European Transport Safety Council

Improving the safety of cycling in Europe

PIN Flash 50

April 2026

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The PIN programme relies on panellists in the participating countries to provide data and to carry out quality assurance of the figures provided. This forms the basis for the PIN Flash reports and other PIN publications. In addition, all PIN panellists are involved in the reports' review process to ensure the findings' accuracy and reliability.

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ABOUT THE PIN PROGRAMME

The ETSC Road Safety Performance Index (PIN) is a policy tool to help national governments and the European Union improve road safety. By comparing performance between countries, it serves to identify and promote best practices in Europe and bring about the kind of political leadership that is needed to create a road transport system that maximises safety.

Launched in June 2006, the index covers all relevant areas of road safety including road user behaviour, infrastructure and vehicles, as well as road safety policymaking more generally. The programme covers 31 countries: the 27 Member States of the European Union, together with Norway, the Republic of Serbia, Switzerland and the United Kingdom.

National research organisations and independent researchers participate in the programme and ensure that any assessment carried out within the programme is based on scientific evidence.

ABOUT THE EUROPEAN TRANSPORT SAFETY COUNCIL (ETSC)

The European Transport Safety Council is the independent voice for road safety in Europe.

ETSC is a non-profit international organisation with members from across Europe dedicated to reducing deaths and injuries in transport. Founded in 1993 in Brussels, ETSC provides an impartial source of expert advice on transport safety matters to the European Commission, the European Parliament, international organisations, and national governments.

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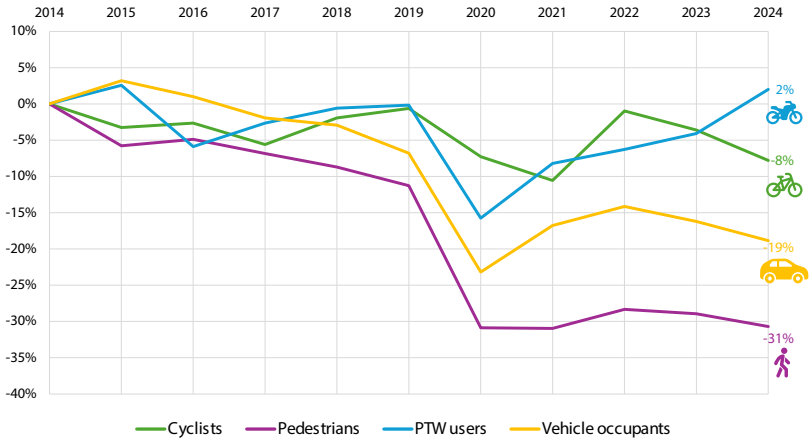
CYCLIST DEATHS DECLINED BY ONLY 8% IN THE LAST DECADE



1,926 CYCLISTS DIED IN 2024

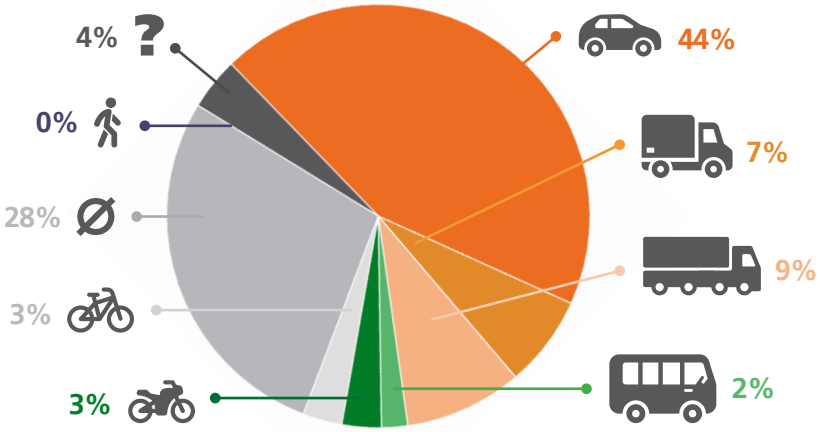
HALF THE CYCLISTS KILLED IN THE EU ARE **ABOVE 65 YEARS OLD**

65+

4 OUT OF EVERY 5 CYCLISTS **KILLED** IN THE EU ARE **MALE**

65% OF ALL CYCLIST DEATHS IN THE EU ARE THE CONSEQUENCE OF AN **IMPACT WITH A MOTOR VEHICLE**

28% ARE SINGLE BICYCLE CRASHES



33,803 CYCLISTS WERE SERIOUSLY INJURED IN THE EU21[1] IN 2024

[1] EU21: EU27 excluding ES, IT, LT, MT, RO and SK.

