



European Road Safety Observatory

Facts and Figures - Single vehicle crashes -
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)

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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: 9 January 2023

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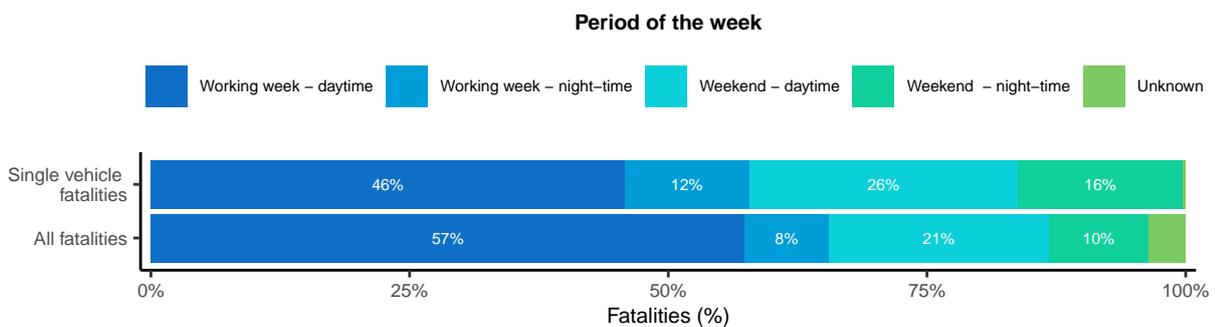
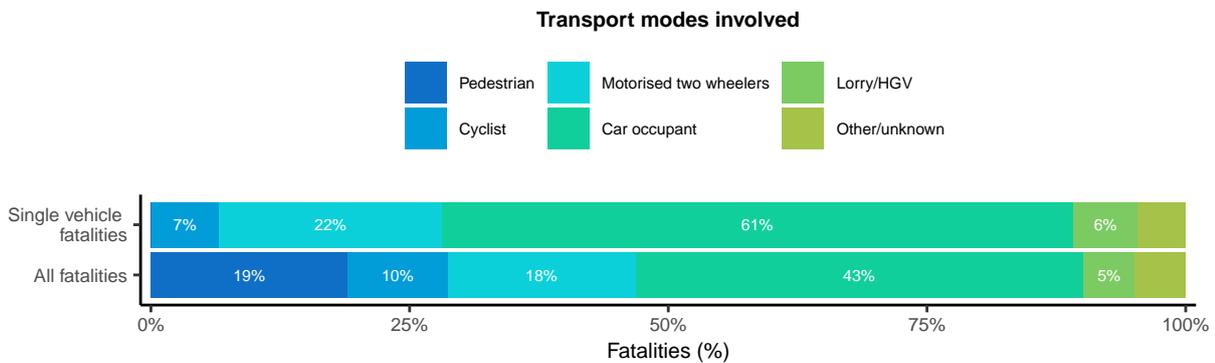
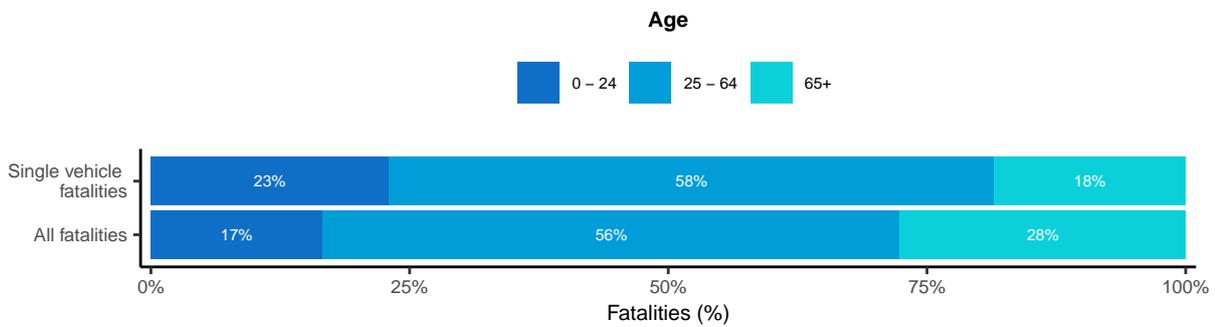
1 Key Facts

This Facts and Figures report looks at single vehicle fatalities, which means fatalities in crashes including only one moving vehicle. This includes accidents with fixed and non-fixed obstacles and animals (pedestrians and parked vehicles are not included), accidents without obstacles (rollover, leaving the carriageway etc.). All differences reported were derived from the available data, the statistical significance of the differences between values has not been tested.

Single vehicle fatalities 2020



- 6,296 fatalities
- 33% of all road fatalities



2 Summary

In the EU in 2020, 6,296 people were killed in a single vehicle crash. The number of single vehicle fatalities has decreased by 30% in the last decade, and amounts to about 30% of all road fatalities. The mortality rate (the number of single vehicle road fatalities per million inhabitants) is high in parts of Eastern Europe and Southern Europe. The proportion of single vehicle fatalities within all road fatalities is highest in Southern and Western Europe.

85% of all single vehicle fatalities are men, compared to 78% for all road fatalities. The age distribution of single vehicle fatalities differs from the age distribution of road fatalities generally. The proportion of young people (up to 24 years old) fatalities is higher in single vehicle crashes compared to all road crashes. In 2020, 23% of single vehicle fatalities were 24-year-olds or younger, compared to 17% of all fatalities.

Car occupants and motorcyclists have the highest share of fatalities in single vehicle crashes. For cyclists and pedestrians, the share in single vehicle fatalities is lower compared to all fatalities.

There are proportionally more single vehicle fatalities during weekend nights (16% versus 10% of all fatalities), especially between midnight and the very early morning hours. Single vehicle fatalities also occur slightly more often in darkness compared to all road fatalities.

Basic definitions

Single vehicle crash:

Crashes including only one moving vehicle. Includes accidents with fixed and non-fixed obstacles and animals (pedestrians and parked vehicles are not included), accidents without obstacles (rollover, leaving the carriageway etc.).

