10%	278
RO	3%	11%	24%	23%	27%	11%	494
SI	0%	10%	43%	17%	23%	7%	30
SK	0%	15%	19%	27%	38%	2%	48
FI	2%	11%	33%	28%	23%	3%	64
SE	0%	4%	31%	31%	25%	8%	89
UK	2%	4%	28%	35%	24%	8%	391
EU-23	2%	7%	28%	25%	29%	9%	5.653

Percentages only for cells with at least 10 elderly fatalities. Excludes small number of fatalities in CZ, IT and SE with hour unknown. DE is excluded as hour is unknown for all fatalities. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data.

Source: CARE Database / EC
Date of query: September 2012

Table 9 presents the corresponding analysis by day of week.

The greatest number of elderly fatalities occurs on Fridays, and the lowest on Sundays.

Table 9: Proportion of elderly fatalities by day of week and country, 2010

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Total
BE	7%	10%	16%	19%	18%	14%	15%	153
CZ	17%	17%	15%	13%	17%	13%	7%	172
DK	19%	10%	12%	16%	16%	15%	10%	67
DE	16%	15%	15%	14%	15%	12%	12%	910
EE	17%	11%	6%	33%	6%	22%	6%	18
IE	7%	3%	17%	13%	33%	20%	7%	30
EL	13%	14%	15%	12%	19%	13%	14%	268
ES	15%	14%	17%	16%	15%	12%	13%	527
FR	14%	18%	15%	15%	15%	12%	10%	765
IT	16%	13%	15%	14%	17%	14%	11%	1.059
LV	18%	25%	9%	14%	14%	11%	9%	44
LU								3
HU	18%	20%	12%	9%	19%	13%	9%	149
MT								0
NL	19%	12%	16%	14%	16%	15%	9%	187
AT	19%	16%	22%	11%	10%	11%	11%	140
PL	16%	18%	16%	16%	16%	12%	8%	674
PT	13%	15%	13%	14%	15%	15%	14%	278
RO	14%	13%	15%	14%	15%	13%	15%	494
SI	10%	10%	20%	17%	30%	3%	10%	30
SK	19%	6%	17%	13%	19%	19%	8%	48
FI	19%	20%	17%	19%	9%	11%	5%	64
SE	12%	22%	12%	12%	18%	18%	5%	92
UK	16%	17%	14%	15%	15%	11%	12%	391
EU-24	15%	15%	15%	15%	16%	13%	11%	6.563

Percentages only for cells with at least 10 elderly fatalities. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data.

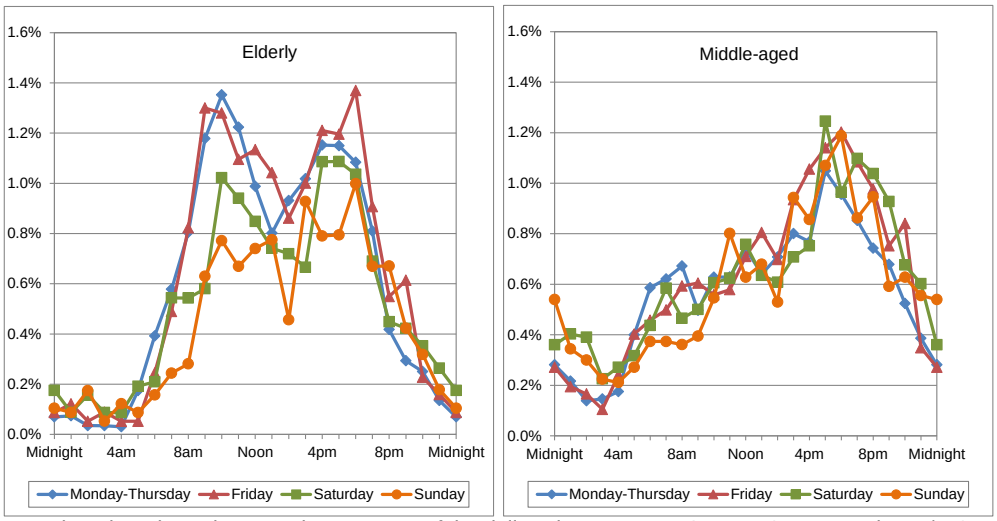
Source: CARE Database / EC
Date of query: September 2012

