# Traffic Safety Basic Facts 2011

## The Elderly (Aged >64)

Due to their greater frailty, the elderly are more likely to be seriously injured in any given accident than younger people. In 2009, 6.976 elderly people were killed in road traffic accidents in the 22 Member States for which CARE are available, as shown in Table 1~~Table 1~~ (CARE data for IE and SE were unavailable at the time of the query). This constitutes 21,7% of fatalities of all ages in 2009. Table 1~~Table 1~~ presents the annual data by country from 2000, with the totals for the 19 countries with CARE data available for most of the decade. This total is presented in Figure 1~~Figure 1~~; it fell by 23% between 2000 and 2009.

In 2009 [1], almost 7.000 elderly people died in road traffic accidents in 22 European countries.

The number of elderly people who died in the EU-19 countries fell by almost one quarter between 2000 and 2009.

**Table 1: Number of elderly fatalities by country, 2000-2009 [1]**

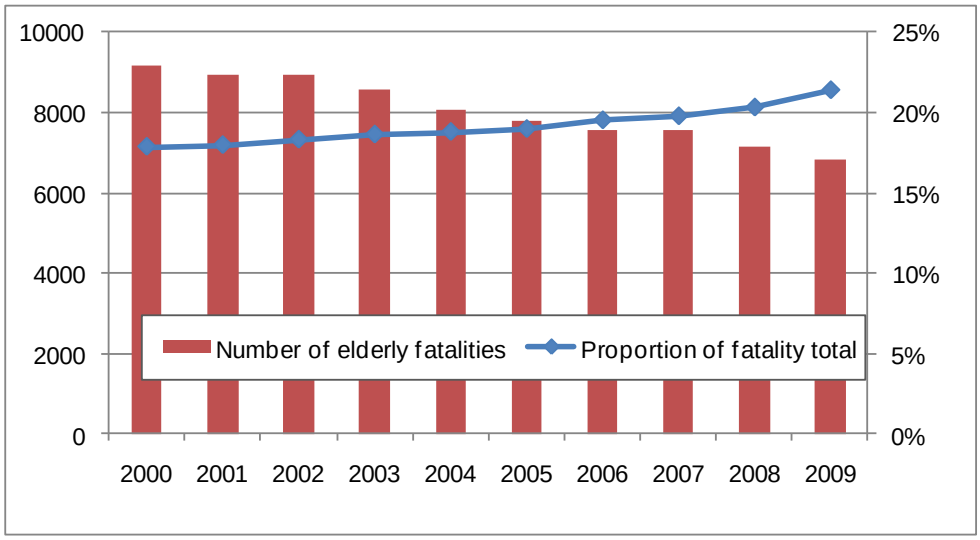
| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| BE | 238 | 264 | 210 | 240 | 201 | 186 | 193 | 170 | 149 | 163 |
| CZ | 243 | 241 | 211 | 231 | 247 | 202 | 173 | 201 | 186 | 167 |
| DK | 134 | 102 | 103 | 99 | 80 | 70 | 72 | 95 | 97 | 61 |
| DE | 1.311 | 1.283 | 1.236 | 1.329 | 1.201 | 1.162 | 1.154 | 1.153 | 1.066 | 1.104 |
| IE | 44 | 47 | 60 | 53 | 61 | 56 | 66 | 58 | 47 | - |
| EL | 428 | 385 | 340 | 322 | 317 | 322 | 327 | 330 | 329 | 275 |
| ES | 849 | 867 | 835 | 817 | 746 | 719 | 671 | 604 | 544 | 507 |
| FR | 1.370 | 1.393 | 1.361 | 1.120 | 962 | 1.014 | 921 | 896 | 823 | 796 |
| IT | 1.437 | 1.369 | 1.461 | 1.379 | 1.293 | 1.199 | 1.220 | 1.105 | 1.099 | 1.111 |
| LU | 10 | 7 | 5 | 6 | 14 | 8 | 3 | 7 | 4 | 9 |
| NL | 235 | 222 | 213 | 221 | 199 | 188 | 209 | 181 | 174 | 187 |
| AT | 190 | 186 | 211 | 197 | 177 | 151 | 156 | 145 | 172 | 159 |
| PL | - | 910 | 976 | 885 | 965 | 931 | 888 | 945 | 962 | 810 |
| PT | 342 | 320 | 304 | 304 | 230 | 222 | 215 | 225 | 197 | 205 |
| RO | 406 | 417 | 458 | 417 | 483 | 491 | 504 | 617 | 570 | 593 |
| SI | 56 | 46 | 47 | 53 | 49 | 41 | 33 | 51 | 34 | 39 |
| FI | 106 | 96 | 99 | 96 | 97 | 91 | 71 | 79 | 93 | 69 |
| SE | 154 | 147 | 139 | 118 | 139 | 104 | 95 | 105 | 102 | - |
| UK | 679 | 652 | 655 | 658 | 589 | 616 | 572 | 575 | 499 | 432 |
| EU-19 | 9.142 | 8.955 | 8.924 | 8.546 | 8.050 | 7.773 | 7.543 | 7.542 | 7.148 | 6.836 |
| Yearly reduction | | 2,0% | 0,3% | 4,2% | 5,8% | 3,4% | 3,0% | 0,0% | 5,2% | 4,4% |
| EE | - | - | - | - | - | 21 | 32 | 41 | 29 | 18 |
| HU | - | - | - | 232 | 214 | 206 | 216 | 209 | 179 | 166 |
| LV | - | - | - | - | - | - | 61 | 73 | 55 | 49 |
| MT | - | - | - | - | - | 3 | 1 | 3 | 2 | 5 |
| SK | - | - | - | - | - | 77 | 95 | 97 | 72 | 51 |

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

[1] The country abbreviations and definition of EU level are shown on Page 17. 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.