MAIN RECOMMENDATIONS

- Adopt walking and cycling safety strategies.
- Encourage local authorities to reduce the speed limit for motorised vehicles to 30km/h where vulnerable road users and motorised traffic are not physically separated.
- Improve data collection and tackle underreporting.
- Improve enforcement.

EXECUTIVE SUMMARY

Cycling is increasingly promoted across Europe for its health, environmental and mobility benefits. However, cyclists remain among the most vulnerable road users and progress in improving their safety has been limited. This report examines trends in cyclist deaths and serious injuries and identifies measures needed to reduce the risk for people who cycle.

Cyclists account for a significant share of road deaths

In the EU, cyclists represent 10% of all road user deaths. In 2024, 1,926 cyclists were killed on EU roads, and a further 22,153 cyclists were killed between 2014 and 2024.

Progress in reducing cyclist deaths has been slow. Between 2014 and 2024, the number of cyclist deaths decreased by only 8%, corresponding to an average annual reduction of 0.5%, compared with a 2% annual reduction in deaths among motorised road users. Achieving the EU target of halving road deaths by 2030 would require an annual reduction of 6.5%, far higher than current trends.

Large differences between countries

Cyclist mortality varies widely between countries. Based on the average for 2022-2024, fewer than two cyclist deaths per million inhabitants were recorded annually in countries such as Norway, Greece, the UK, Luxembourg, Ireland and Spain, while 15 deaths per million inhabitants were recorded in the Netherlands, with Belgium and Romania at around eight.

These numbers do not necessarily indicate differences in safety levels because they do not account for distance cycled. Countries with higher cycling levels may record more cyclist deaths simply because more people cycle and travel longer distances by bicycle.

Most fatal cyclist collisions involve motor vehicles

Across the EU, 65% of cyclist deaths result from collisions with motor vehicles. Passenger cars account for the largest share of these deaths (44%), followed by heavy goods vehicles (9%) and vans (7%).

28% of cyclist deaths occur in single-bicycle collisions, where no other vehicle is involved. These proportions are based on reported numbers; the actual proportion could be higher as these types of collisions are often underreported in police statistics.

Older cyclists are particularly vulnerable

Older cyclists are disproportionately involved in fatal collisions. Cycling improves health even across the elderly age groups but the downside to this is that cycling mortality rates increase with age, particularly among those aged over 80. Factors influencing this high cycling mortality include increased physical vulnerability, balance difficulties and the use of medication. If more older people continue to take up electrically-assisted cycling, we will face higher casualty rates.

Gender differences in cyclist deaths

Men account for the majority of cyclist deaths. Over the period analysed, 80% of cyclists killed were male and 20% female.

Part of this difference may be explained by differences in bicycle use, as men often cycle longer distances than women in many countries, but mobility patterns and risky behaviours are also likely to play a role.

Serious injuries among cyclists are increasing

Cyclists also account for a substantial proportion of reported serious road injuries. In 2024, 33,803 cyclists were reported seriously injured in the EU21,[2]

[2] EU21: EU27 excluding ES, IT, LT, MT, RO and SK.

representing around 30% of all reported seriously injured road users. Underreporting of single bicycle injuries to the police is known to be very high.

While cyclist deaths declined slightly between 2014 and 2024, the number of recorded cyclist serious injuries increased by 12% over the same period. On average, reported serious injuries among cyclists increased by 1.9% annually between 2014 and 2024.

The proportion of male cyclists who are seriously injured (63%) is notably lower than the proportion of male cyclist deaths (80%). A likely explanation is the differing nature of the underlying crash types. Most injured cyclists are involved in single-bicycle incidents, such as falls, whereas most deaths result from collisions between bicycles and motor vehicles. Men are far more frequently involved in the latter type of crash, while falls occur at similar rates among males and females.