Figure 7 investigates whether the EU-22 distribution of fatalities by time of day varies with day of week for the elderly and for the middle-aged. The weekday distributions (Monday-Thursday) are similar, so have been combined in the figure. There are 168 hours per week, so on average 0,60% of fatalities occur per hour through the week.

There are clear differences between middle-aged and elderly fatality distributions and limited but significant differences by day of week. Relatively few elderly people are killed in road accidents at night. The middle-aged distributions have clear daily peaks in the late afternoon, especially at the weekend. The elderly distributions have peaks slightly earlier in the afternoon, with additional peaks before noon.

The peak of the fatality distribution occurs earlier in the afternoon for the elderly than for middle-aged, with a secondary peak before noon.

Figure 7: Middle-aged and elderly fatalities by day of week and time of day in EU-23, 2010



Monday-Thursday values are the averages of the daily values from Monday to Thursday. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data. DE is excluded as hour is unknown for all fatalities.

Source: CARE Database / EC
Date of query: September 2012

Seasonality

Table 10 shows the distribution of elderly fatalities in each quarter of the year. Although the number of elderly fatalities peaks in the fourth quarter (October to December) in most countries, as in the EU-23, the peak in Spain and Greece occurs in the third quarter (July to September).

Table 10: Proportion of elderly fatalities by quarter of year and country, 2010

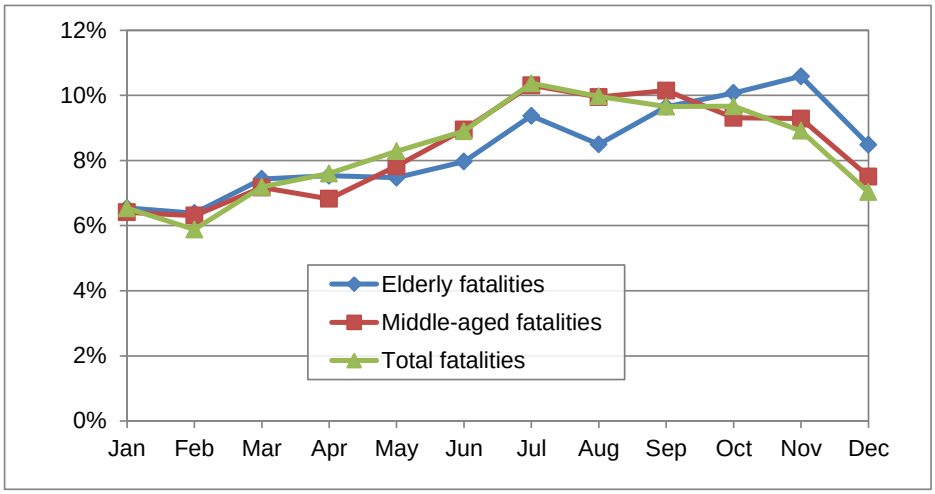
	January - March	April - June	July - September	October - December	Total
BE	17%	25%	33%	25%	153
CZ	17%	23%	22%	38%	172
DK	30%	18%	27%	25%	67
DE	18%	26%	27%	28%	910
EE	11%	11%	50%	28%	18
IE	20%	33%	17%	30%	30
EL	21%	24%	27%	28%	268
ES	22%	22%	30%	26%	527
FR	23%	19%	28%	30%	765
IT	23%	25%	24%	28%	1.059
LV	23%	23%	27%	27%	44
LU					3
HU	16%	23%	30%	32%	149
MT					0
NL	18%	23%	30%	29%	187
AT	22%	27%	24%	27%	140
PL	15%	24%	30%	31%	674
PT	25%	20%	28%	27%	278
RO	17%	20%	32%	31%	494
SI	20%	20%	33%	27%	30
SK	21%	15%	23%	42%	48
FI	28%	20%	19%	33%	64
SE	13%	15%	35%	37%	92
UK	24%	25%	22%	29%	391
EU-24	20%	23%	28%	29%	6.563

Percentages only for cells with at least 10 elderly fatalities. 2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data.