By 2009, more than one fifth of road traffic fatalities were aged 65 or older.

**Figure 1: Number of elderly fatalities and share of fatality total in EU-19, 2000-2009[1]**



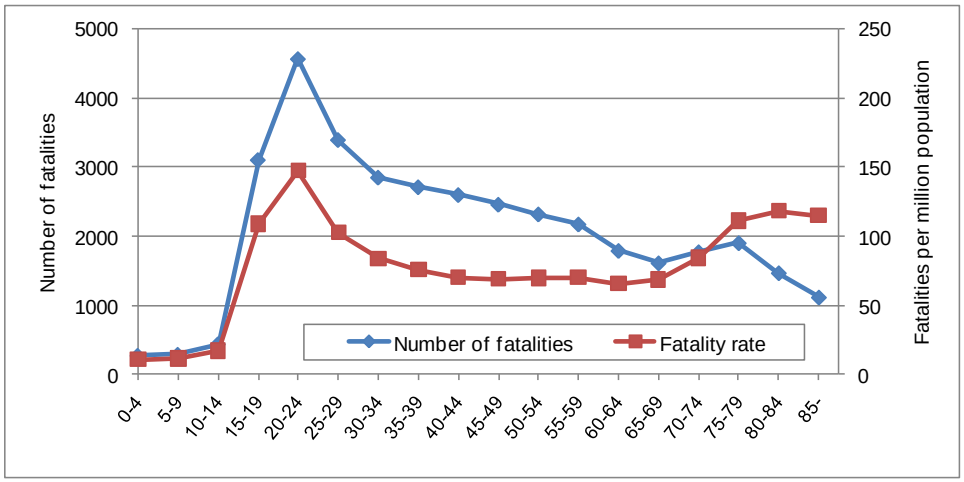

Source: CARE Database / EC
Date of query: November 2011

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

Figure 2~~Figure 2~~ puts these figures for the elderly in a broader context. It shows the number of fatalities in 2009 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, 2009**




2008 fatality data used for IE and SE

Source: CARE Database / EC
Date of query: November 2011
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 (age 45-64) are at a lower risk of being killed than the elderly.

Table 2~~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, 2009**

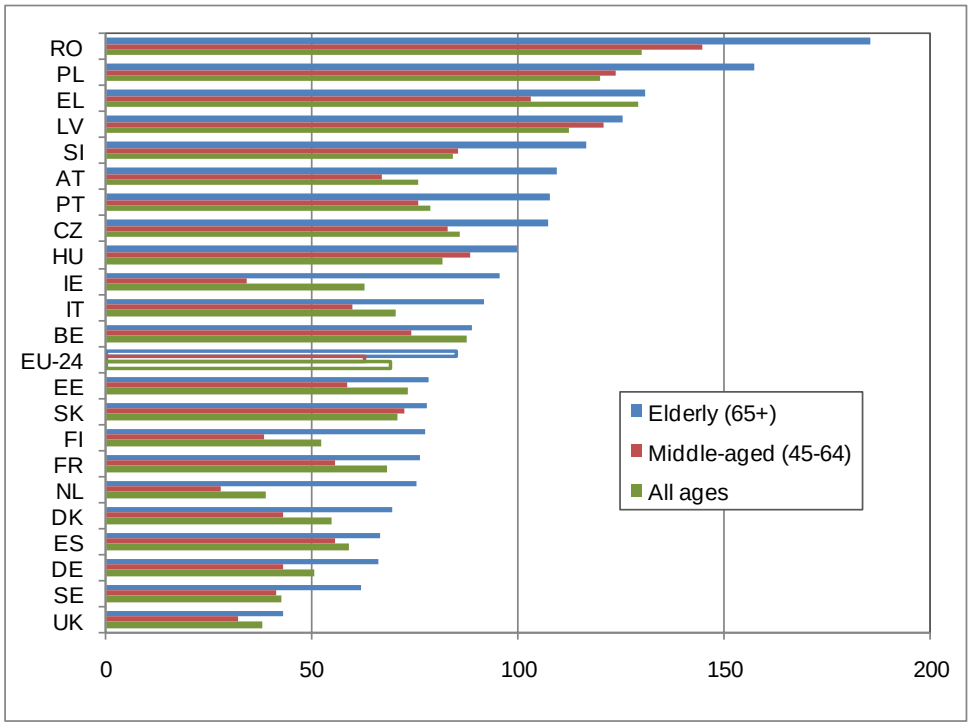
| | Fatality rate | | | Comparisons | |
|---|---|---|---|---|---|
| | Middle-aged (45-64) | Elderly (65+) | All ages | Elderly / Middle-aged | Elderly / All ages |
| BE | 74 | 89 | 88 | 1.20 | 1.01 |
| CZ | 83 | 107 | 86 | 1.29 | 1.25 |
| DK | 43 | 70 | 55 | 1.61 | 1.27 |
| DE | 43 | 66 | 51 | 1.54 | 1.31 |
| EE | 58 | 78 | 73 | 1.34 | 1.07 |
| IE | 34 | 96 | 63 | 2.79 | 1.52 |
| EL | 103 | 131 | 129 | 1.27 | 1.01 |
| ES | 56 | 66 | 59 | 1.19 | 1.12 |
| FR | 56 | 76 | 68 | 1.38 | 1.12 |
| IT | 60 | 92 | 70 | 1.53 | 1.31 |
| LV | 121 | 125 | 112 | 1.04 | 1.12 |
| LU | 104 | 131 | 97 | 1.26 | 1.35 |
| HU | 88 | 100 | 82 | 1.13 | 1.22 |
| MT | 25 | 86 | 36 | 3.40 | 2.37 |
| NL | 28 | 76 | 39 | 2.71 | 1.94 |
| AT | 67 | 110 | 76 | 1.63 | 1.45 |
| PL | 124 | 157 | 120 | 1.27 | 1.31 |
| PT | 76 | 108 | 79 | 1.42 | 1.37 |
| RO | 145 | 186 | 130 | 1.28 | 1.43 |
| SI | 85 | 117 | 84 | 1.37 | 1.39 |
| SK | 72 | 78 | 71 | 1.08 | 1.10 |
| FI | 39 | 77 | 52 | 2.01 | 1.48 |
| SE | 41 | 62 | 43 | 1.50 | 1.45 |
| UK | 32 | 43 | 38 | 1.34 | 1.14 |
| EU-24 | 63 | 85 | 69 | 1.36 | 1.23 |