Serious cyclist injuries are widely underreported

Police statistics significantly underestimate the number of cyclist injuries. Studies indicate that only around 10% of injured cyclists appear in police accident databases. Underreporting is particularly common in single-bicycle collisions or crashes that do not involve motor vehicles. Hospital data in several countries show substantially higher numbers of injured cyclists than official police records.

Electric bicycles are changing cycling risks

The increasing use of electric bicycles is influencing casualty trends. In countries that distinguish between bicycle types, deaths among electric bicycle users have increased while deaths among conventional bicycle users have generally decreased.

The growing popularity of electric bicycles, particularly among older riders, may partly explain this trend.

Improving cycling safety requires a Safe System approach

As governments encourage cycling for environmental and health reasons, ensuring safe conditions for cyclists is essential. The report highlights the importance of a Safe System approach, including safer infrastructure, lower speeds, improved vehicle safety technologies and stronger enforcement of traffic laws.

Strategic planning, improved data collection and better monitoring through key performance indicators are also needed to support effective policies and track progress in reducing cyclist deaths and serious injuries across Europe.

MAIN RECOMMENDATION TO ALL LEVELS

- Develop a policy establishing a hierarchy of road users, particularly in urban areas. The hierarchy should be based on safety, vulnerability and sustainability. Walking should be at the top of the hierarchy, followed by cycling and use of public transport.

MAIN RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Design and implement walking and cycling safety strategies, which include targets and infrastructure measures to improve walking and cycling safety. Ensure that strategies are closely linked with road safety priorities.
- Encourage local authorities to reduce the speed limit for motorised vehicles to 30 km/h where vulnerable road users and motorised traffic are not physically separated from each other.
- Encourage local authorities to separate pedestrians and cyclists from motor vehicle traffic on roads with 50 km/h speed limits.
- Develop and encourage responsible authorities to apply national safe infrastructure design guidelines for traffic calming measures, intersections, pedestrian crossings or cycling infrastructure design. Renew the guidelines regularly based on the latest research and innovation.
- Use public procurement to require vehicle safety features such as direct vision, Intelligent Speed Assistance, Automated Emergency Braking with cyclist detection.
- Intensify enforcement of traffic rules, particularly speeding in urban areas where large numbers of cyclists travel, and especially where infrastructure measures to reduce speeds are not yet in place.
- Consider how to improve registration of deaths and serious injuries of cyclists and tackle underreporting. Analyse single bicycle collisions, including how they are recorded, as a matter of priority.
- Collect travel data for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) by road types.
- Collect, and report to the European Commission, data to deliver the Key Performance Indicators included in the EU Road Safety Policy Framework 2021-2030, especially the KPI relating to cycling - percentage of riders of powered-two-wheelers and bicycles wearing helmets.

MAIN RECOMMENDATIONS TO THE EU

- Create an EU fund to support priority measures such as for cities to introduce 30 km/h zones supported by traffic calming measures, particularly in residential areas and where there are a high number of cyclists, and on the way to schools.
- Encourage Member States, through a formal EC recommendation, to apply safe speed limits in line with the Safe System approach for different road types such as 30 km/h on urban roads, 70 km/h on undivided rural roads and a top speed of 120 km/h or less on motorways and implement best practices on enforcement.
- Introduce a KPI on the proportion of roads within the road network with speed limits set at safe and credible levels.
- Together with Member States, develop KPIs on cyclist infrastructure safety.
- Encourage Member States to collect travel data in a harmonised way for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) by road type.
- Adopt as a matter of urgency the new EU Quality Requirements on VRU Infrastructure Safety, Forgiving and Self-explaining roads as required under the RISM Directive.

INTRODUCTION

Cyclists remain among the most vulnerable road users. Unlike occupants of cars, vans and lorries, cyclists have little physical protection. As a result, collisions involving cyclists are more likely to lead to serious injury or death. Ensuring that the road transport system protects vulnerable road users is therefore an essential component of the Safe System approach to road safety.

Cycling plays an increasingly important role in Europe's transport systems. It contributes to healthier populations, more liveable cities and progress towards climate and environmental goals. Across Europe, governments are encouraging people to shift from private car use to more sustainable forms of mobility, including walking, cycling and public transport. In this context, cycling has become a central element of policies aimed at reducing greenhouse gas emissions, improving air quality, making more efficient use of land, and addressing congestion in urban areas.

