



European Road Safety Observatory

Facts and Figures - Seniors - 2023

This document is part of a series of 16 *Facts and Figures* reports. The purpose of these *Facts and Figures* reports is to provide recent statistics related to a specific road safety topic, for example a specific age group or transport mode. The *Facts and Figures* reports replace the Basic Fact Sheets series that were available until 2018 (containing data up to 2016). The most recent figures in this *Facts and Figures* report of 2023 refer to 2020. These reports can be found on the ERSO website (https://road-safety.transport.ec.europa.eu/statistics-and-analysis/data-and-analysis/facts-and-figures_en)

Contract	This document has been prepared in the framework of the EC Service Contract MOVE/C2/SER/2019-100/SI2.822066 with Vias institute (BE) and SWOV Institute for Road Safety Research (NL).
Version	Version 1.0, January 2023
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Referencing	Reproduction of this document is allowed with due acknowledgement. Please refer to the document as follows: European Commission (2021) Facts and Figures Seniors. European Road Safety Observatory. Brussels, European Commission, Directorate General for Transport.
Sources	Information in this document is based largely on data in the CARE database (Community database on Accidents on the Roads in Europe). Other data are taken from Eurostat. Date of extraction: 6 February 2023

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1 Key Facts

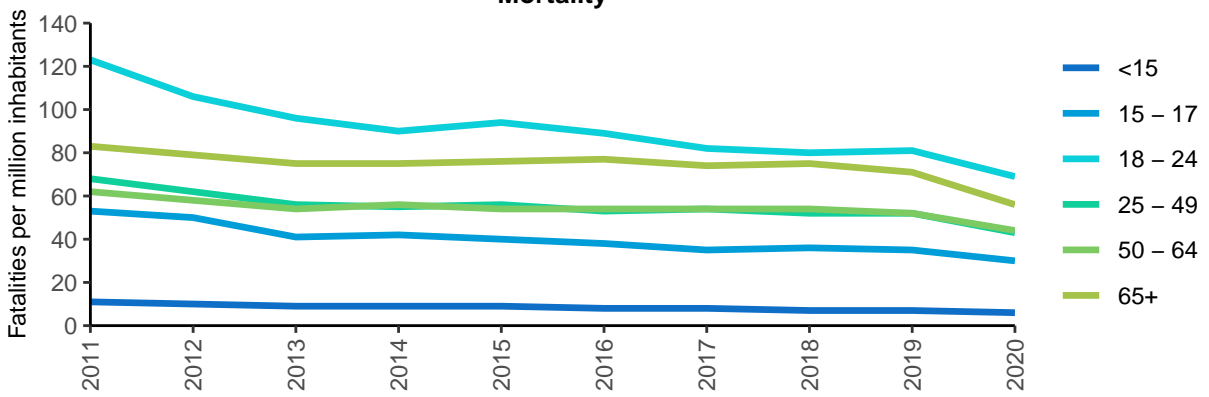
In this Facts and Figures report, seniors are discussed. All differences reported were derived from the available data and not statistically tested.

Senior Fatalities 2020



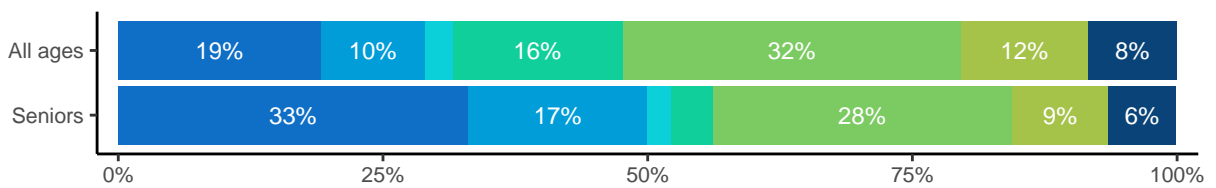
- 5,180 fatalities
- 26% of all road fatalities

Mortality



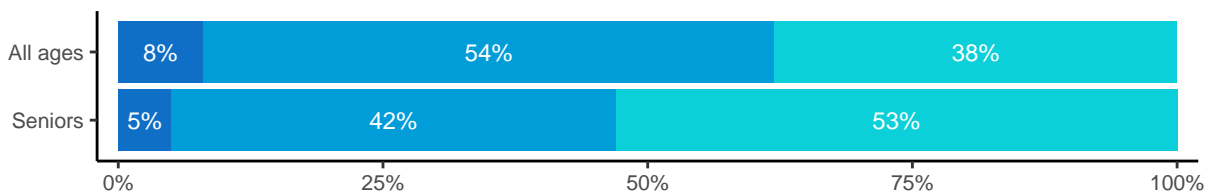
Transport mode

- Pedestrian
- Cyclist
- Moped rider
- Motorcyclist
- Car driver
- Car passenger
- Other/unknown



Road type

- Motorway
- Rural
- Urban



2 Summary

Seniors – persons aged 65 years and older – stand out from other age groups because of their high **physical vulnerability**. With the same collision impact, they have a higher chance of dying than other age groups. They also have the **second highest mortality rate**. Only the 18-24 year old age group has a (slightly higher) number of fatalities per million inhabitants.

Comparison between EU countries gives a different picture depending on the indicator used. According to the mortality indicator the countries in the east of the EU had the worst scores, but in terms of the proportion of seniors within the total number of road fatalities other countries including those in Nordic countries tended to score less well.

The absolute number of senior fatalities between 2011 and 2018 increased by 3% to almost 6,700 fatalities on the roads, but decreased slightly in 2019 (-4% compared to 2018) and again in 2020 (-23% between 2019 and 2020). As the total number of road fatalities was decreasing, **their relative share increased even more sharply from 22% in 2011 to 26% in 2020**. The lowest decrease in the number of fatalities occurs in the two outer age categories: -6% among 65-69 year olds and -11% among people over 85. These are also the two age categories in which the population has increased the most.

Compared to all fatalities combined, senior fatalities were more often women (32% among seniors versus 22% among all fatalities). In terms of transport mode, seniors had a very high death toll among the most vulnerable modes of transport: **33% of seniors killed were pedestrians, 17% were cyclists**. These are only EU averages, with even higher percentages in half of EU countries. In some central and east European Member States, namely Romania and Lithuania, more than one in two senior fatalities was a pedestrian. Belgium and the Netherlands have a large share of cyclists among senior fatalities.

Senior road fatalities also differed from all fatalities combined in terms of the time and location of the fatal crashes:

- Seniors were more often killed in daytime during the working week (52% versus 60% among all age groups).
- There were proportionately more fatalities on urban roads (53% versus 38%) and consequently fewer on rural roads and motorways.
- They were relatively more often killed at intersections (19% versus 12%) and less often (but still frequently) on road stretches (70% versus 74%).
- Fatalities among senior car drivers were less often involved in a single crash, i.e. a crash in which only one vehicle and no pedestrians are involved (37% versus 44%).

The impact of the global COVID-19 pandemic on the CARE data for 2020 is clear. Traffic volumes dropped sharply during the pandemic, which was associated with a significant drop in road traffic crashes and fatalities.

Basic definitions*Seniors:*

Persons aged 65 years and older.

Fatalities:

Total number of persons fatally injured; correction factors applied when needed. Death within 30 days of the road crash, confirmed suicide and natural death are not included.

Seriously injured:

Total number of seriously injured persons corrected by correction factors when needed. Injured (although not killed) in the road crash and, in principle, hospitalised for at least 24 hours within 30 days from the crash.