Source: CARE Database / EC
Date of query: September 2012

Figure 8 compares the distribution by month of elderly and middle-aged fatalities with the overall distribution. For all three, the lowest number of fatalities in 2010 occurred in February. The number of elderly fatalities rose steadily to a peak in November, then declined in December.

Figure 8: Distribution of middle-aged, elderly and total fatalities by month in EU-24, 2010



2009 fatality data for EE, NI, NL and SE used as proxies for the 2010 data

Source: CARE Database / EC
Date of query: September 2012

There are relatively few elderly fatalities between May and August, and relatively many between October and December.

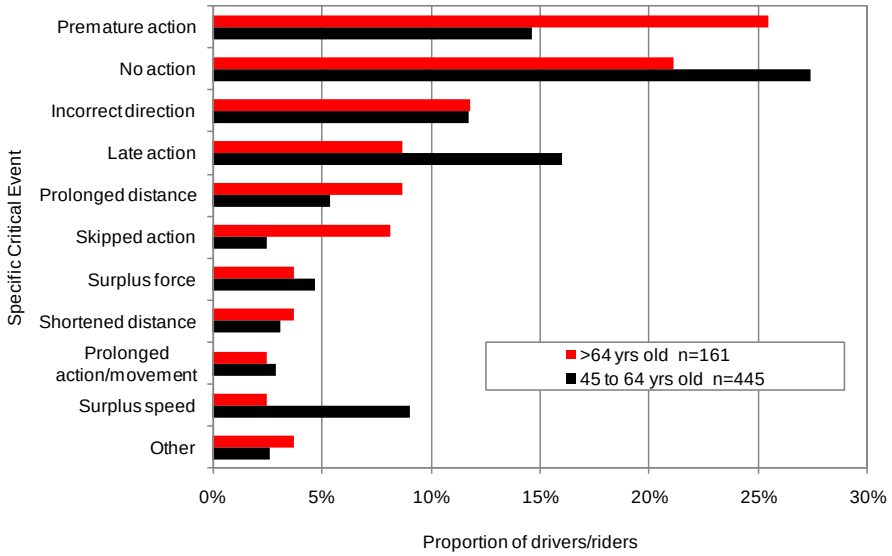
Accident Causation

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.

These data have been analysed to compare the causation recorded for elderly and middle-aged drivers and riders. Of the accidents in the database, 15% (155) involve an elderly driver or rider (aged > 64 years old). Males account for 79% of this group and 75% are drivers of passenger cars, followed by 15% who were bicycle riders. Figure 9 compares the distribution of specific critical events for elderly drivers/riders against the distribution for the middle-aged group (45 to 64 year olds).

Specific critical events relating to 'timing' are recorded for 55% of elderly drivers and riders in the sample.

Figure 9: Distribution of specific critical events – elderly and middle-aged drivers/riders



Source: SafetyNet Accident Causation Database 2005 to 2008 / EC
N=606
Date of query: 2010

Specific critical events under the general category of 'timing', no action, premature action and late action, are important for both the elderly and middle-aged groups. A premature action is one undertaken before a signal has been given or the required conditions are established, for example entering a junction before it is clear of other traffic. Premature action is recorded more frequently for the elderly group, whilst no action and late action are more frequent 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

the middle-aged group. No action describes those drivers/riders who have not reacted at all (or at least in an effective time frame) to avoid a collision, for example, to avoid an oncoming vehicle. Looking at other differences, prolonged distance and skipped action are more prevalent in the elderly group, whilst surplus (excess) speed is less prevalent. Prolonged distance is an action taken too far, such as entering a junction across a give way line, and skipped action is missing a part of the driving task, such as not looking before changing lane. Examples of incorrect direction, the third most frequent specific critical event for the elderly group, are making a manoeuvre in the wrong direction, turning left instead of right and going off the road instead of following the lane.