Fatalities:

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

Seriously injured:

Total number of seriously injured persons adjusted 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:

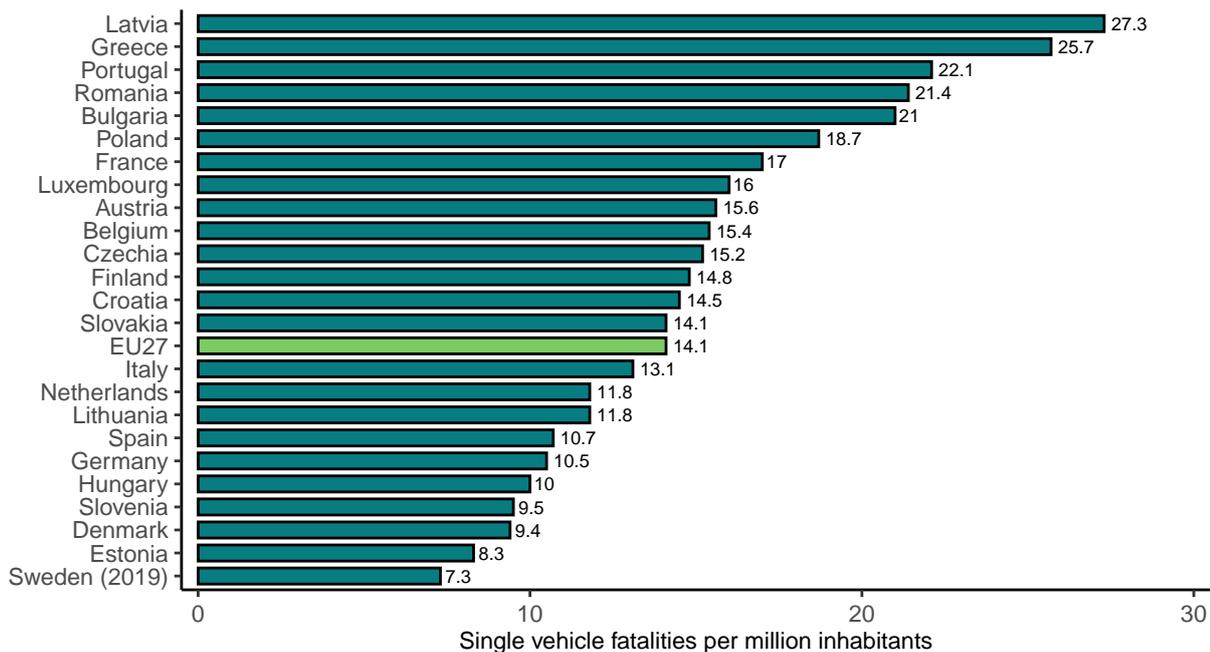
This Facts and Figures report is accompanied by an Excel file (available online) containing a large set of additional detailed data. Each sheet in the Excel file corresponds to a Figure/Table in the report.

3 Main trends

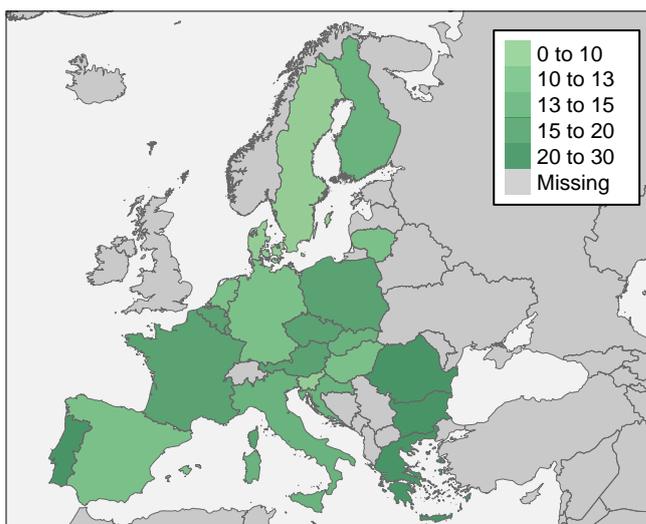
3.1 Mortality rate: number of single vehicle road fatalities per million inhabitants

The single vehicle mortality rate is highest in countries in Eastern Europe, but this ratio is also high in countries in Southern Europe such as Greece and Italy. Latvia and Greece have mortality rates above 25 fatalities per million inhabitants. Sweden, Estonia, Denmark and Slovenia have the lowest mortality rates.

Figure 1. Single vehicle fatalities per million inhabitants per country in the EU27 (2020). Source: CARE



Notes:
 – Cyprus and Ireland are not included in the Figure because there is no data for the last years
 – Malta is not included in the Figure because there were fewer than 10 fatalities in 2020



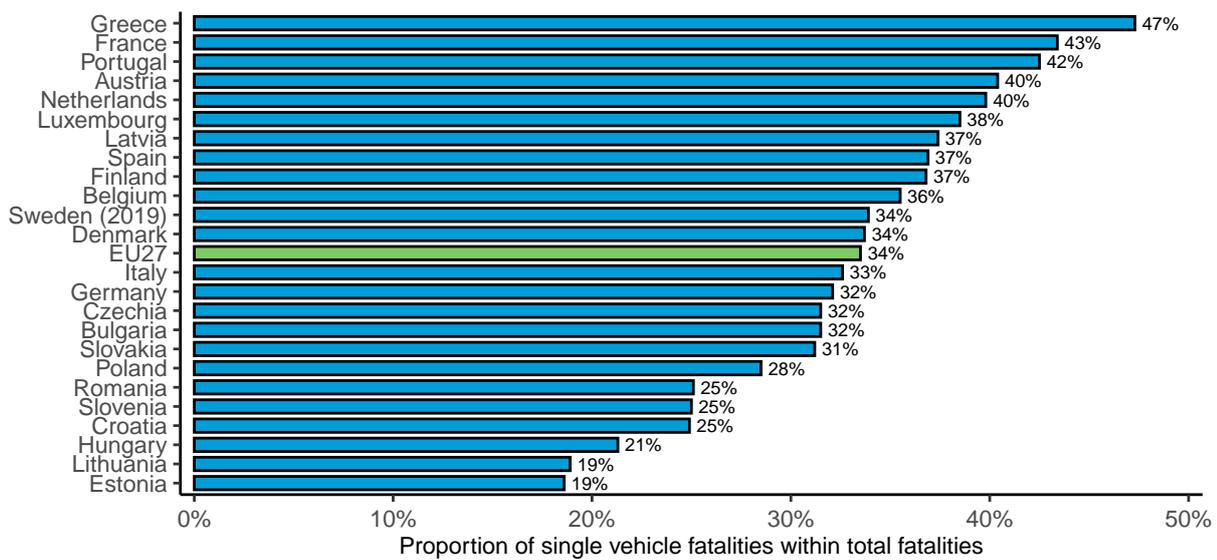
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3.2 Number of single vehicle fatalities as a proportion of total fatalities