More detailed data:

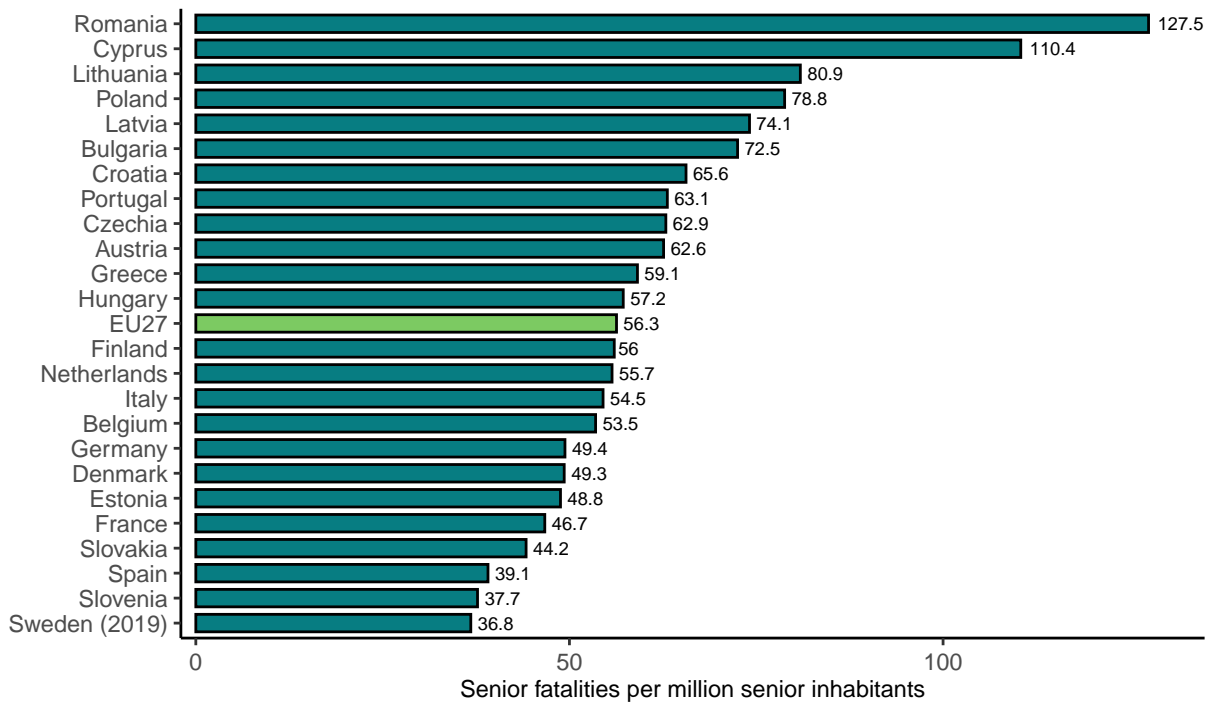
This Facts and Figures report is accompanied by an excel file (available online) containing a large set of additional detailed data. Each sheet in the excel file corresponds to a Figure/Table in the report.

3 Main trends

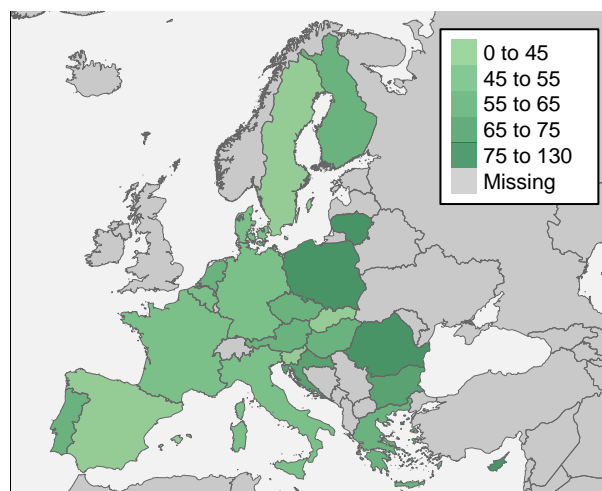
3.1 Mortality rate: number of road fatalities per million inhabitants

The number of senior fatalities per million senior inhabitants is above the EU27 average in the central and **east European Member States**. Portugal also lies well above the EU average.

Figure 1. Senior fatalities per million senior inhabitants per country in the EU27 (2020). Source: CARE, EUROSTAT



Note: countries that are not included in the Figure are Ireland, Malta and Luxembourg because of small numbers



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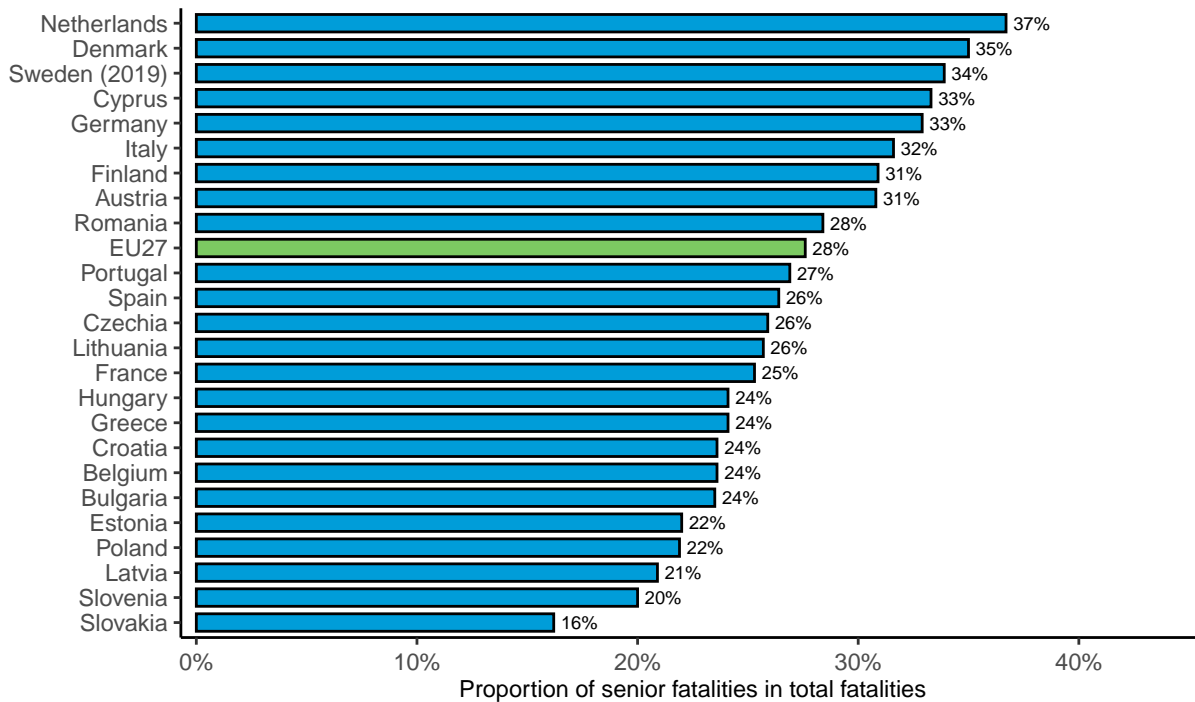
3.2 Number of fatalities among seniors as a proportion of total fatalities

Mortality is an important indicator, but does not take into account differences in the general state of road safety in countries. In other words, it is possible that the mortality for seniors is high because

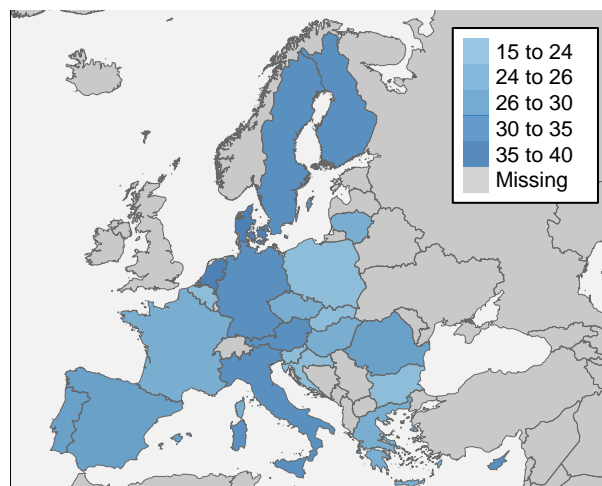
the total mortality for all age groups is high. Therefore, it is important to also look at the proportion or share of senior fatalities within the total number of road fatalities.

Observations for senior fatalities based on the share of senior fatalities in the total number of fatalities are different from those based on the mortality rate. Most central and eastern European Member States have a better ranking when it comes to the share of seniors killed in the total number of fatalities than on the mortality rate, which means that the high road mortality for seniors in those countries can partly be explained by the high mortality for all road users, regardless of their age.