12% of the links between causes are observed to be between 'faulty diagnosis' and 'information failure'.

Table 10 gives the most frequent links between causes for elderly drivers/riders in the dataset. For this group there are 166 such links.

Table 10: Ten most frequent links between causes – elderly drivers/riders

Links between causes	Frequency
Faulty diagnosis - Information failure (between driver and traffic environment or driver and vehicle)	20
Observation missed - Permanent obstruction to view	17
Observation missed - Temporary obstruction to view	14
Observation missed - Faulty diagnosis	13
Observation missed - Distraction	7
Observation missed - Inattention	7
Observation missed - Inadequate plan	6
Faulty diagnosis - Communication failure	6
Faulty diagnosis - False observation	5
Faulty diagnosis - Cognitive bias	5
Others	66
Total	166

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

Faulty diagnosis is an incorrect or incomplete understanding of road conditions or another road user's actions. It is linked to information failure (for example, a driver thinking another vehicle was moving when it was in fact stopped 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). For this group it is also linked, although in lower numbers, to false observation (for example, incorrectly recognising a green traffic light as being red) and cognitive bias (taking in and processing information but with incorrect cognitive interpretation, for example, reading a green light for the next set of traffic lights further on). The causes leading to observation missed fall into two groups, physical 'obstruction to view' type causes (for example, parked cars at a junction) and human factors (for example, missing a red light due to distraction or inattention).

ROAD ACCIDENT HEALTH INDICATORS

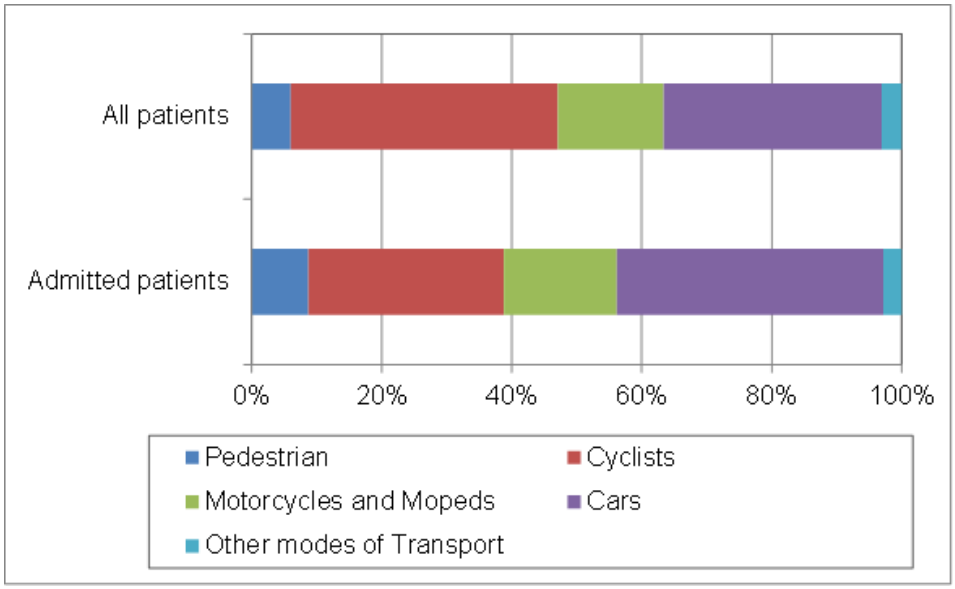
Injury data can be obtained from a wide range of sources, such as police and ambulance reports, national insurance schemes, and hospital records, each of which provides a specific but yet incomplete picture of the injuries suffered in road accidents. In order to obtain a comprehensive view of these injuries, 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.[4] 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).[5]