2008 fatality data used for IE and SE

Source: CARE Database / EC
Date of query: November 2011
Source of population data: EUROSTAT

Romania and Poland have the highest overall fatality rates, and they also have the highest rates for the elderly. The three sets of fatality rates are illustrated in Figure 3~~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, 2009**




2008 fatality data used for IE and SE

Source: CARE Database / EC
Date of query: November 2011
Source of population data: EUROSTAT

## Age and gender

Table 3~~Table 3~~ gives more details of the age groups and of the gender distribution of elderly fatalities, using three age ranges. Almost two thirds (62%) of elderly fatalities are men.

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

**Table 3: Number of elderly fatalities by age group, gender and country, 2009**

| | Proportion by age | | | Proportion by gender | | Total |
|---|---|---|---|---|---|---|
| | 65-74 | 75-84 | 85+ | male | female | |
| **BE** | 44% | 40% | 16% | 63% | 37% | 163 |
| **CZ** | 46% | 41% | 13% | 58% | 42% | 167 |
| **DK** | 36% | 39% | 25% | 54% | 46% | 61 |
| **DE** | 45% | 41% | 15% | 59% | 41% | 1.104 |
| **EE** | 61% | 33% | 6% | 56% | 44% | 18 |
| **IE** | 43% | 48% | 9% | 59% | 41% | 46 |
| **EL** | 44% | 48% | 7% | 73% | 27% | 275 |
| **ES** | 46% | 40% | 14% | 65% | 35% | 507 |
| **FR** | 36% | 44% | 20% | 57% | 43% | 796 |
| **IT** | 43% | 44% | 14% | 69% | 31% | 1.111 |
| **LV** | 43% | 24% | 33% | 71% | 29% | 49 |
| **LU** | 44% | 56% | 0% | 44% | 56% | 9 |
| **HU** | 54% | 33% | 13% | 61% | 39% | 166 |
| **MT** | 100% | 0% | 0% | 80% | 20% | 5 |
| **NL** | 34% | 47% | 20% | 64% | 36% | 187 |
| **AT** | 44% | 41% | 15% | 65% | 35% | 159 |
| **PL** | 46% | 44% | 10% | 58% | 42% | 810 |
| **PT** | 48% | 45% | 7% | 72% | 28% | 205 |
| **RO** | 51% | 42% | 8% | 63% | 37% | 593 |
| **SI** | 36% | 54% | 10% | 62% | 38% | 39 |
| **SK** | 51% | 33% | 16% | 53% | 47% | 51 |
| **FI** | 35% | 43% | 22% | 68% | 32% | 69 |
| **SE** | 40% | 41% | 19% | 61% | 39% | 102 |
| **UK** | 34% | 41% | 26% | 55% | 45% | 432 |
| **EU-24** | 43% | 42% | 14% | 62% | 38% | 7.124 |

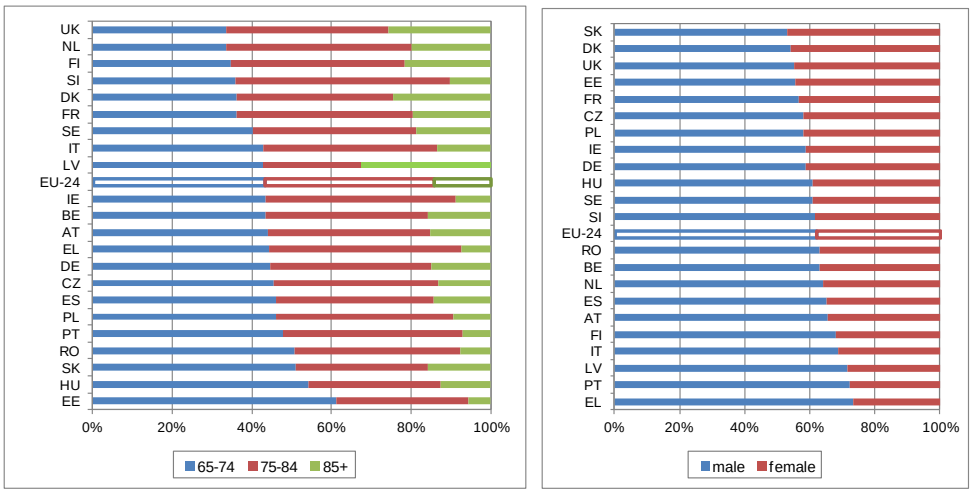
2008 fatality data used for IE and SE

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

Women make up a higher proportion of fatalities among the elderly (38%) than within the whole population (24%). Figure 4~~Figure 4~~ illustrates the results from Table 3~~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 Slovakia (47%) and Denmark (46%). The highest proportions of elderly fatalities aged 65-74 occur in Estonia (61%) and Hungary (57%).