The benefits of cycling extend beyond environmental sustainability. Regular cycling contributes to improved public health by increasing physical activity and reducing the risk of a wide range of non-communicable diseases. It can also help to reduce noise pollution and improve the quality of urban space. For these reasons, increasing cycling levels has become a key objective in many national mobility strategies and urban transport plans across Europe.

At the same time, the popularity of cycling is increasing in many European countries. This trend has been driven by a combination of factors including investment in cycling infrastructure, changes in mobility patterns following the COVID-19 pandemic, the expansion of electrically assisted bicycles and a growing recognition of the environmental and health benefits of active travel. While this shift is welcome, it also presents an important policy challenge: increases in cycling activity must be accompanied by safety improvements, to avoid a surge in deaths and serious injuries among cyclists.

Achieving this requires a comprehensive approach that combines safer infrastructure, appropriate speed management, safer vehicles, improved road user behaviour, helmet use and better data collection. Infrastructure that separates cyclists from fast-moving motor traffic, safe speed limits where such separation is not possible, and technologies in motor vehicles designed to detect and protect vulnerable road users can all play a critical role in reducing risk.

Improving cyclist safety is also closely linked to broader road safety objectives in Europe. The European Union has committed to reducing road deaths and serious injuries by 50% by 2030, as part of its Vision Zero ambition to eliminate road deaths by 2050. Ensuring that cyclists benefit from progress towards these targets is essential, especially as cycling levels continue to grow.

This report analyses recent trends in cyclist deaths and serious injuries across Europe and identifies the key risk factors affecting cyclists on European roads. It also examines the policies and measures that can help improve cycling safety while supporting the continued growth of cycling as a safe, healthy and sustainable mode of transport.

DATA

The data were retrieved from EUROSTAT and the CARE database when available, and were completed or corrected by PIN panellists. The full dataset is available at www.etsc.eu/pinflash50.

DEFINITION

In this report cyclists are defined as users of a pedal cycle or e-pedelec. Although the data may include riders of tricycles, the terms "conventional bicycle" (pedal cycle) and "electric bicycle" (e-pedelec) are used throughout the report. A conventional bicycle is solely human powered while an electric bicycle (e-pedelec) delivers power when the cyclist pedals, up to a formal maximum vehicle speed of 25 km/h.

This report does not deal with users of speed pedelecs. Speed pedelecs offer pedal assistance up to 45 km/h and are therefore legally categorised as a moped.

INDICATOR

The average annual change in the number of recorded deaths among cyclists and the corresponding reduction of motorised road user deaths between 2014 and 2024 (Fig. 3) is used as the main indicator of progress. In some countries, progress in reducing cyclist deaths can be related to the overall progress in reducing road deaths. Countries are also presented according to the recorded mortality, measured as the numbers of cyclist deaths per million inhabitants (Fig. 5). Population data were retrieved from the Eurostat database.

These indicators do not show whether cycling safety has improved or whether changes simply reflect shifts in cycling activity. A better indicator would have been to estimate the road risk of cyclists based on the distance or time cycled or the number of trips made. However, most PIN countries do not collect such data. Data on distance cycled were only available in Finland, Great Britain, the Netherlands, Norway, Slovenia and Sweden for at least three years since 2021. These countries use different methodologies to collect travel data, making it hard to compare them. The European Commission published a study analysing mobility trends over the period March to August 2021 with a focus on mobility in cities. Data on distance cycled are available for all EU countries for that time period.[3]

The numbers of recorded road deaths and serious injuries used in this PIN Flash report were retrieved by the European Commission from the CARE database on ETSC's request. Additional data, if needed, and qualitative information were provided by the PIN panellists (see inside cover). Some data used in this report are available in the annexes, the full data set is available at www.etsc/pinflash50. Data for the Netherlands were provided by the PIN panellist using Statistics Netherlands records adjusted for underreporting, instead of the police records (except for Fig. 17). Statistics Netherlands corrects collision data reported by the police by comparing and complementing police data with death certificates and court files of unnatural deaths. For other countries, this PIN Flash report makes use of the number of reported road deaths by the police and therefore does not take into account underreporting. Past studies have shown that underreporting is higher for cyclists, especially for collisions with no motor vehicle involved.[4]

[3] EC (2022), Study on new mobility patterns in European cities, https://data.europa.eu/doi/10.2832/728583

[4] ETSC (2018), An Overview of Road Death Data Collection in the EU, PIN Flash 35, https://etsc.eu/pinflash35/

COVID-19 PANDEMIC

This report covers the period 2014-2024. In 2020 the COVID-19 pandemic hit the world. The initial response to the pandemic was to severely restrict people's travel. This resulted in unprecedented reductions in traffic volumes in most PIN countries during 2020. In many countries traffic volumes did not reach pre-pandemic levels in 2021 either, so data in both 2020 and 2021 should be considered with this in mind. Due to the many possible short and long-term effects of the pandemic, in our analyses of the trends and data we have not tried to correct for the influence of COVID-19.