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 injured 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



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 = 2.568 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

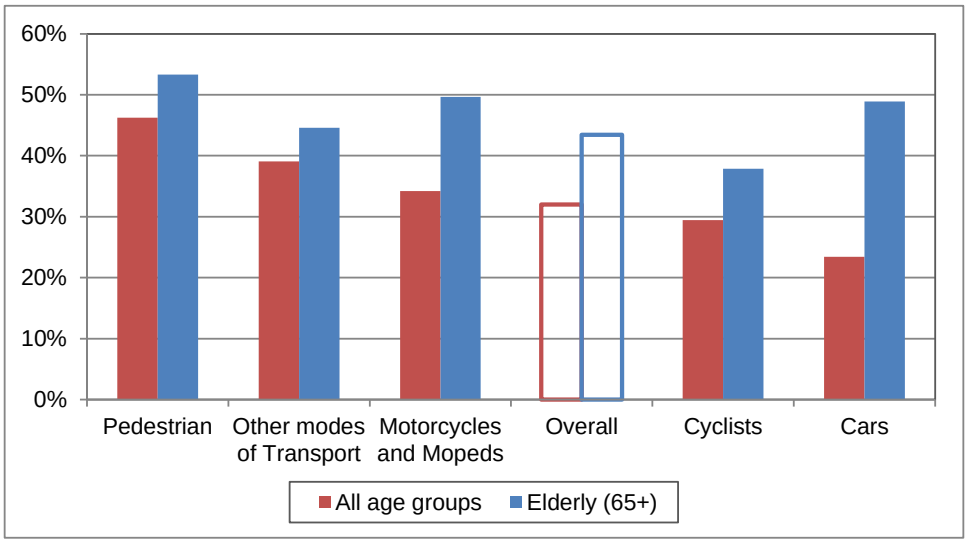
Figure 10 is based on IDB data from nine countries for accidents that occurred between 2005 and 2008. Vulnerable road users (pedestrians, cyclists, motorcycles and mopeds) accounted for almost two thirds (63%) of road accident casualties attending hospital, and for over half of casualties admitted to the hospital (56%).

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

Figure 11 shows that 32% of road accident casualties recorded in the IDB were admitted to the hospital overall, and 43% for older people. Figure 12 shows that the average length of stay was eight days overall, and twelve for older people.

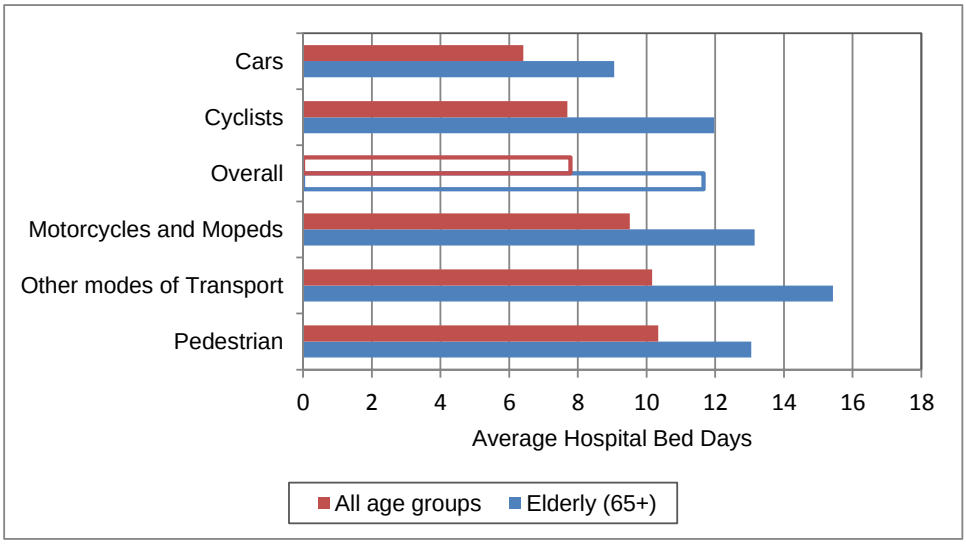
More than 40% of older casualties who attended a hospital were admitted to the hospital; their average stay in hospital was twelve days.