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

**Figure 4: Proportion of elderly fatalities by age group, gender and country, 2009**




2008 fatality data used for IE and SE

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

Table 4~~Table 4~~ calculates the rate of fatalities per million population for the three age groups in Table 3~~Table 3~~. The 75-84 age group has the highest fatality rate, averaged over the EU-23, 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.

Table 4: Fatality rates of the elderly by age group, gender and country, 2009

| | Fatality rate by age | | | Fatality rate by gender | | All elderly |
|---|---|---|---|---|---|---|
| | 65-74 | 75-84 | 85+ | Male | Female | |
| BE | 78 | 94 | 117 | 134 | 56 | 89 |
| CZ | 87 | 125 | 161 | 157 | 75 | 107 |
| DK | 45 | 87 | 138 | 86 | 57 | 70 |
| DE | 51 | 85 | 95 | 92 | 48 | 66 |
| EE | 86 | 74 | 51 | 132 | 52 | 78 |
| IE | 72 | 137 | 73 | 123 | 70 | 94 |
| EL | 109 | 164 | 116 | 218 | 62 | 131 |
| ES | 62 | 70 | 76 | 102 | 40 | 66 |
| FR | 58 | 88 | 105 | 105 | 56 | 76 |
| IT | 76 | 112 | 99 | 151 | 49 | 92 |
| LV | 93 | 89 | 535 | 274 | 53 | 125 |
| LU | 110 | 197 | 0 | 138 | 125 | 131 |
| HU | 98 | 97 | 119 | 168 | 61 | 100 |
| NL | 47 | 104 | 130 | 112 | 48 | 76 |
| AT | 89 | 132 | 139 | 174 | 64 | 110 |
| PL | 134 | 189 | 172 | 243 | 106 | 157 |
| PT | 98 | 135 | 70 | 189 | 51 | 108 |
| RO | 161 | 220 | 218 | 287 | 116 | 186 |
| SI | 75 | 177 | 137 | 184 | 74 | 117 |
| SK | 70 | 75 | 147 | 111 | 59 | 78 |
| FI | 51 | 95 | 145 | 129 | 42 | 77 |
| SE | 48 | 76 | 78 | 85 | 44 | 62 |
| UK | 28 | 51 | 82 | 54 | 34 | 43 |
| EU-23 | 69 | 102 | 105 | 127 | 55 | 85 |

2008 fatality data used for IE and SE

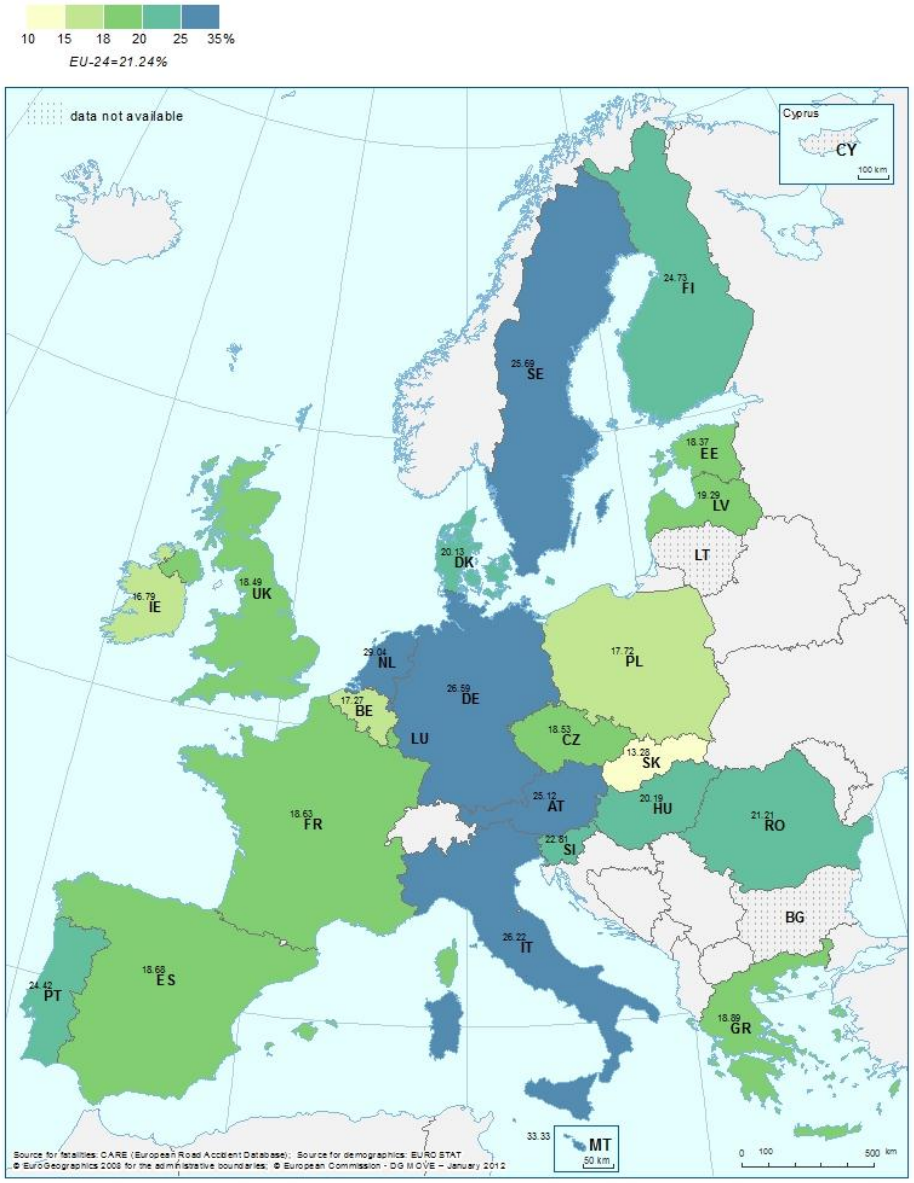
Source: CARE Database / EC

Date of query: November 2011

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

Map 1 shows the proportion of fatalities that were elderly (at least 65 years old) by country in 2009. Among the larger countries, this ranged between 18% in Poland and the United Kingdom to 29% in the Netherlands.