GENDER

In this report, the term 'gender' is used as it appears in the primary data source, the European Union's CARE database. It is important to note that road crash data are typically collected by police, who may determine gender or sex classification based on identification documents or their own assumptions. Different institutions may refer to gender or biological sex. Additionally, the data usually categorise individuals as male or female (and sometimes 'unknown'). We recognise that this binary classification does not fully capture the complexity of gender identities.

PART 01

Reducing cyclist deaths

1.1 OVERVIEW: CYCLIST DEATHS DECLINED BY ONLY 8% IN THE LAST DECADE

The number of cyclist deaths in the EU has decreased by 8% since 2014. In comparison, pedestrian deaths have decreased by 31% and vehicle occupant deaths have decreased by 19% during the same period. Powered two wheeler (PTW) user deaths have stagnated with a 2% increase since 2014 (Fig. 1).

It is broadly assumed that cycling levels have increased since 2014 but data on distance cycled or on the number of trips made by cycling are lacking in many EU countries.

> *Collisions involving cyclists are widely underreported, especially in bicycle collisions where no motor vehicle is involved.*

The actual numbers of cyclist deaths are higher than the police reported numbers (see section 2.1).

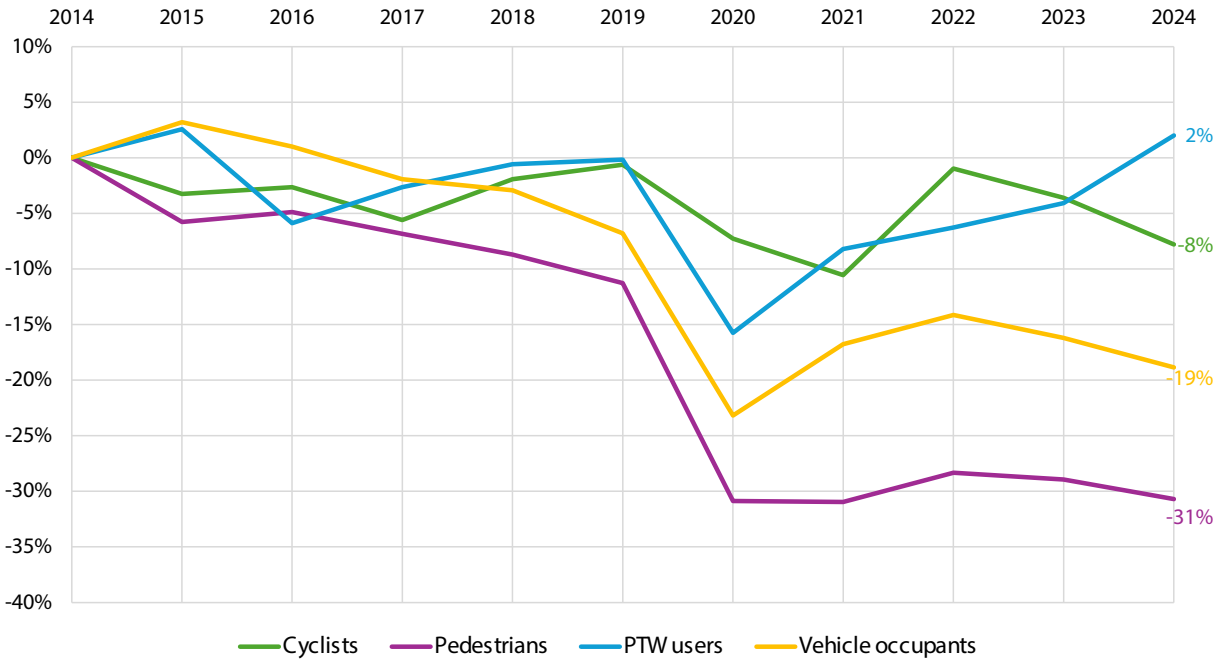


Figure 1. Progress in reducing the number of cyclist, pedestrian, PTW user and vehicle occupant deaths reported by the police in the 27 EU countries over the period 2014-2024.