Figure 11: Proportion of casualties who were admitted to hospital, by age group and mode of transport



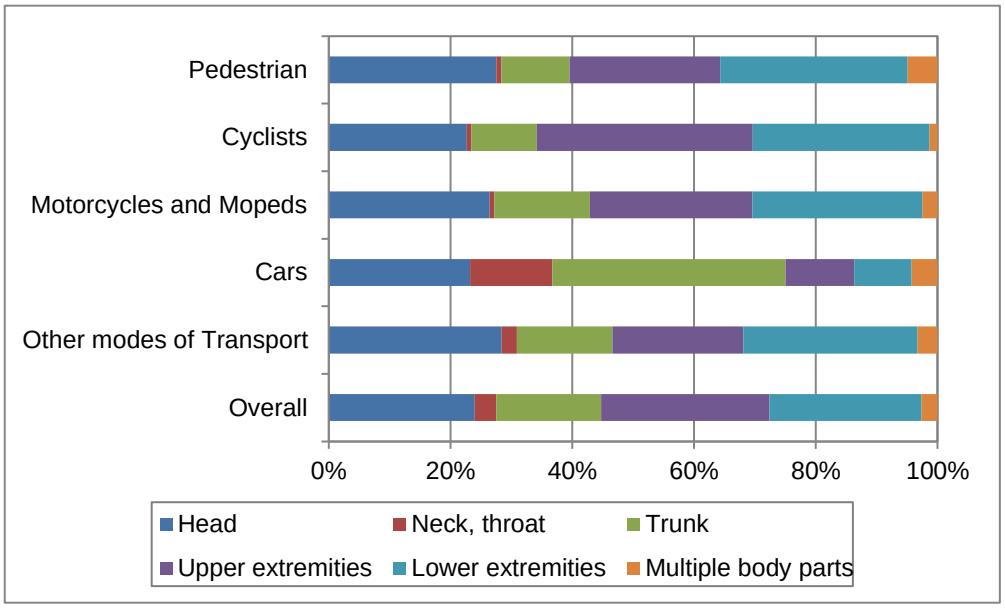
EU Injury Database (EU IDB) - hospital treated patients. IDB AI Transport module and place of occurrence (code 6.n [public road]); n = 23.568, n-elderly = 7.447, n-elderly = 3.235 (DE, DK, LV, MT, AT, NL, SE, SI, CY, years 2005-2008).

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



Source: See Figure 11.

Figure 13: Body part injured in older people (65+ years), by mode of transport



Source: See Figure 11.

Fractures account for more than 40% of all traffic injuries suffered by older people attending 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 elderly casualties by type of road user.

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

Table 11: Ten most frequently recorded types of injury, by age group

	Older people (65+ years)	All age groups
Contusion, bruise	26%	34%
Fracture	42%	27%
Open wound	10%	10%
Distortion, sprain	3%	8%
Concussion	6%	7%
Other specified brain injury	2%	2%
Luxation, dislocation	2%	2%
Injury to muscle and tendon	1%	2%
Abrasion	1%	1%
Injury to internal organs	1%	1%
Other specified types of injury	6%	6%
Total	100%	100%

Source: See Figure 11.

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 Mobility 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
- Accident causation

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
PT	Portugal
PL	Poland
RO	Romania
SI	Slovenia
FI	Finland
SE	Sweden
UK	United Kingdom (GB+NI)

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