**Map 1: Proportion of fatalities that were elderly by country, 2009**




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

## Road user type

Table 5~~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. 41% of elderly fatalities were pedestrians in the EU-23 countries. Among the larger countries, the percentage of elderly fatalities who were pedestrians is greatest in Romania (67%) and least in the Netherlands (13%). Conversely, the proportion of elderly fatalities who were car drivers ranged between 5% in Romania and 49% in Sweden. The results are illustrated in Figure 5~~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.

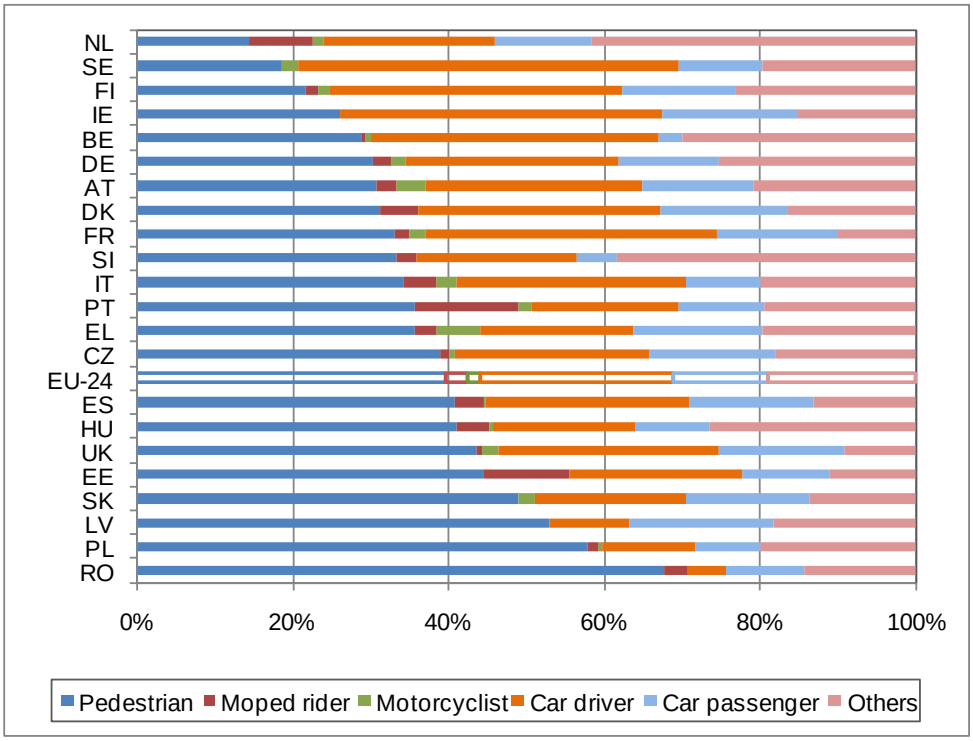
**Table 5: Number of elderly fatalities by road user type, 2009**

| | Pedestrian | Moped rider | Motor-cyclist | Car driver | Car passenger | Others | Total |
|---|---|---|---|---|---|---|---|
| BE | 29% | 1% | 1% | 37% | 3% | 30% | 163 |
| CZ | 39% | 1% | 1% | 25% | 16% | 18% | 167 |
| DK | 31% | 5% | 0% | 31% | 16% | 16% | 61 |
| DE | 30% | 2% | 2% | 27% | 13% | 25% | 1.104 |
| EE | 44% | 11% | 0% | 22% | 11% | 11% | 18 |
| IE | 26% | 0% | 0% | 41% | 17% | 15% | 46 |
| EL | 36% | 3% | 5% | 20% | 17% | 20% | 275 |
| ES | 41% | 4% | 0% | 26% | 16% | 13% | 507 |
| FR | 33% | 2% | 2% | 37% | 15% | 10% | 796 |
| IT | 34% | 4% | 3% | 29% | 10% | 20% | 1.111 |
| LV | 53% | 0% | 0% | 10% | 18% | 18% | 49 |
| LU | 56% | 0% | 0% | 33% | 11% | 0% | 9 |
| HU | 41% | 4% | 1% | 18% | 10% | 27% | 166 |
| NL | 40% | 0% | 0% | 40% | 20% | 0% | 5 |
| MT | 14% | 8% | 2% | 22% | 12% | 42% | 187 |
| AT | 31% | 3% | 4% | 28% | 14% | 21% | 159 |
| PL | 58% | 2% | 0% | 12% | 8% | 20% | 810 |
| PT | 36% | 13% | 2% | 19% | 11% | 19% | 205 |
| RO | 68% | 3% | 0% | 5% | 10% | 14% | 593 |
| SI | 33% | 3% | 0% | 21% | 5% | 38% | 39 |
| SK | 49% | 0% | 2% | 20% | 16% | 14% | 51 |
| FI | 22% | 1% | 1% | 38% | 14% | 23% | 69 |
| SE | 19% | 0% | 2% | 49% | 11% | 20% | 102 |
| UK | 44% | 1% | 2% | 28% | 16% | 9% | 432 |
| EU-24 | 40% | 3% | 2% | 25% | 12% | 19% | 7.124 |