1.2 DEATHS BY ROAD USER MODE

Cyclists, together with pedestrians, are the most vulnerable road users. Their use of the roads is being encouraged for reasons of health, reduction of congestion and land use, and sustainability (environmental pollution and climate change). In the years 2022-2024 (average), cyclists accounted for 10% of all road deaths across the EU while pedestrians account for a further 18% (Fig. 2). Large differences exist between countries, largely reflecting variations in modal share. For example, countries where cycling is common, such as the Netherlands and Belgium, have a higher proportion of cyclist deaths compared to countries where cycling is not as widespread, like Greece, Bulgaria or Portugal. However, this does not mean cycling in the Netherlands and Belgium is less safe than in other countries with fewer cyclist deaths, rather that there are more cyclists, covering longer distances (see section 1.5 below). For instance, according to the EU-wide travel survey,[5] people in the Netherlands cycle on average 2.95 km per day, whereas in Greece they cycle, on average, 0.76 km per day. Moreover, in the Netherlands it is common for everyone to cycle, also children and elderly.

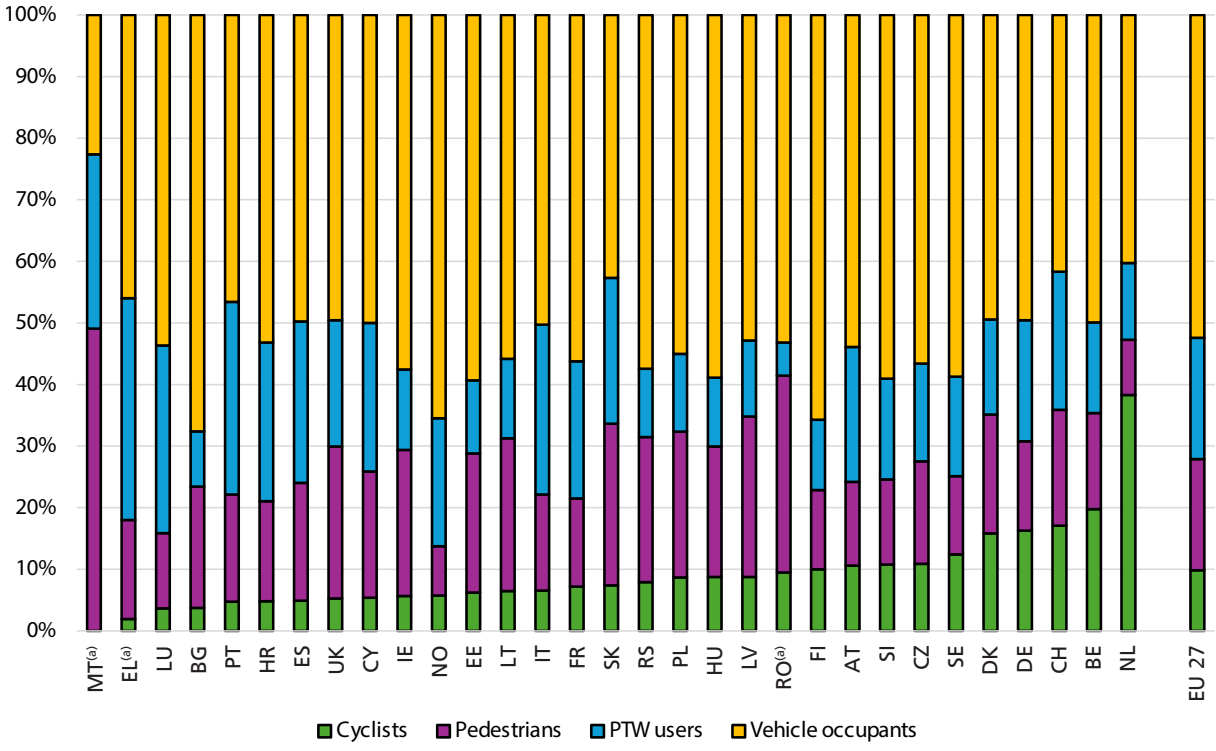


Figure 2. Cyclist, pedestrian, PTW user and motor vehicle occupant deaths reported by the police as a proportion of all reported road deaths ranked by the proportion of cyclist deaths (2022-2024 average).
(a)2021-2023