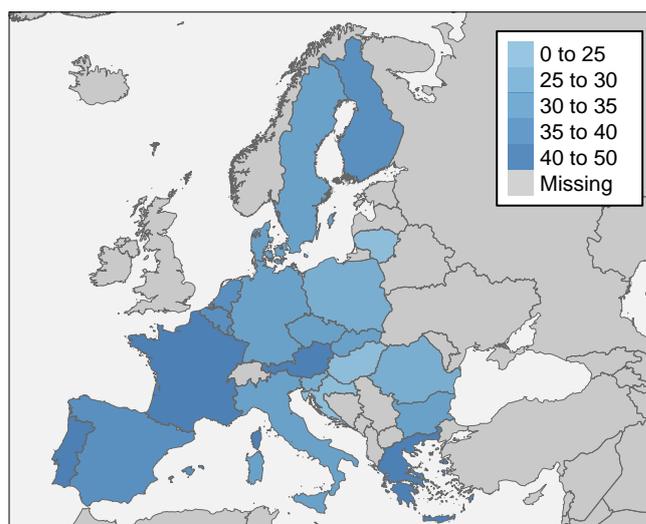
The mortality rate is an important indicator, but does not take into account differences in the general road safety performance across countries. In other words, the mortality rate for single vehicle crashes in a specific country may be high because the total mortality rate for all road crashes in that country is also high. Therefore, it is important to also look at the proportion or share of single vehicle fatalities within the total number of road fatalities.

The proportion of single vehicle fatalities within all road fatalities is highest in Southern and Western Europe. Greece, France, Portugal, Austria and the Netherlands all have a share of single vehicle fatalities of 40% or more. This share is lowest in Estonia and Lithuania.

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



Notes:
 – Ireland and Cyprus are not included in the Figure because there is no data for the last years
 – Malta is not included in the Figure because there were fewer than 10 fatalities

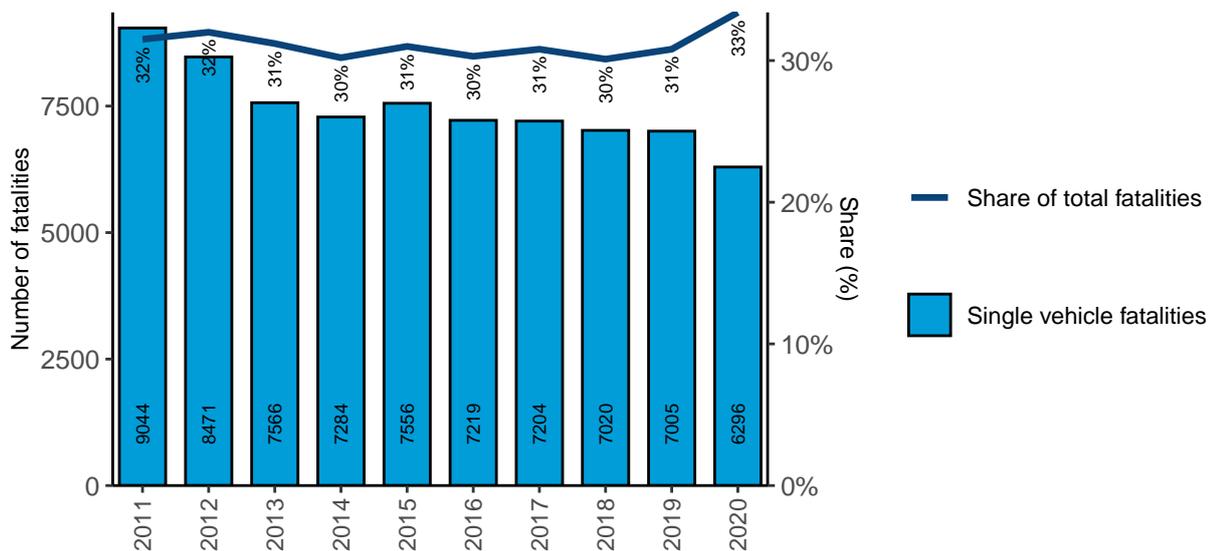


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3.3 Trend in the number of single vehicle fatalities

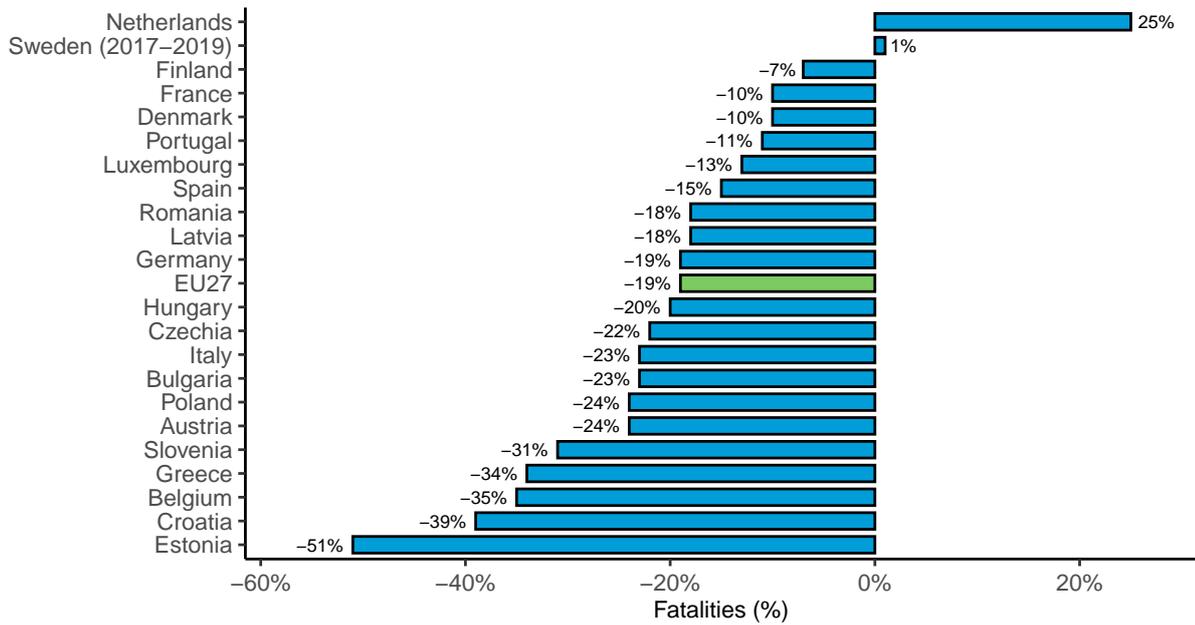
The number of single vehicle fatalities has decreased by 30% in the time period 2011-2020, which is similar to the overall decrease in all road fatalities (-34%). The share of single vehicle fatalities within all road fatalities has remained relatively stable over the last decade.