2008 fatality data used for IE and SE

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

**Figure 5: Distribution of elderly fatalities by road user type, 2009**




2008 fatality data used for IE and SE

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

Table 6~~Table 6~~ now shows the corresponding proportions of fatalities who were elderly so, for example, 47 of the 101 pedestrian fatalities in Belgium were elderly and 47/101=47%. Cases with less than 50 fatalities are excluded from Table 6~~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, 2009**

| | Pedestrian | Moped rider | Motor-cyclist | Car occupant | Others | Total |
|---|---|---|---|---|---|---|
| BE | 47% | | 1% | 14% | 23% | 17% |
| CZ | 37% | | 1% | 14% | 22% | 19% |
| DK | 37% | | | 18% | | 20% |
| DE | 57% | 24% | 3% | 21% | 40% | 27% |
| EE | | | | 11% | | 18% |
| IE | | | | 17% | | 17% |
| EL | 49% | | 4% | 15% | 38% | 19% |
| ES | 44% | 12% | 0% | 17% | 17% | 19% |
| FR | 53% | 5% | 2% | 19% | 20% | 19% |
| IT | 57% | 22% | 3% | 24% | 42% | 26% |
| LV | 32% | | | 12% | | 19% |
| LU | | | | | | |
| HU | 37% | | 1% | 12% | 29% | 20% |
| MT | | | | | | |
| NL | 43% | | 4% | 22% | 44% | 29% |
| AT | 49% | | 7% | 21% | 37% | 25% |
| PL | 32% | 19% | 1% | 8% | 29% | 18% |
| PT | 49% | 47% | 3% | 20% | 18% | 24% |
| RO | 40% | 14% | 1% | 8% | 20% | 21% |
| SI | | | | 17% | 26% | 23% |
| SK | 22% | | | 10% | 13% | 13% |
| FI | | | | 22% | | 25% |
| SE | | | 4% | 26% | 36% | 26% |
| UK | 36% | | 2% | 17% | 20% | 18% |
| EU-23 | 42% | 17% | 2% | 17% | 29% | 21% |

Percentages only for cells with at least 50 fatalities of all ages. 2008 fatality data used for IE and SE

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

## Type of road

Table 7~~Table 7~~ and Figure 6~~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, 2009**

| | Elderly (65+) | | | | Middle-aged (45-64) | | | |
|---|---|---|---|---|---|---|---|---|
| | Motorway | Non-motorway | | Total | Motorway | Non-motorway | | Total |
| | | Rural | Urban | | | Rural | Urban | |
| BE | 6% | 43% | 45% | 163 | 17% | 52% | 26% | 212 |
| CZ | 1% | 43% | 56% | 167 | 2% | 62% | 36% | 237 |
| DK | 2% | 57% | 41% | 61 | 9% | 61% | 30% | 64 |
| DE | 5% | 45% | 50% | 1.104 | 14% | 60% | 25% | 963 |
| EE | 0% | 0% | 0% | 18 | 0% | 0% | 0% | 20 |
| IE | 2% | 0% | 0% | 47 | 0% | 0% | 0% | 34 |
| EL | 6% | 10% | 1% | 275 | 8% | 18% | 3% | 300 |
| ES | 10% | 57% | 33% | 507 | 18% | 65% | 17% | 627 |
| FR | 5% | 56% | 40% | 796 | 6% | 71% | 24% | 899 |
| IT | 4% | 39% | 57% | 1.111 | 11% | 49% | 40% | 944 |
| LV | 0% | 61% | 39% | 49 | 0% | 80% | 20% | 70 |
| LU | 44% | 0% | 44% | 9 | 62% | 0% | 31% | 13 |
| HU | 1% | 39% | 60% | 166 | 4% | 61% | 36% | 236 |
| NL | 5% | 47% | 45% | 187 | 16% | 46% | 36% | 127 |
| AT | 5% | 52% | 43% | 159 | 14% | 59% | 27% | 147 |
| PL | 1% | 30% | 40% | 810 | 1% | 51% | 31% | 1.280 |
| PT | 4% | 41% | 54% | 205 | 12% | 48% | 41% | 206 |
| RO | 1% | 18% | 81% | 593 | 1% | 37% | 62% | 766 |
| SI | 13% | 38% | 49% | 39 | 19% | 44% | 38% | 48 |
| SK | 0% | 43% | 57% | 51 | 3% | 45% | 51% | 103 |
| FI | 1% | 71% | 28% | 69 | 5% | 73% | 22% | 59 |
| SE | 4% | 54% | 35% | 102 | 5% | 70% | 25% | 99 |
| UK | 3% | 40% | 44% | 432 | 8% | 56% | 25% | 502 |
| EU-24 | 4% | 40% | 47% | 7.125 | 8% | 54% | 31% | 7.959 |

%s do not sum to 100 in countries where road type is unknown for some fatalities.
2008 fatality data used for IE and SE