[5] EC (2022), Study on new mobility patterns in European cities, https://data.europa.eu/doi/10.2832/728583

1.3 LACK OF PROGRESS IN REDUCING DEATHS AMONG CYCLISTS

1,926 cyclist deaths were recorded in traffic collisions[6] in the EU27 in 2024.

A total of 22,153 cyclists have been killed since 2014.

Cyclist deaths in the EU have decreased by only 0.5% per year on average over the period 2014-2024 compared to a 2% average annual reduction in motorised road user deaths over the same period (Fig. 3). In order to reach the EU target of a 50% reduction in road deaths by 2030, a 6.5% annual average reduction of all road deaths would be needed.

Of the 29 countries in Figure 3, 16 saw an average annual decrease in cyclist deaths between 2014 and 2024. In Hungary and Croatia, the number of cyclist deaths decreased annually on average by 8%, followed by Lithuania and Norway with a 7% annual decrease. In Poland and Bulgaria, there was a 6% annual decrease. Five countries saw a stagnation in cyclist deaths and eight countries saw an increase. In Estonia the number of cyclist deaths increased on average annually by 9% over the period 2016-2024. Over the period 2014-2024, France saw an average annual increase in the number of cyclist deaths of 5%, the Netherlands a 4% increase, Spain a 3% increase and Switzerland a 2% increase. It needs to be noted that the numbers for Estonia are small and therefore subject to fluctuation.