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



For the graph below, three-year-averages are compared. The overall percentage change for the EU amounts to 19%. In the Netherlands and Sweden, the number of single vehicle fatalities has increased. The largest decrease in single vehicle fatalities is found in Estonia, followed by Croatia and Belgium.

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



Notes:
 - Countries that are not included in the Figure are Cyprus, Ireland, Malta and Slovakia because there is not enough data on single vehicle fatalities in the time series 2011-2020
 - For Sweden, the trend is calculated by comparing the time period 2010-2012 with the time period 2017

Table 1. Number of and trend in single vehicle fatalities per country in the EU27 and EFTA (2011-2013 versus 2018-2020).
Source: CARE

	2011	2018	2019	2020	Trend 2018 - 2020 vs 2013 - 2011	Miniplot: trend since 2011
Austria	190	144	116	139	-24%	
Belgium	325	195	229	177	-35%	
Bulgaria	253	192	196	146	-23%	
Croatia	175	120	102	59		
Czechia	246	180	202	163	-22%	
Denmark	69	39	63	55	-10%	
Estonia	29	10	16	11	-51%	
EU27	9044	7,020	7,005	6296	-19%	
Finland	99	88	73	82	-7%	
France	1462	1,233	1,308	1101	-10%	
Germany	1267	960	899	874	-19%	
Greece	446	274	280	276	-34%	
Hungary	158	108	125	98	-20%	
Iceland	5	9	3	2		
Italy	1168	909	915	781	-23%	
Latvia	54	29	41	52	-18%	
Lithuania	-	43	46	33		
Luxembourg	12	18	12	10	-13%	
Malta	-	11	4	-		
Netherlands	167	193	223	205	25%	
Norway	61	44	38	32	-38%	
Poland	1046	728	700	711	-24%	
Portugal	334	261	282	228	-11%	
Romania	538	471	416	413	-18%	
Slovakia	-	59	64	77		
Slovenia	30	25	23	20	-31%	
Spain	713	613	595	506	-15%	
Sweden	107	117	75	-		

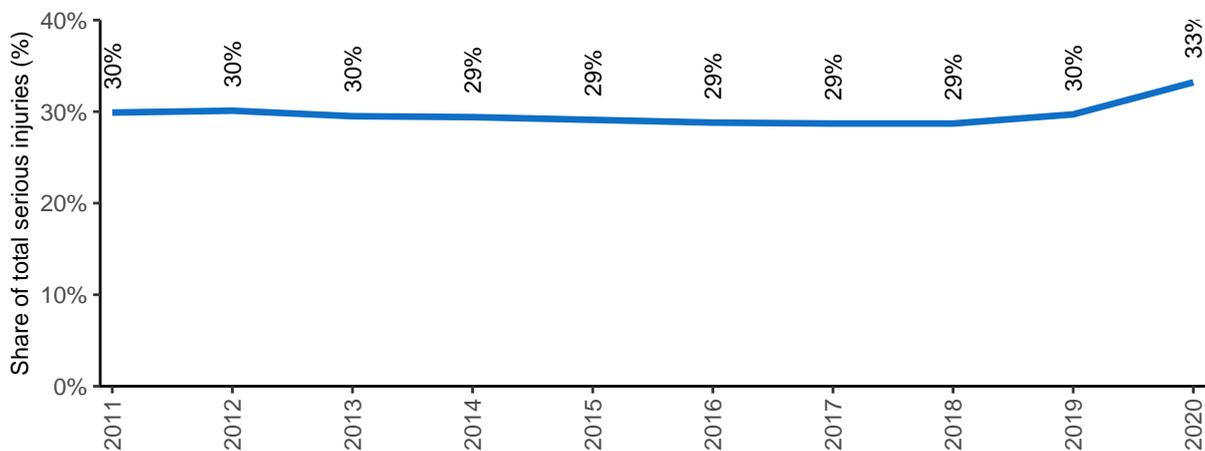
Note:

The trend is not shown if there are less than 10 fatalities in one year

3.4 Serious injuries

In 2020, 33% of all serious injuries occurred in a single vehicle crash. This share of single vehicle serious injuries within the total number of serious injuries has increased slightly over the last decade.

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



Notes:

- Countries that are not included in the Figure are Cyprus, France, the Netherlands, Ireland, Italy and Estonia due to problems of comparability, missing data or a break in the time series
- Germany accounts for a disproportionately high share of all serious injuries

4 Road user

4.1 Gender

78% of all road fatalities in 2020 are men, compared to 85% of single vehicle fatalities. Large differences can be observed between EU Member States. The proportion of single vehicle fatalities ranges between 9% (Portugal) and 27% (Lithuania).

Figure 6. Distribution of single vehicle fatalities and all fatalities by gender in the EU27 (2020). Source: CARE