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

**Figure 6: Distribution of middle-aged and elderly fatalities by road type, 2009**


2008 fatality data used for SE

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

## Day of week and time of day

Table 8~~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, 2009**

| | 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% | 4% | 31% | 28% | 25% | 10% | 163 |
| CZ | 1% | 13% | 27% | 31% | 19% | 10% | 166 |
| DK | 2% | 3% | 34% | 28% | 26% | 7% | 61 |
| EE | 0% | 6% | 33% | 17% | 33% | 11% | 18 |
| IE | 4% | 0% | 19% | 40% | 19% | 17% | 47 |
| EL | 4% | 8% | 21% | 27% | 26% | 14% | 275 |
| ES | 2% | 4% | 24% | 26% | 30% | 14% | 507 |
| FR | 2% | 4% | 29% | 28% | 32% | 6% | 796 |
| IT | 2% | 5% | 32% | 20% | 31% | 9% | 1.103 |
| LV | 2% | 4% | 22% | 16% | 29% | 27% | 49 |
| LU | 11% | 0% | 0% | 33% | 33% | 22% | 9 |
| HU | 1% | 17% | 30% | 22% | 21% | 10% | 166 |
| MT | 0% | 20% | 40% | 0% | 0% | 40% | 5 |
| NL | 1% | 2% | 18% | 44% | 30% | 6% | 186 |
| AT | 2% | 4% | 24% | 34% | 30% | 6% | 159 |
| PL | 1% | 11% | 25% | 19% | 34% | 10% | 810 |
| PT | 3% | 8% | 24% | 23% | 33% | 8% | 205 |
| RO | 1% | 10% | 23% | 21% | 31% | 14% | 593 |
| SI | 5% | 15% | 13% | 26% | 36% | 5% | 39 |
| SK | 0% | 10% | 26% | 14% | 40% | 10% | 50 |
| FI | 0% | 3% | 28% | 41% | 26% | 3% | 69 |
| SE | 3% | 3% | 21% | 46% | 25% | 3% | 102 |
| UK | 2% | 3% | 27% | 33% | 24% | 10% | 432 |
| EU-23 | 2% | 6% | 27% | 25% | 30% | 10% | 6.010 |

Excludes small number of fatalities in CZ, IT and LV with hour unknown. DE is excluded as hour is unknown for all fatalities.

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

Table 9~~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, 2009**

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday | Total |
|---|---|---|---|---|---|---|---|---|
| BE | 10% | 15% | 14% | 15% | 14% | 13% | 19% | 163 |
| CZ | 17% | 14% | 17% | 16% | 14% | 13% | 10% | 167 |
| DK | 13% | 18% | 20% | 15% | 13% | 8% | 13% | 61 |
| DE | 17% | 16% | 16% | 15% | 15% | 12% | 9% | 1.104 |
| EE | 17% | 11% | 6% | 33% | 6% | 22% | 6% | 18 |
| IE | 19% | 21% | 4% | 17% | 15% | 9% | 15% | 47 |
| EL | 15% | 13% | 17% | 11% | 12% | 15% | 17% | 275 |
| ES | 13% | 14% | 15% | 16% | 16% | 14% | 13% | 507 |
| FR | 15% | 16% | 15% | 15% | 14% | 14% | 13% | 796 |
| IT | 15% | 13% | 17% | 15% | 17% | 13% | 9% | 1.111 |
| LV | 12% | 6% | 10% | 14% | 18% | 20% | 18% | 49 |
| LU | 11% | 22% | 11% | 0% | 33% | 0% | 22% | 9 |
| HU | 15% | 8% | 19% | 19% | 19% | 9% | 11% | 166 |
| MT | 0% | 0% | 20% | 0% | 40% | 40% | 0% | 5 |
| NL | 19% | 12% | 16% | 14% | 16% | 15% | 9% | 187 |
| AT | 14% | 16% | 14% | 14% | 17% | 11% | 14% | 159 |
| PL | 14% | 16% | 17% | 13% | 18% | 13% | 10% | 810 |
| PT | 13% | 16% | 12% | 16% | 17% | 14% | 12% | 205 |
| RO | 15% | 11% | 15% | 14% | 16% | 14% | 15% | 593 |
| SI | 8% | 13% | 18% | 23% | 10% | 10% | 18% | 39 |
| SK | 20% | 4% | 25% | 14% | 14% | 12% | 12% | 51 |
| FI | 16% | 17% | 19% | 10% | 22% | 9% | 7% | 69 |
| SE | 14% | 14% | 24% | 19% | 13% | 12% | 6% | 102 |
| UK | 16% | 17% | 13% | 16% | 15% | 14% | 10% | 432 |
| EU-23 | 15% | 14% | 16% | 15% | 16% | 13% | 11% | 7.120 |

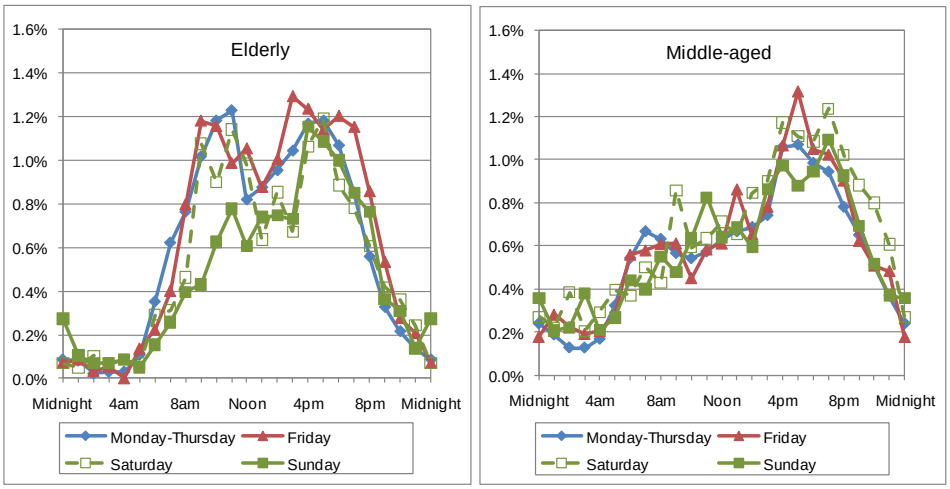
Source: CARE Database / EC
Date of query: November 2011

Figure 7~~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 in each 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, 2009**




Monday-Thursday values are the averages of the daily values from Monday to Thursday

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

## Seasonality

Table 10~~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).