Figure 2. Proportion of senior fatalities in the total number of fatalities, per country in the EU27 (2020). Source: CARE



Note: countries that are not included in the Figure are Ireland, Malta and Luxembourg because of small numbers

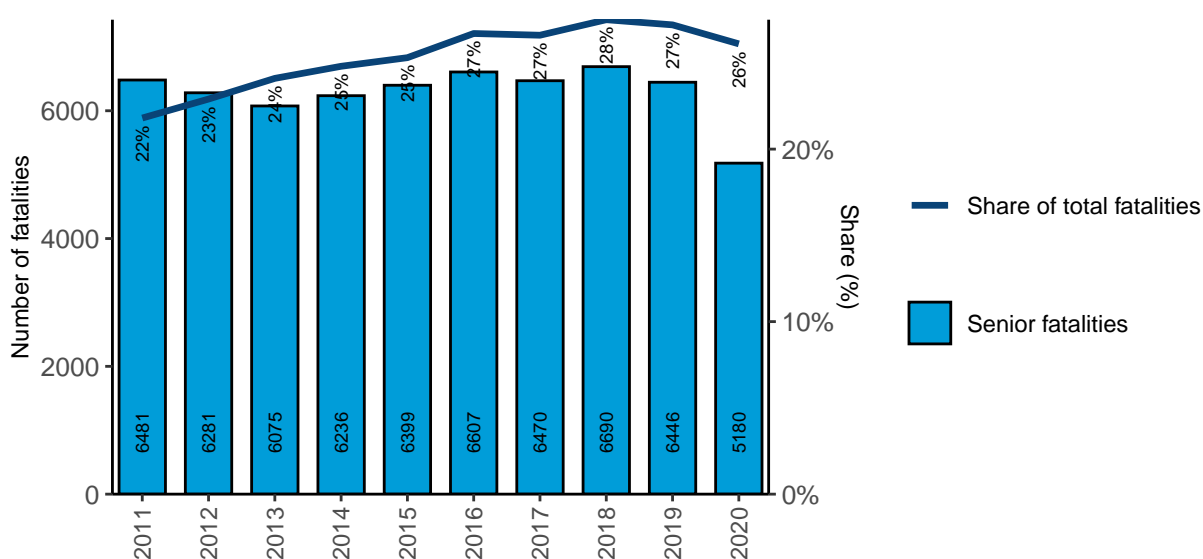


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3.3 Trend in the number of fatalities

The number of senior fatalities increased between 2011 and 2018 with 3%, but decreased again since 2018 (with 4% between 2018 and 2019 and with 23% between 2019 and 2020). Since the total number of road fatalities (all ages combined) decreased by 34% during the same period, the proportion of senior fatalities in the total number has increased sharply until 2019. This share has grown from 22% in 2010 to 27% in 2019. We have seen a fairly constant increase in this share since 2011, while there is a stagnation of this share in 2019. The increase of seniors in the total number of road fatalities can only partly be explained by an increase in the share of seniors in the population, which increased by two percentage points from 18% to 21% between 2011 and 2020.

Figure 3. Annual number of senior fatalities, and their share in the total number of fatalities in the EU27 (2011-2020). Source: CARE



The group of seniors is broken down into age categories in the Table below. **The lowest decrease in the number of fatalities occurs in the two outer age categories: -6% among 65-69 year olds and -11% among people over 85.** These are also the two age categories in which the population has increased the most.

Table 1. Annual number of senior fatalities by 5-year age categories (2011-2020). Source: CARE

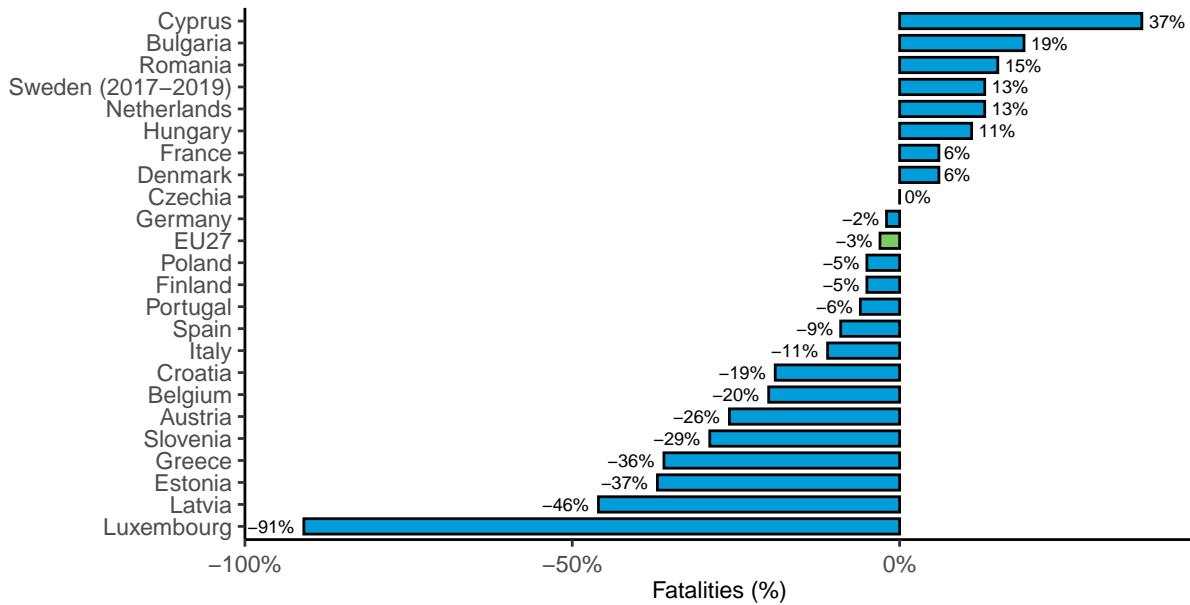
	2011	2018	2019	2020	Trend fatalities 2011 - 2020	Trend population 2011 - 2020
65-69	1,244	1,462	1,423	1,173	-6%	25%
70-74	1,515	1,370	1,291	1,148	-24%	11%
75-79	1,562	1,361	1,320	980	-37%	7%
80-84	1,222	1,276	1,247	1,040	-15%	16%
85+	938	1,221	1,165	839	-11%	36%
Total	6,481	6,690	6,446	5,180	-20%	18%

The evolution of senior fatalities for individual EU countries is calculated by comparing three-year averages, i.e. 2018-2020 versus 2011-2013. Using this trend indicator we see a very slight decrease of -3% for the EU as a whole, a factual status quo.

Countries that show the least favourable trend are: Cyprus, Bulgaria, Romania, Sweden and the

Netherlands. **Germany and Italy have the highest number of senior fatalities.** Germany shows a slight decrease since 2011 while the number of senior fatalities has decreased significantly since 2011.

Figure 4. Percentage change in the number of senior fatalities per country in the EU27 (2011-2013 and 2018-2020). Source: CARE



Notes:
 - Countries that are not included in the Figures are Ireland, Lithuania, Malta and Slovakia because these countries have missing values in the time series 2011-2020
 - For Sweden, the trend is calculated by comparing data from the time period 2011-2013 to data from the time period 2017-2019

Table 2. Number of and trend in fatalities on motorways per country in the EU27 and EFTA (2011-2013 versus 2018-2020).
Source: CARE

	2011	2018	2019	2020	Trend 2018 - 2020 vs 2011 - 2013	Miniplot: trend since 2010
Austria	151	122	128	107	-21%	
Belgium	183	170	168	119	-17%	
Bulgaria	121	152	163	110	23%	
Croatia	75	79	59	57	-16%	
Cyprus	13	11	21	17	59%	
Czechia	142	168	155	135	0%	
Denmark	64	51	64	58	6%	
Estonia	20	15	15	14	-27%	
EU27	6482	6691	6447	5181	-3%	
Finland	83	80	55	70	-5%	
France	760	843	846	643	6%	
Germany	1045	1046	1038	895	-2%	
Greece	261	225	182	142	-26%	
Hungary	147	185	156	112	12%	
Iceland	2	3	1	1		
Ireland	38	-	-	-		
Italy	1039	1062	995	757	-10%	
Latvia	44	31	22	30	-32%	
Lithuania	-	41	46	46		
Luxembourg	4	5	3	6		
Malta	-	3	8	-		
Netherlands	189	216	217	190	15%	
Norway	37	31	31	21	-24%	
Poland	704	700	665	546	-5%	
Portugal	265	231	242	145	-6%	
Romania	454	564	540	468	18%	
Slovakia	-	46	52	41		
Slovenia	24	16	29	17	-22%	
Spain	486	499	493	363	-8%	
Sweden	92	121	76	-		
Switzerland	118	93	75	97	-15%	