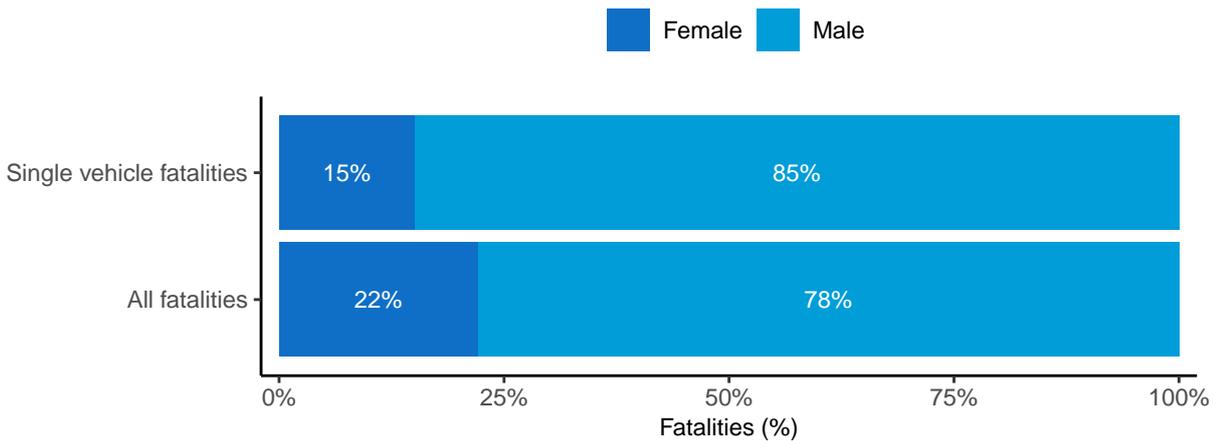
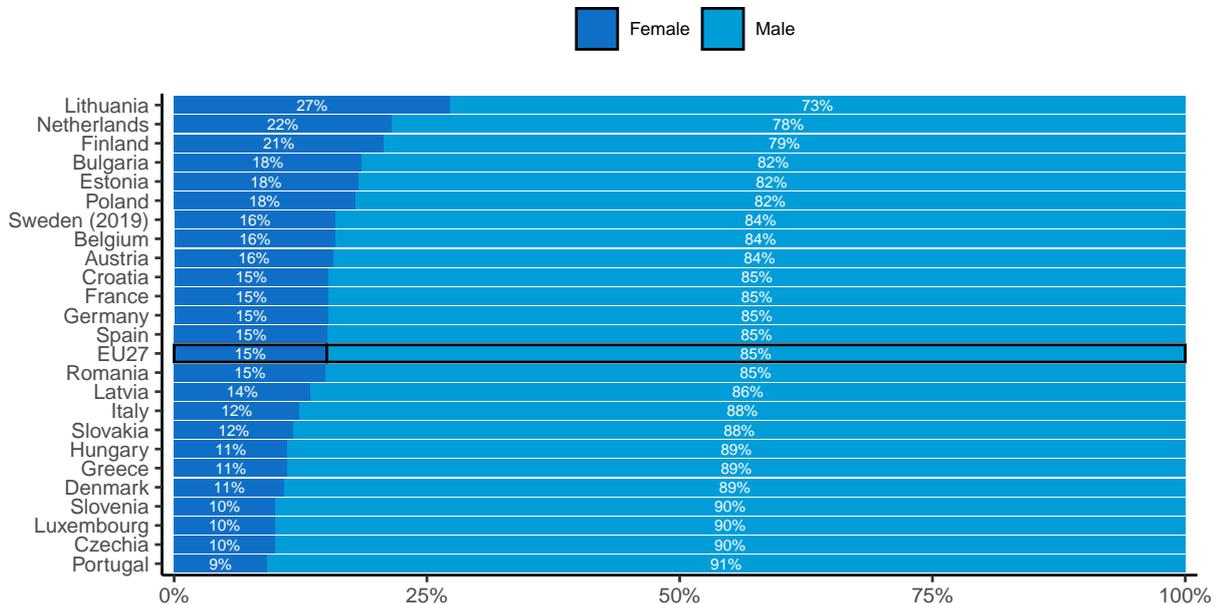


Figure 7. Distribution of single vehicle fatalities by gender per country in the EU27 (2020). Source: CARE



Notes:

- Countries that are not included in the Figure are Cyprus and Ireland because these countries have missing values in the last years
- Malta is not included in the Figure because there were fewer than 10 fatalities

4.2 Age

The age distribution of single vehicle fatalities differs from the age distribution of road fatalities generally. The proportion of young people (up to 24 years old) fatalities is higher in single vehicle crashes compared to all road crashes. In 2020, 23% of single vehicle fatalities were 24-year-olds or younger, compared to 17% of all fatalities. The proportion of fatalities aged 65 or older is lower in single vehicle crashes compared to all fatalities.

The proportion of single vehicle fatalities among those aged 24 or less ranges between 10% and 36% in the EU Member States.

Figure 8. Distribution of single vehicle fatalities and all fatalities by age group in the EU27 (2011-2020). Source: CARE & EUROSTAT