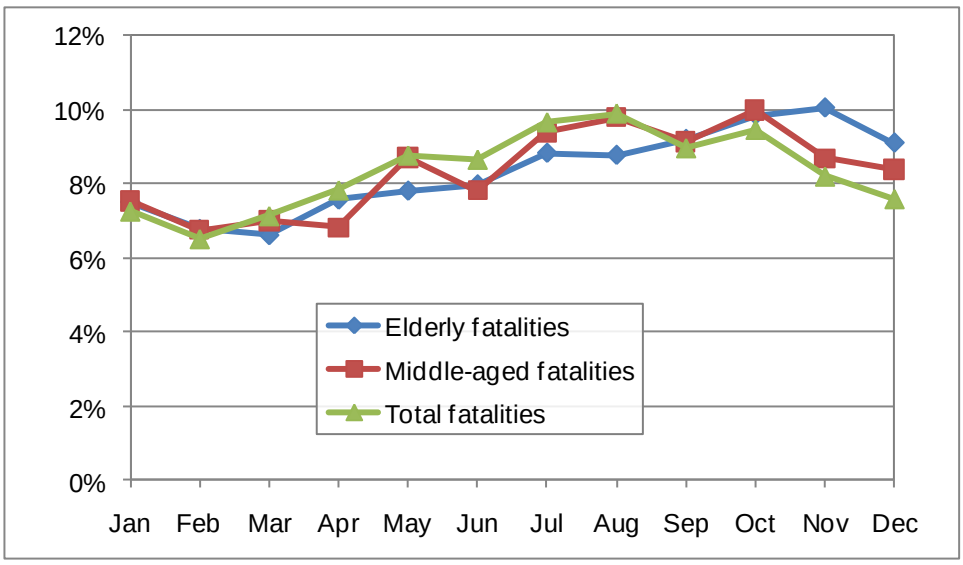
**Table 10: Proportion of elderly fatalities by quarter of year and country, 2009**

| | January - March | April - June | July - September | October - December | Total |
|---|---|---|---|---|---|
| BE | 20% | 25% | 27% | 29% | 163 |
| CZ | 21% | 17% | 27% | 35% | 167 |
| DK | 23% | 33% | 26% | 18% | 61 |
| DE | 20% | 24% | 27% | 29% | 1.104 |
| EE | 11% | 11% | 50% | 28% | 18 |
| IE | 21% | 32% | 26% | 21% | 47 |
| EL | 16% | 24% | 31% | 29% | 275 |
| ES | 26% | 26% | 25% | 23% | 507 |
| FR | 22% | 23% | 26% | 28% | 796 |
| IT | 20% | 25% | 26% | 29% | 1.111 |
| LV | 31% | 22% | 18% | 29% | 49 |
| LU | 56% | 22% | 0% | 22% | 9 |
| HU | 25% | 23% | 22% | 30% | 166 |
| MT | 0% | 0% | 0% | 100% | 5 |
| NL | 18% | 23% | 30% | 29% | 187 |
| AT | 21% | 23% | 26% | 29% | 159 |
| PL | 19% | 20% | 28% | 34% | 810 |
| PT | 21% | 21% | 29% | 30% | 205 |
| RO | 16% | 24% | 29% | 30% | 593 |
| SI | 23% | 33% | 26% | 18% | 39 |
| SK | 18% | 31% | 25% | 25% | 51 |
| FI | 26% | 19% | 30% | 25% | 69 |
| SE | 21% | 25% | 28% | 25% | 102 |
| UK | 29% | 20% | 23% | 28% | 432 |
| EU-24 | 21% | 23% | 27% | 29% | 7.125 |

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

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 occurs between February and April. The number of elderly fatalities rises relatively slowly to a peak in October, then declines relatively slowly.

**Figure 8: Distribution of middle-aged, elderly and total fatalities by month in EU-24, 2009**




There are relatively few elderly fatalities in the spring and summer, and relatively many during the winter.

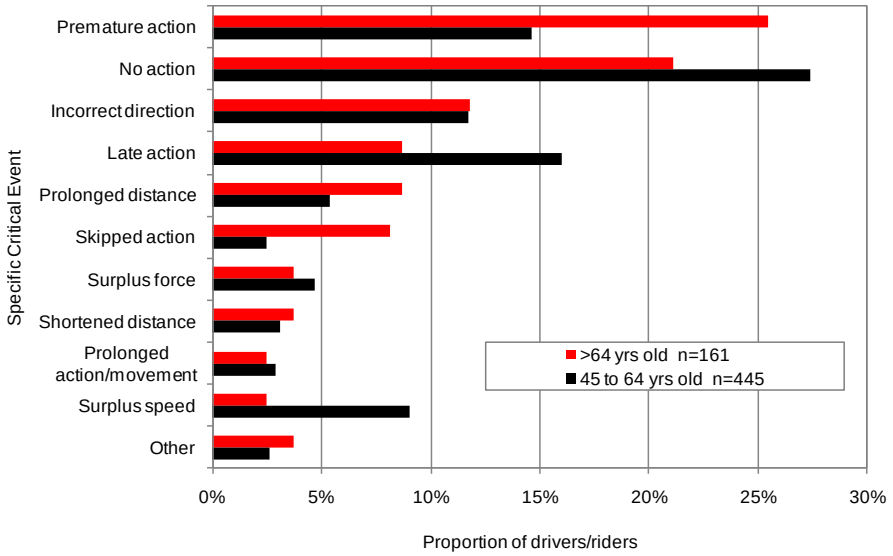
## Accident Causation

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

**Table 11: 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).

## 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

## 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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