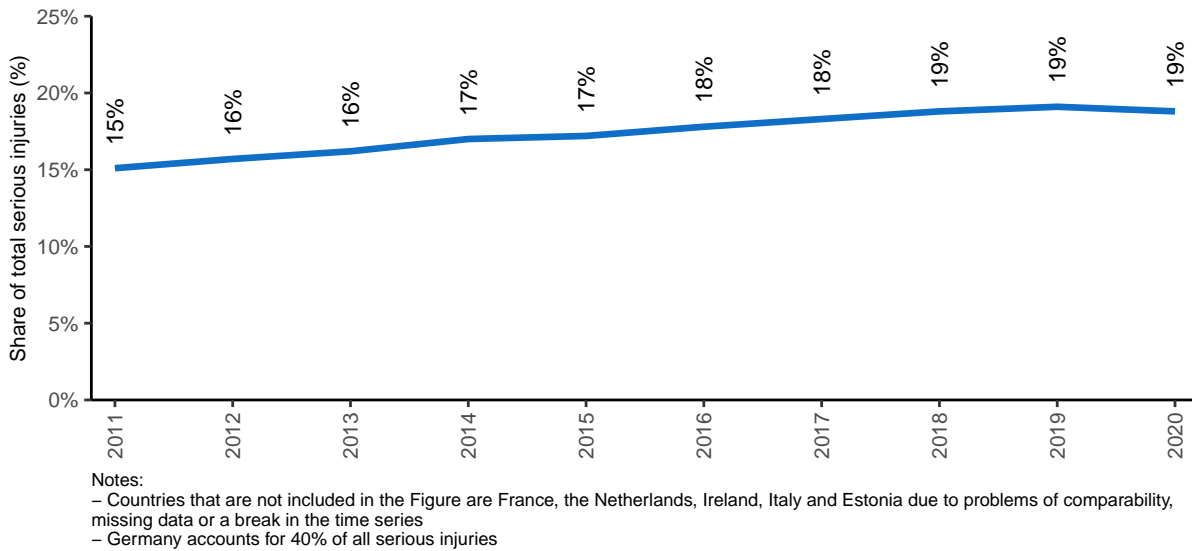
Note:

The trend is not shown if there are less than 10 fatalities in one year or if there is data missing in the time periode 2010-2019

3.4 Trend in the number of serious injuries

Of all serious injuries in the EU27 in 2020, 19% are seniors. The relative proportion of serious injuries has increased in the time period 2011-2020.

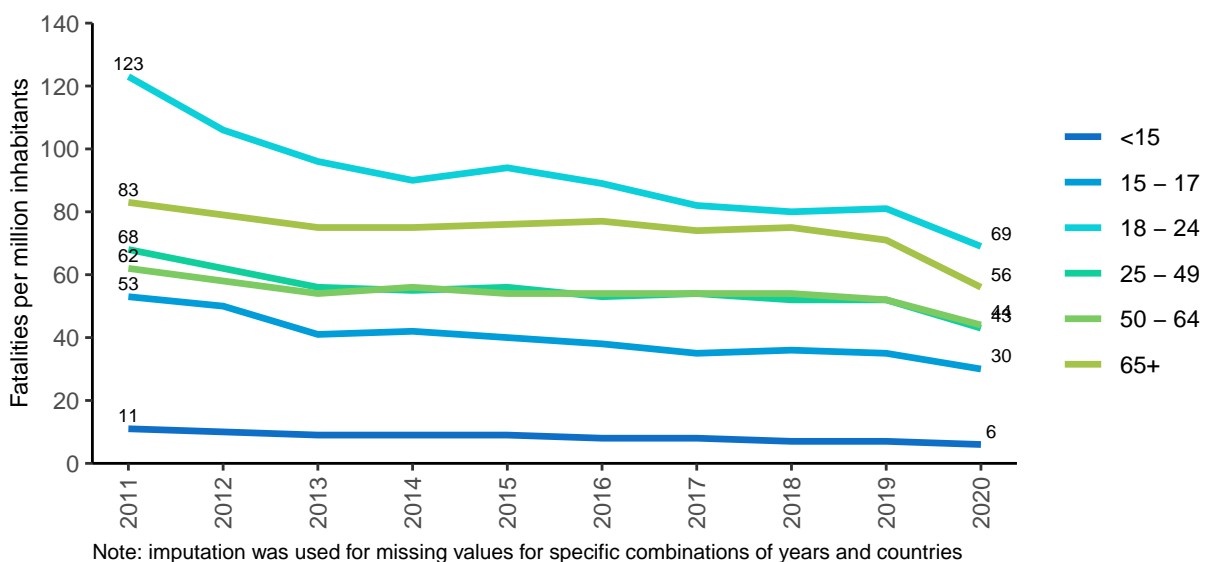
Figure 5. Share of serious injuries for seniors in the total number of serious injuries in the EU27 (2011-2020). Source: CARE



3.5 Comparison of seniors with other age groups

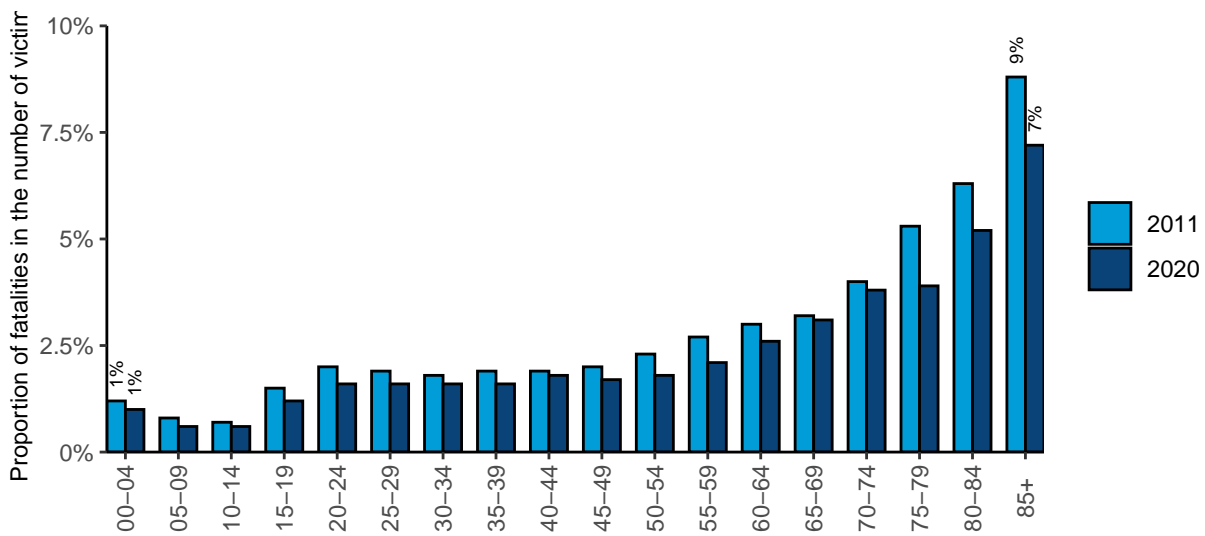
The following rule generally applies: the higher the age, the higher the mortality. This is demonstrated by the Figure below. Only 18-24 year olds form an exception to this rule. In 2020 they have the highest mortality - still slightly higher than for seniors. However, these two age groups show different trends since 2011: while the mortality of young people has almost halved since 2011, **the mortality for seniors has the least positive trend across all age groups.** If these trends continue, mortality among 18-24 year olds will drop below that of the over-65s in the coming years.