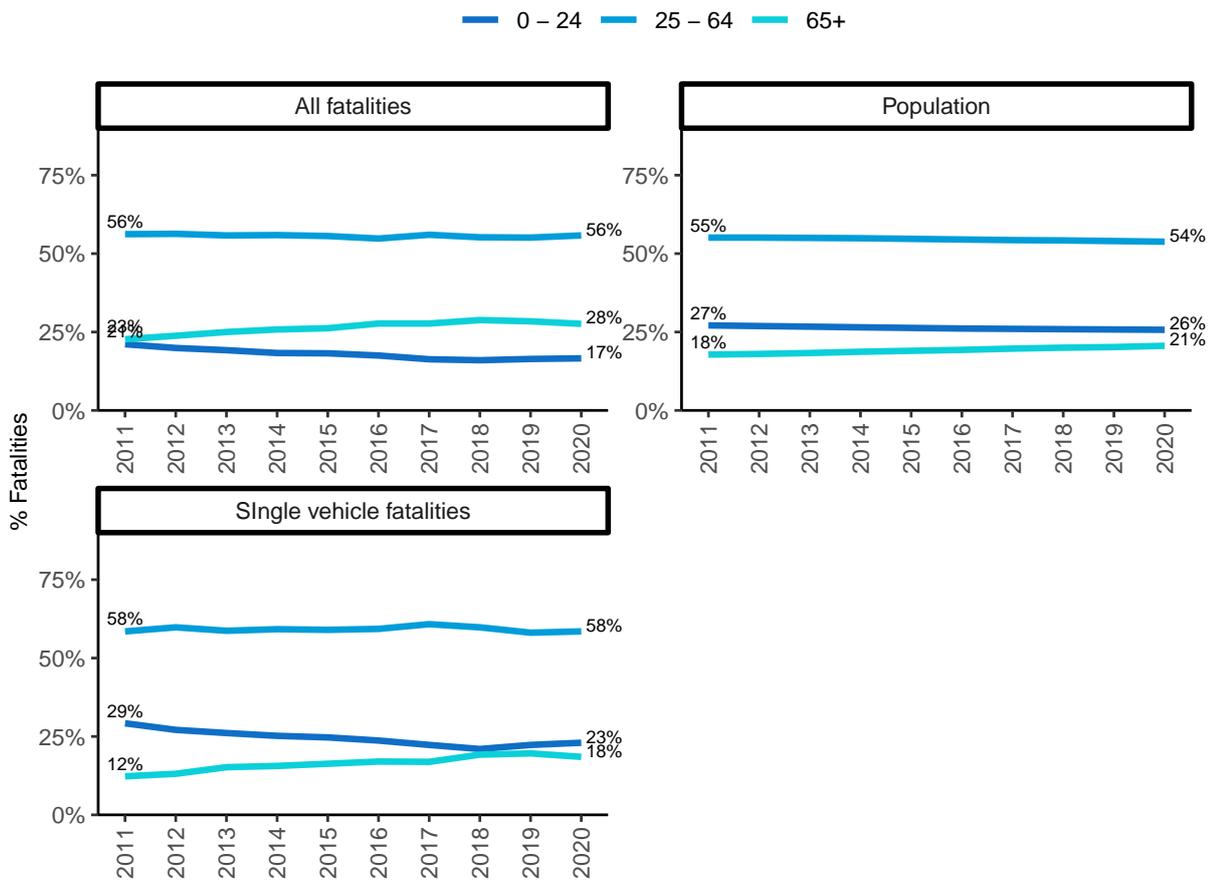
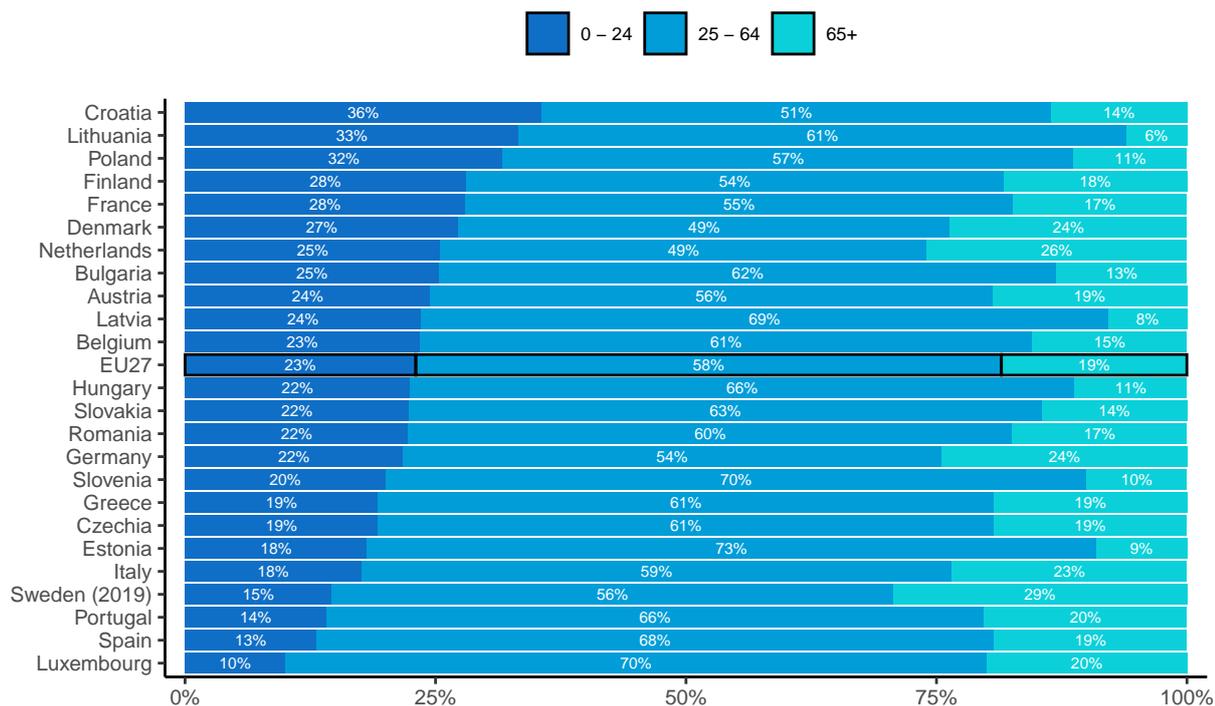


Figure 9. Distribution of single vehicle fatalities by age group per country in the EU27 (2020). Source: CARE

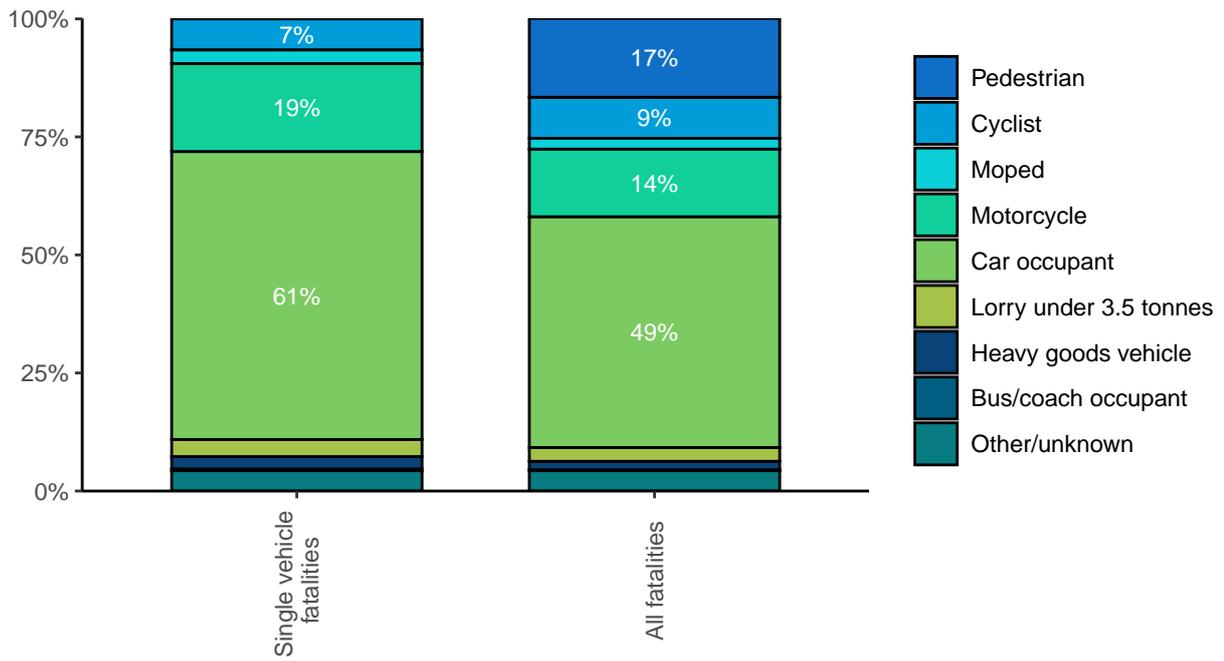


Notes:
 – Countries that are not included in the Figure are Cyprus and Ireland because these countries have missing values in the last years
 – Malta is not included in the Figure because there were fewer than 10 fatalities

4.3 Transport modes

The proportion of single vehicle fatalities is highest for car occupants (61%), followed by motorcycles (18%). Their share in these crashes is also greater compared to all road crashes. For cyclists, the share in single vehicle fatalities is lower compared to all fatalities. Given that evidence shows underreporting of single vehicle bicycle crashes, the picture for cyclists is likely to be even more serious (Nuyttens, 2013).