Figure 6. Annual number of fatalities per million inhabitants (=mortality) by age group in the EU27 (2011-2020). Source: CARE & EUROSTAT



High physical vulnerability in seniors is one of the reasons for the high mortality rate in this group: with the same collision impact, seniors usually suffer more severe injuries relative to other age groups (e.g. seniors are prone to hip fractures). And with a similar injury, older people take longer to heal (*Road safety thematic report Seniors*). The Figure below shows the share of fatalities in the total number of registered traffic victims per 5-year age category. In 2020, 7% of registered victims of at least 85 years of age died in the crash, compared to 0.5% of 10-14 year olds, the age category with the lowest score on this indicator. Note that traffic victims are underreported in accident statistics and that the ratio “number of fatalities” to “number of victims” would be lower for all age groups if there were no underreporting.

Figure 7. Proportion of fatalities in the total number of reported victims (=vulnerability) by age group in the EU27 (2011 & 2020). Source: CARE

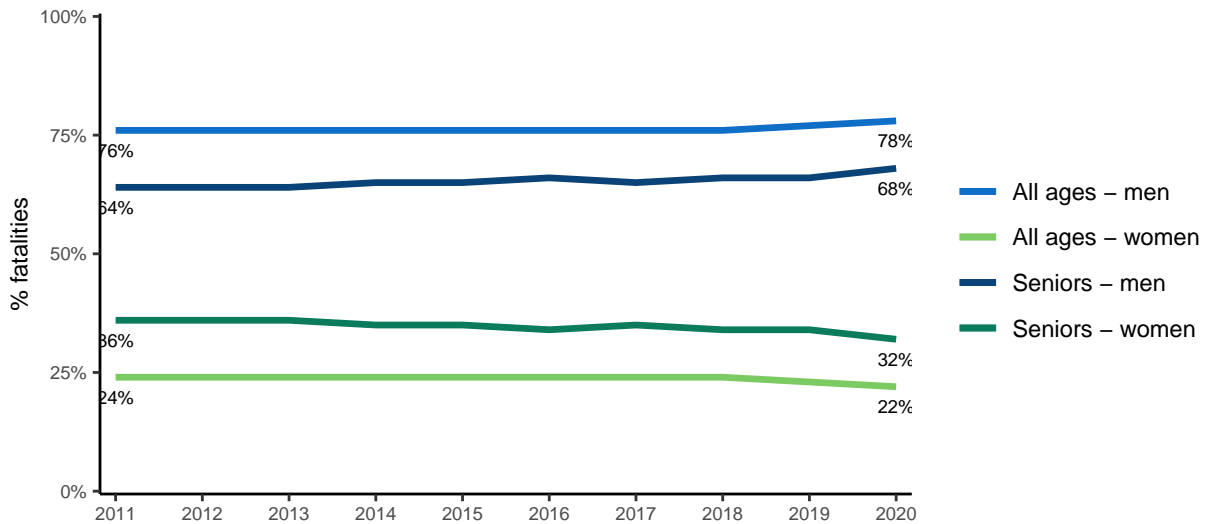


4 Road user

4.1 Gender

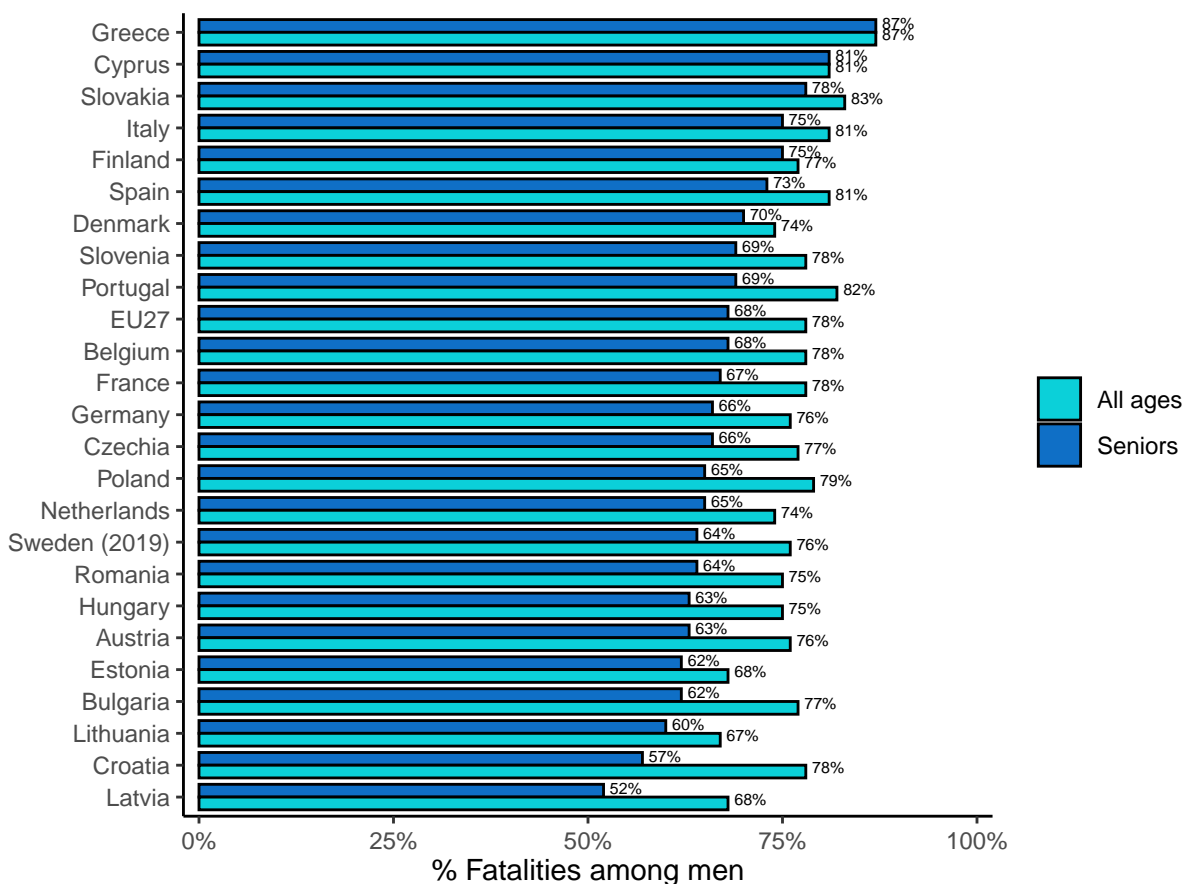
78% of all road fatalities in the EU are male. At 68%, the proportion of senior citizens is slightly lower. Both shares have remained relatively stable since 2011. The different proportions are mainly due to the fact that women are in the majority among seniors, especially in the oldest age strata for seniors.

Figure 8. Distribution of senior fatalities and all fatalities by gender in the EU27 (2011-2020). Source: CARE



In Greece, Cyprus, Slovakia, Italy and Finland, the proportion of men among senior fatalities is 75% or higher, which is notably higher than the European average. In Latvia, Croatia and Lithuania it is notably lower (60% or less).

Figure 9. Share of men among senior fatalities per country in the EU27 (2020). Source: CARE

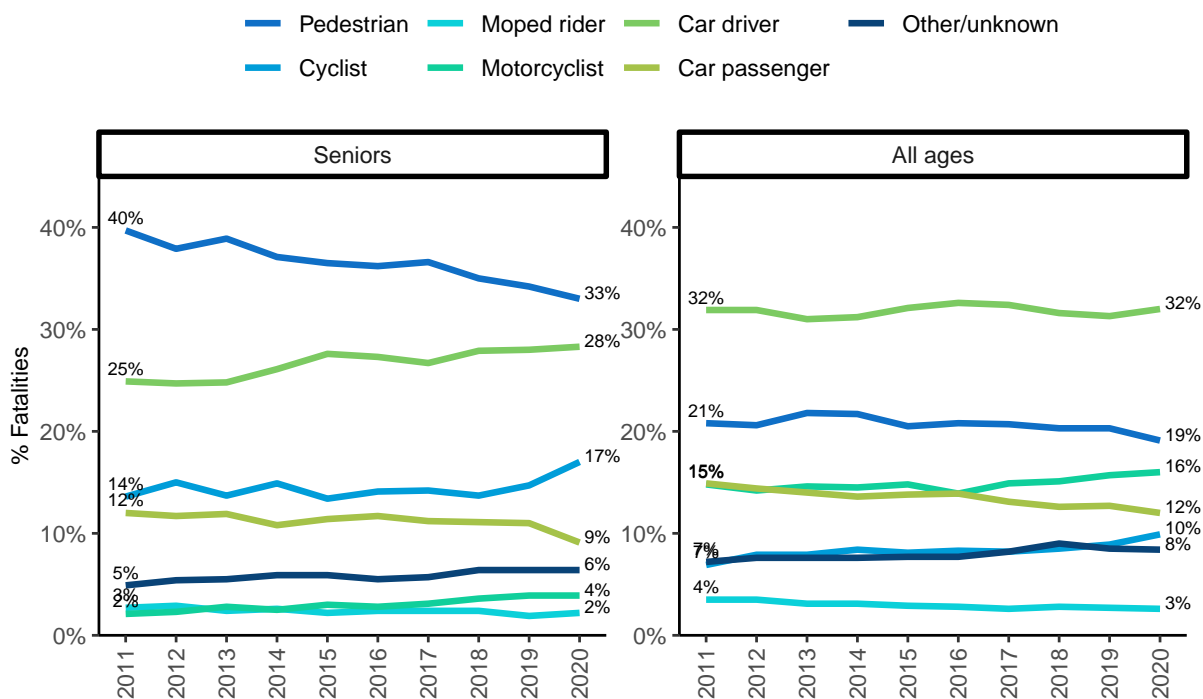


Note: countries that are not included in the Figure are Ireland, Malta and Luxembourg because of small numbers

4.2 Transport mode

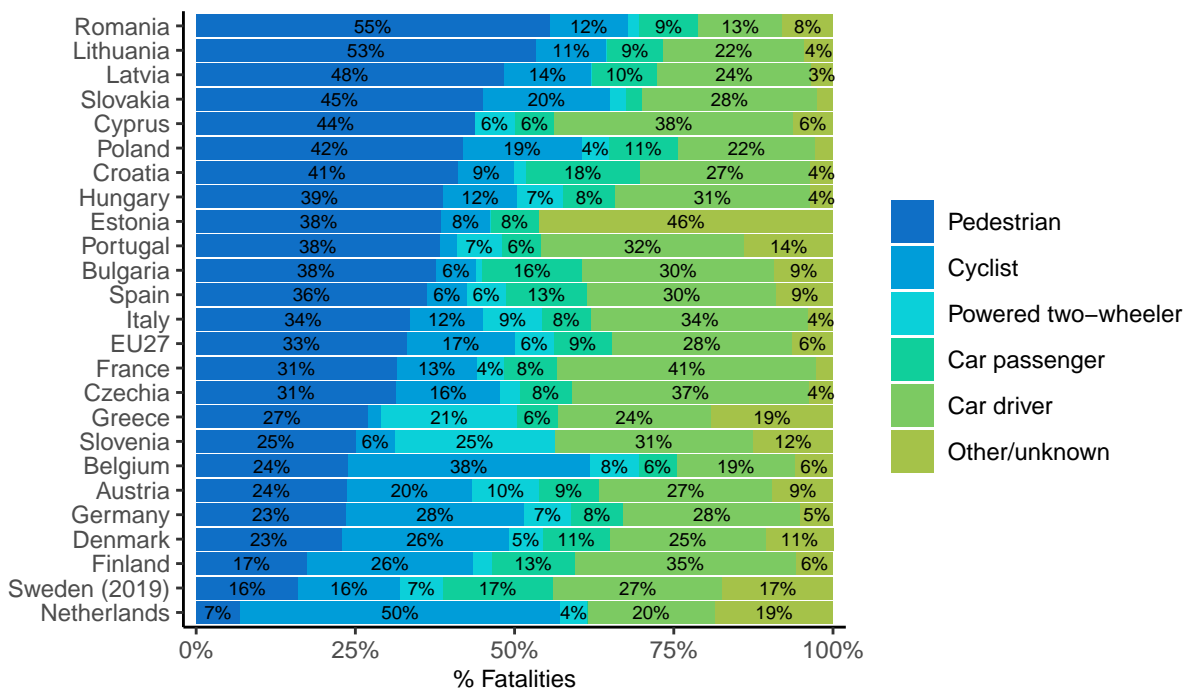
Half of all fatalities among seniors are either pedestrians (33% of all senior fatalities) or cyclists (17%). For all road fatalities combined, regardless of age, this amounts to 29%, namely 19% for pedestrians and 10% for cyclists. Compared to all fatalities together, seniors have proportionally fewer fatalities as car driver and motorcycle rider. The differences between the percentages for seniors and all fatalities reflect the mobility behaviour of seniors and their above-average vulnerability as a vulnerable road user. While the trend per transport mode is relatively stable for all fatalities (with the slight exception of the decreasing proportion of fatalities among car passengers), we see a **slight decrease of senior fatalities for pedestrians and a small increase for car drivers and cyclists.**

Figure 10. Distribution of senior fatalities and all fatalities by transport mode in the EU27 (2011-2020). Source: CARE



The distribution of senior fatalities across various transport modes differs from country to country. Some countries in the east of the EU have a particularly high proportion of pedestrians among senior fatalities. In some Central and Eastern European Member States, namely Romania and Lithuania, more than one in two senior fatalities is a pedestrian. It is noteworthy that countries with a high proportion of cyclists among senior fatalities (more than 20%) have a lower than average proportion of pedestrians among senior fatalities. This applies, for example, to the Netherlands, Belgium, Denmark, Germany and Finland. A possible explanation is that in countries with many cyclist fatalities, seniors travel proportionally fewer kilometres on foot. Finally, countries with a high proportion of senior fatalities amongst car occupants are Sweden and Finland. Again, these national differences can probably be explained, in part, by the specific mobility behaviour of seniors in each specific country.

Figure 11. Distribution of senior fatalities by transport mode per country in the EU27 (2020). Source: CARE



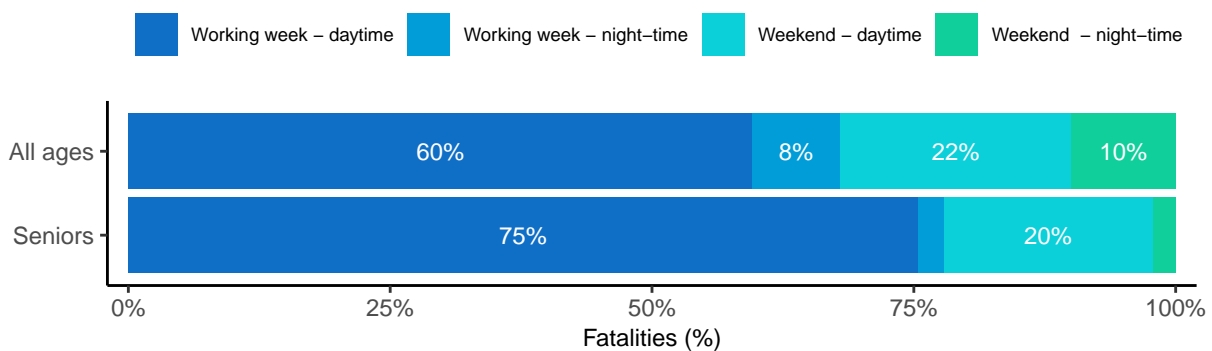
Note: countries that are not included in the Figure are Ireland, Malta and Luxembourg because of small numbers

5 Time

5.1 Period of the week

Compared to all fatalities combined, senior fatalities occur more often during the working week (when 75% of all seniors are killed). The proportion of road fatalities among seniors during night-time (from 10 p.m. to 5.59 a.m.) is much lower, at 5% compared to 18% for all fatalities combined.