Figure 10. Distribution of single vehicle fatalities by transport mode in the EU27 (2020). Source: CARE

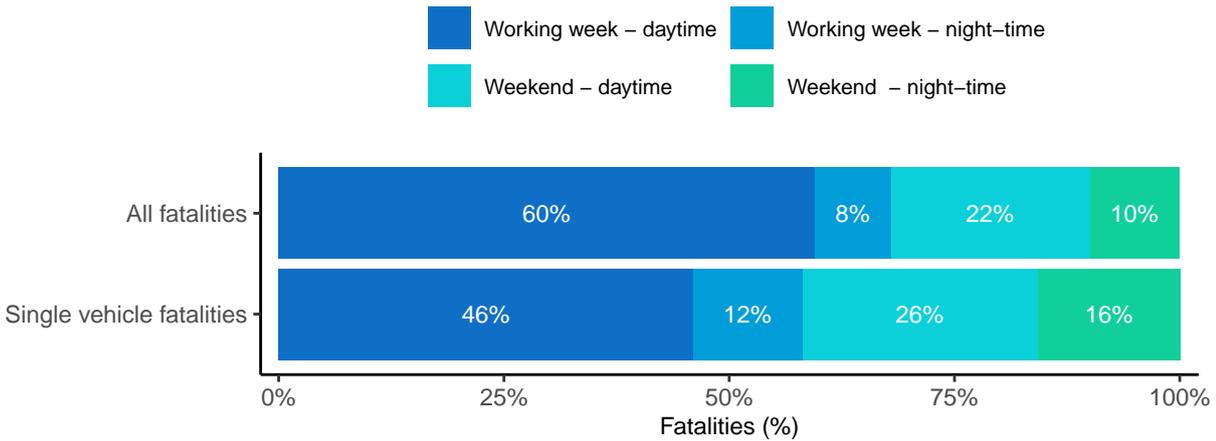


5 Time

5.1 Period of the week

Single vehicle fatalities occur more often at night compared to all fatalities. **There are proportionally more single vehicle fatalities during weekend nights especially (16% versus 10% of all fatalities).**

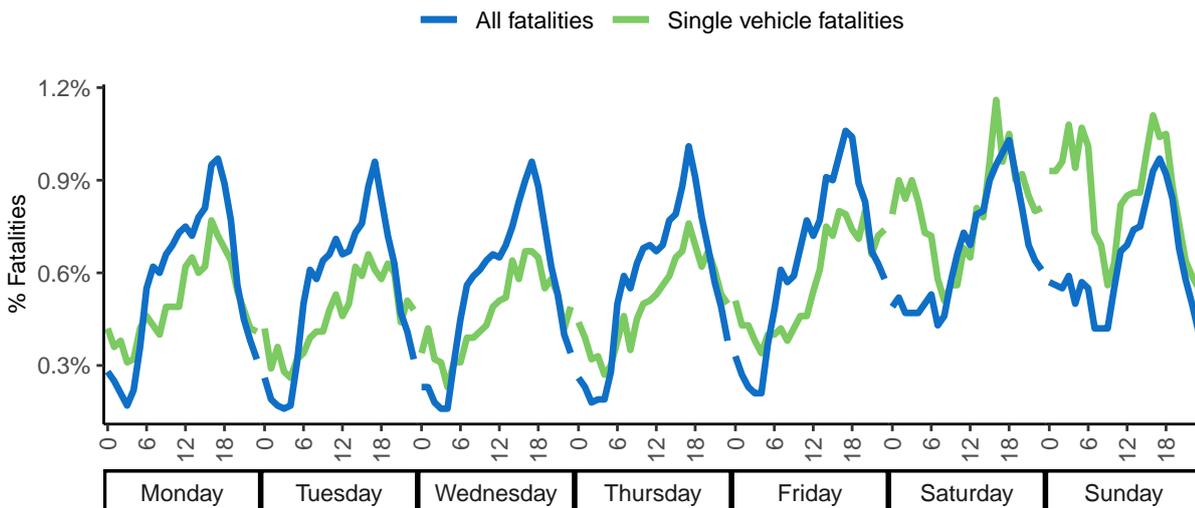
Figure 11. Distribution of single vehicle fatalities and all fatalities according to period of the week in the EU27 (2020). Source: CARE



5.2 Day of the week and hour

The graph below shows that single vehicle fatalities do indeed occur proportionally more often during weekend nights, especially between midnight and the very early morning hours.

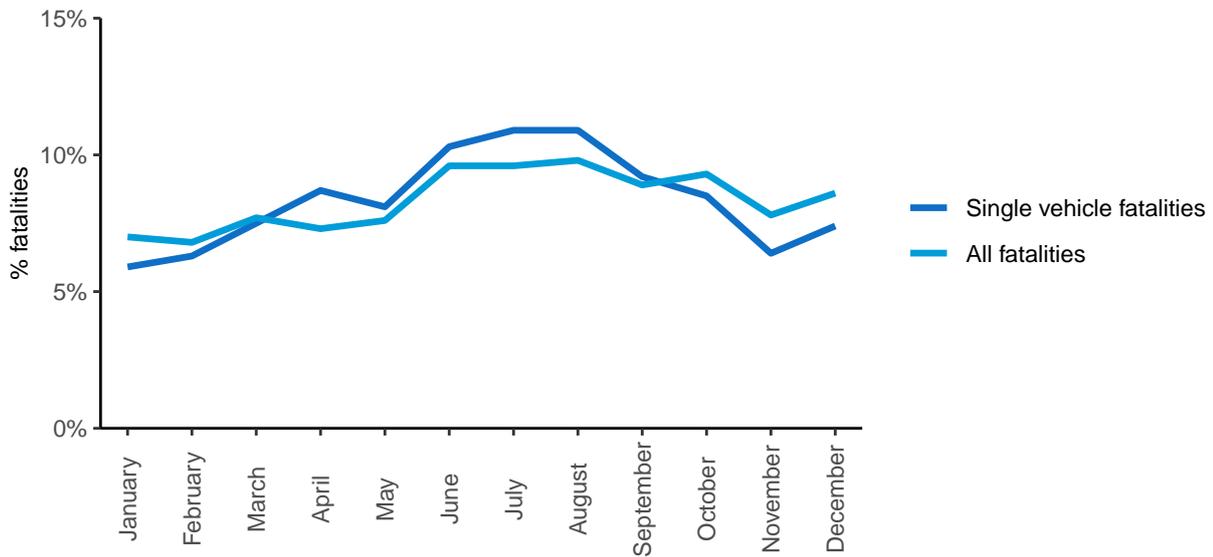
Figure 12. Distribution of single vehicle fatalities and all fatalities by day of the week and hour in the EU27 (2015-2020). Source: CARE



5.3 Month

The share of single vehicle fatalities is highest during the summer months (June until August) and lowest in January and February. The same distribution across the months of the year can be noted for all road fatalities.