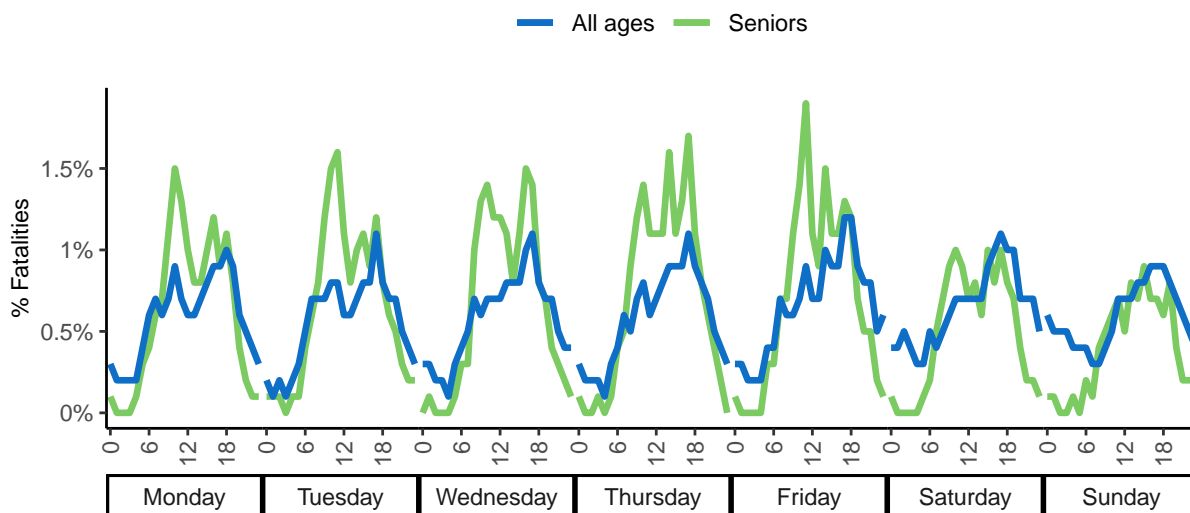
Figure 12. Distribution of senior fatalities and all fatalities according to period of the week in the EU27 (2020). Source: CARE



5.2 Day of the week and hour

The Figure below shows that there are two peaks in senior fatalities in a day: during the **morning from 9 to 11 am, and in the late afternoon from 3 to 6 pm**. The distribution of senior fatalities over a day is not very different as between the working week and the weekend.

Figure 13. Distribution of senior fatalities and all fatalities by day of the week and hour in the EU27 (2020). Source: CARE



5.3 Weather

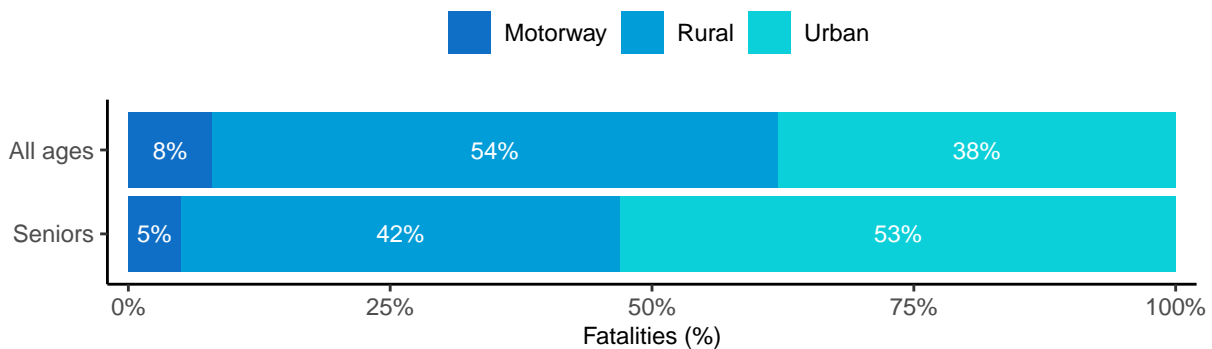
There is no difference in the weather conditions between fatal crashes involving seniors and all fatal crashes regardless of the age of those involved. **73% of senior fatalities are killed in dry/clear weather**, 7% in rain. Very rarely do fatalities occur in less prevalent weather conditions such as fog, snow or hail.

6 Location

6.1 Road type

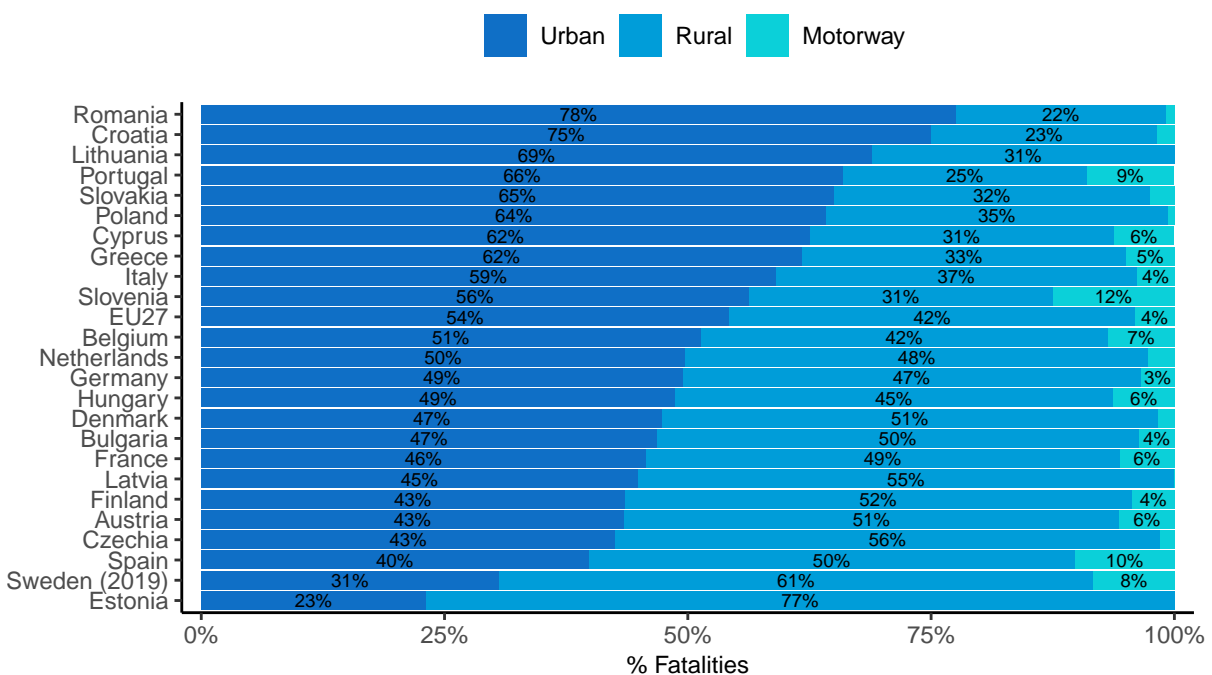
The majority (53%) of senior road fatalities are on urban roads. This is considerably more than for all fatalities combined (38%). Compared to the distribution for all fatalities combined, senior fatalities are also characterized by a lower proportion on motorways (5% versus 8%) and on rural roads (42% versus 54%).

Figure 14. Distribution of senior fatalities and all fatalities by road type in the EU27 (2020). Source: CARE



There are large differences between EU countries in terms of distribution across the various road types. Countries with a high proportion of seniors killed on urban roads (65% or more) include Romania, Croatia, Lithuania, Portugal and Slovakia. These are also countries with an above-average proportion of pedestrian fatalities among seniors. Countries with the highest proportion of seniors killed on rural roads (60% and more) are Sweden and Estonia. In the chapter on transport mode, Sweden was also found to have one of the highest proportions of senior fatalities among car occupants. Finally, Slovenia and Spain have a relatively high proportion of senior fatalities on motorways (10% or more).

Figure 15. Distribution of senior fatalities and all fatalities by road type per country in the EU27 (2011-2020). Source: CARE

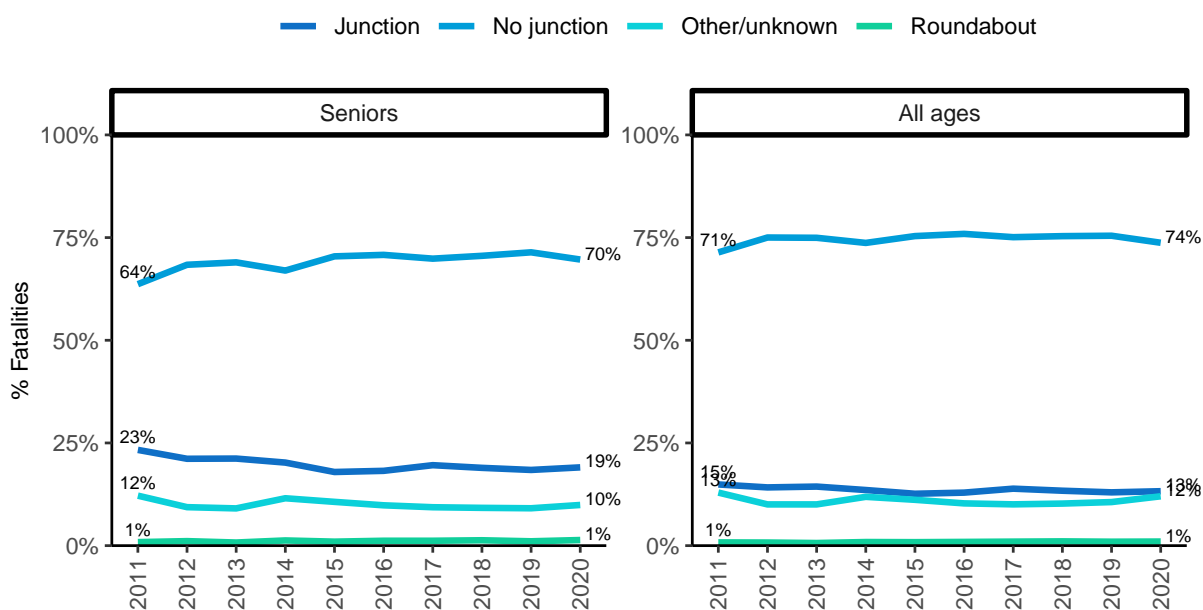


Note: countries that are not included in the Figure are Ireland, Malta and Luxembourg because of small numbers

6.2 Junction type

The vast majority of fatalities, regardless of their age, are on road stretches and not at junctions or roundabouts. This is also the case for senior fatalities, but to a lesser extent: **70% were killed on a road stretch** in 2020 against 74% for all fatalities combined. **Among seniors, there are relatively more fatalities at junctions** (19% versus 12% for all fatalities). Older pedestrians are overrepresented in crashes at intersections where they have been struck by a turning vehicle. And compared to all drivers combined, seniors drivers of motorised vehicles have proportionally more crashes when turning across oncoming traffic at an intersection (*Road safety thematic report Seniors*).

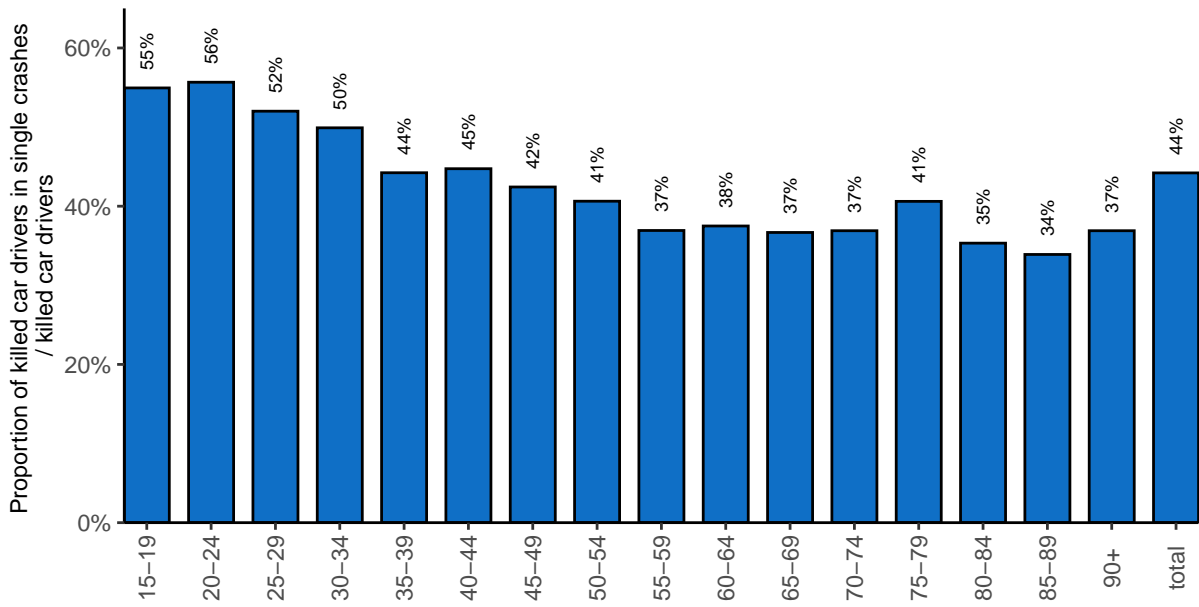
Figure 16. Distribution of senior fatalities and all fatalities by junction type in the EU27 (2011-2020). Source: CARE



7 Type of collision

Amongst car drivers over 65 years of age who died, 37% had a single crash (i.e. crashes in which only one vehicle and no pedestrians are involved). This percentage is fairly constant over the entire age group, from 65 to 90+. This percentage is much higher for younger adults and exceeds 50% for those under 35 years of age, decreasing steadily as they get older.

Figure 17. Proportion of killed car drivers in single car crashes in the total number of car drivers killed, by 5-year age categories, in the EU27 (2018-2020). Source: CARE



8 Notes

8.1 Definitions

The definitions below are taken from the CADAS Glossary and the UNECE Glossary.

CADAS Glossary: https://ec.europa.eu/transport/road_safety/system/files/2021-07/cadas_glossary_v_3_8.pdf

UNECE/ITF/Eurostat Glossary: <https://www.unece.org/index.php?id=52120>

Accident / crash

Definition: injury road accident, concerns an incident on a public road involving at least one moving vehicle and at least one casualty (person injured or killed). Note: the definition of “injury” varies considerably among EU countries thus affecting the reliability of cross country comparisons.

Fatalities

Definition: total number of persons fatally injured; correction factors applied when needed. Death within 30 days of the road crash, confirmed suicide and natural death are not included.

Victims

Total of fatalities, seriously injured and slightly injured and injured.

Motorway

Public road with dual carriageways, and at least two lanes each way. Entrance and exit signposted. Road with grade separated interchanges. Road with a central barrier or central reservation. No crossing permitted. No stopping permitted unless in an emergency. Entry prohibited for pedestrians, animals, bicycles, mopeds, agricultural vehicles.

Working week – daytime

Monday to Friday 6.00 a.m. to 9.59 p.m.

Working week – night

Monday 10 p.m. to Tuesday 5.59 a.m.

Tuesday 10 p.m. to Wednesday 5.59 a.m.

Wednesday 10 p.m. to Thursday 5.59 a.m.

Thursday 10 p.m. to Friday 5.59 a.m.

Weekend – daytime

Saturday to Sunday 6.00 a.m. to 9.59 p.m.

Weekend – night

Friday 10 p.m. to Saturday 5.59 a.m.

Saturday 10 p.m. to Sunday 5.59 a.m.

Sunday 10 p.m. to Monday 5.59 a.m.

8.2 Data source

The main data source for this report is CARE (Community database on Accidents on the Roads in Europe). The database contains data obtained from national data sources, not only EU members but also from the UK (up to 2018) and the 4 EFTA countries (Switzerland, Norway, Iceland, and Liechtenstein). The data in the report were extracted on 6 September 2021. As the database is not complete

for all countries and all years, additional data were provided by the European Commission in order to be able to calculate the general total for fatalities for the EU27.

8.3 Small cells

Absolute numbers of fatalities can be very small for small countries, which can strongly influence trend indicators and other derived indicators such as mortality. Care should be taken when interpreting these numbers. When commenting on the Figures, countries with small numbers were omitted.

8.4 Missing data

Some countries did not provide data for all years and/or all variables to the CARE database. When data are missing for specific combinations of years and countries, imputation is used to fill in the empty cells. Imputation results for individual countries are never published in the Facts and Figures reports, but they are aggregated to generate an imputed number at EU27 level. The following imputation method for individual countries is used:

- Values missing at the end of a time series are given the last known value in the series.
- Values missing at the beginning of a time series are given the first known value in the series.
- If values are missing in the middle of a time series, linear extrapolation is used.