Figure 13. Monthly distribution of single vehicle fatalities and all fatalities, in the EU27 (2019). Source: CARE



6 Location

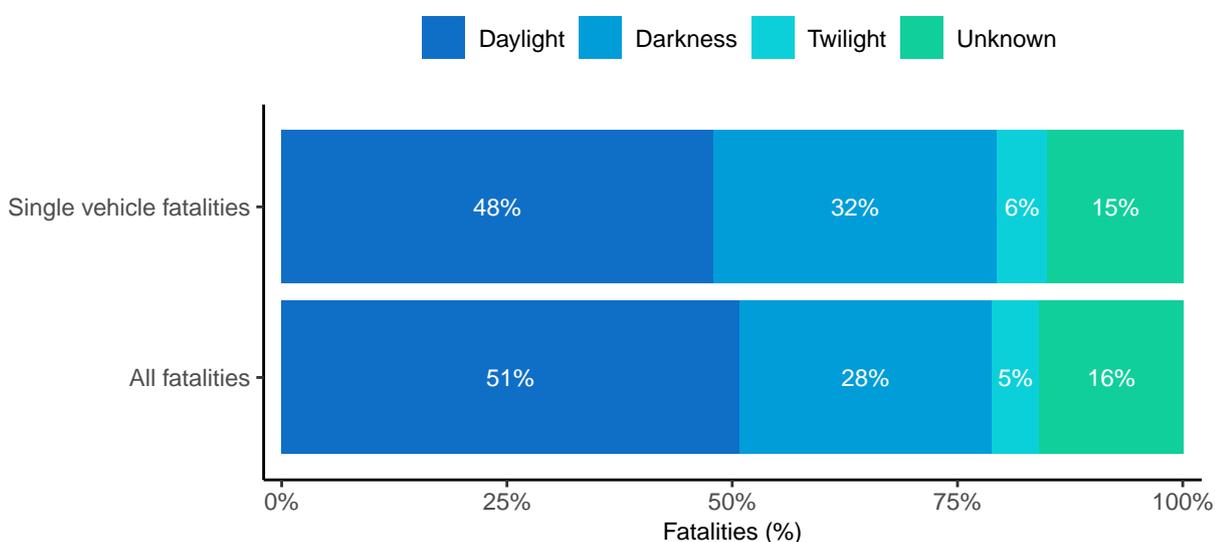
6.1 Surface

Surface conditions were dry for 75% of single vehicle fatalities and wet for 21% of those fatalities. For only 1% of these fatalities were the surface conditions snowy, frosty, or icy. The same findings apply to all fatalities generally.

6.2 Light conditions

Single vehicle fatalities happen proportionally slightly more often in darkness, and less often during daylight, compared to all road fatalities generally.

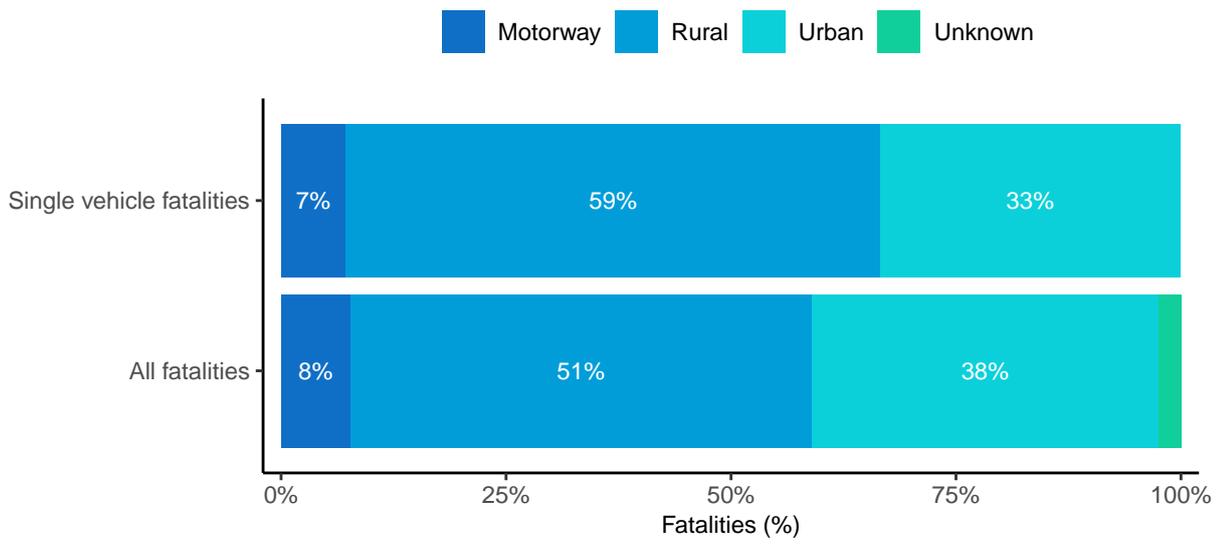
Figure 14. Distribution of single vehicle fatalities and all fatalities by light conditions in the EU27 (2020). Source: CARE



6.3 Road type

Single vehicle fatalities occur proportionally more often on rural roads, and proportionally less often on urban roads compared to all fatalities.

Figure 15. Distribution of single vehicle fatalities and all fatalities by type of road in the EU27 (2020). Source: CARE



7 Notes

7.1 References

Nuyttens, N. (2013) Onderregistratie van verkeersslachtoffers. Vergelijking van de gegevens over zwaar gewonde verkeersslachtoffers in de ziekenhuizen met deze in de nationale ongevalenstatistieken.

7.2 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 suicides and natural deaths are not included.

Victims

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

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.

Road inside urban areas

Public road inside urban boundary signs.

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.

Single vehicle crash

Crashes including only one moving vehicle. Includes accidents with fixed and non-fixed obstacles and animals (pedestrians and parked vehicles are not included), accidents without obstacles (rollover, leaving the carriageway etc.).

7.3 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.

7.4 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.

7.5 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.