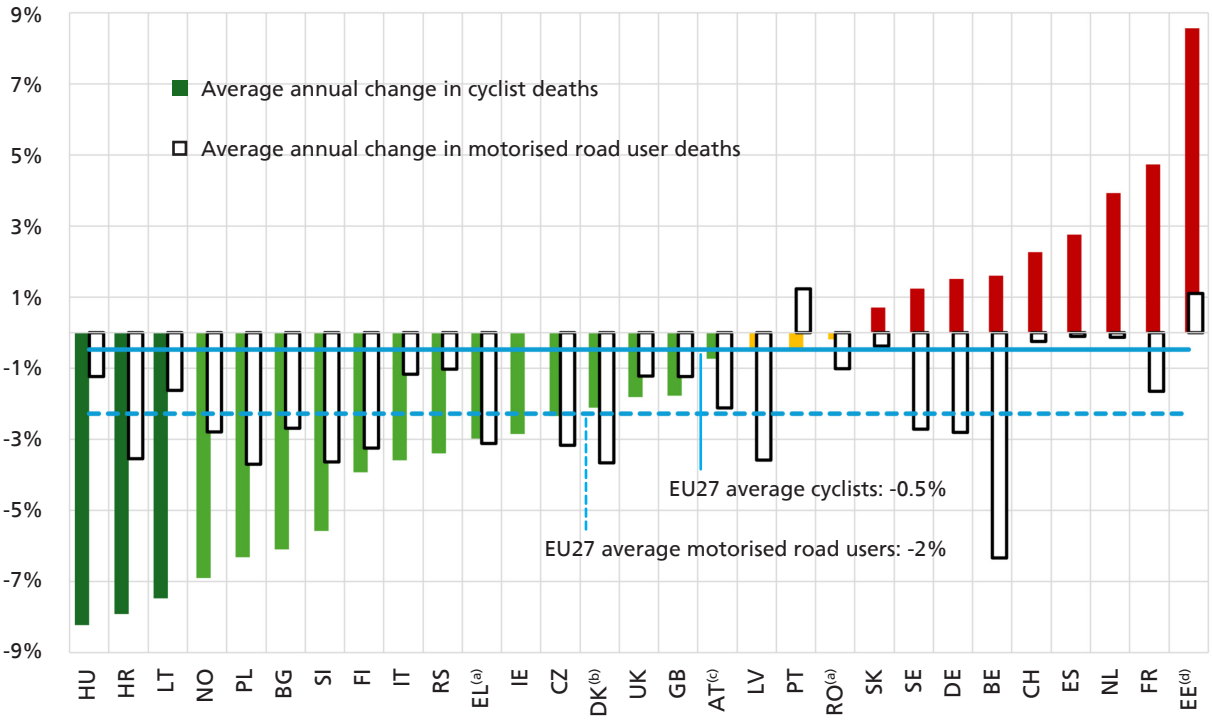


Figure 3. Average annual change in cyclist deaths compared to the annual average change in motorised road user deaths reported by the police over the period 2014-2024
(a)2014-2023, (b)Includes mobility scooters, (c)Before 2023, e-scooters were recorded as electric bicycles, (d)2016-2024. CY, LU and MT have been excluded from the graph since the number of cyclist deaths per year is small.

[6] Including single bicycle collisions with no other vehicle involved or falls after an interaction with another road user that did not actually end in a physical contact.

In Greece, cyclist deaths have reduced at a similar pace to motorised user deaths over the last decade. In 12 countries the number of cyclist deaths decreased at a faster rate compared to the number of motorised user deaths and in 11 countries the number of cyclist deaths changed at a slower pace than the number of motorised user deaths. Faster reductions in deaths for one mode of transport may reflect changes in how much that mode is used.

> *Cyclist collisions are disproportionally underreported in police reports when compared to other data sources.*[7] [8]

Previous research has revealed that this is especially the case for (single) bicycle collisions with no motor vehicle involved[9] [10] (see 2.1). The actual number of cyclist deaths on EU roads is therefore likely to be higher than the number reported by the police.

FRANCE

In France, the average annual change in cyclists' deaths between 2014 and 2024 is +4.7% compared to -1.6% for the average annual change in motorised road user deaths between the same time period. Several factors may explain the increase in cyclist deaths including police training since 2015 to improve the reporting of single bicycle crash deaths; an increase in bicycle use (+37% between 2019 and 2023), particularly in urban centres (+40% compared to +22% in rural areas between 2019 and 2023); and the increased use of electric bicycles (particularly among older users) bringing increases in both speeds and distances cycled.[11]

SWITZERLAND

STRONG RISE IN USE OF ELECTRIC BICYCLES

The increase in cyclist deaths in Switzerland between 2014 and 2024 is associated with increased cycling, driven by a strong rise in the use of electric bicycles. In addition, over the same period, there has been an increase in the average age of cyclists, reflecting the higher average age of electric bicycle users compared with conventional bicycle users. Older age is generally associated with greater physical vulnerability, which in turn increases the risk of fatal injury in the event of a crash.

1.3.1 Progress in reducing cyclist deaths: electric bicycles vs conventional bicycles

18 PIN countries separate data between electric bicycles and conventional bicycles. Figure 4 shows that the number of electric bicycle user deaths increased in all the countries that could provide data while the number of conventional bicycle user deaths decreased in all countries, with the exception of France and Germany, over the same time period. The numbers of casualties for Cyprus, Ireland, Luxembourg, Lithuania, Slovenia and Norway are very small and are not included in the figure. The time series for Czechia, Finland and Hungary are too short, so those countries are also excluded from the figure. In the 16 EU countries that separate data for electric bicycles, in 2024, 455 electric bicycle users died in traffic collisions that year.

Many factors could influence the significant increase in electric bicycle user deaths that can be observed in all countries shown in Figure 4, not least the increase in their popularity and therefore an increase in the distance cycled by electric bicycles.

7 SafetyNet (2009), Pedestrians and Cyclists, https://tinyurl.com/38bwpf6s
8 ETSC (2018), An Overview of Road Death Data Collection in the EU, PIN Flash 35, https://etsc.eu/pinflash35/
9 Ibid.
10 Schepers P., SWOV (2013), A Safer Road Environment for Cyclists, https://tinyurl.com/5adajmth
11 ONISR (2024) Road safety in France. Accident rate final report 2024 (In French : La sécurité routière en France. Bilan de l'accidentalité de l'année 2024) https://tinyurl.com/3ccufr37

In 2010, 588,000 electric bicycles were sold in the EU whereas by 2020 that number had risen to 4,537,000.[12]

The average age of electric bicycle users could also be a significant factor as they are popular among older people who are generally more fragile. Some countries are also seeing a rise in the popularity of electric bicycles among young and inexperienced riders.

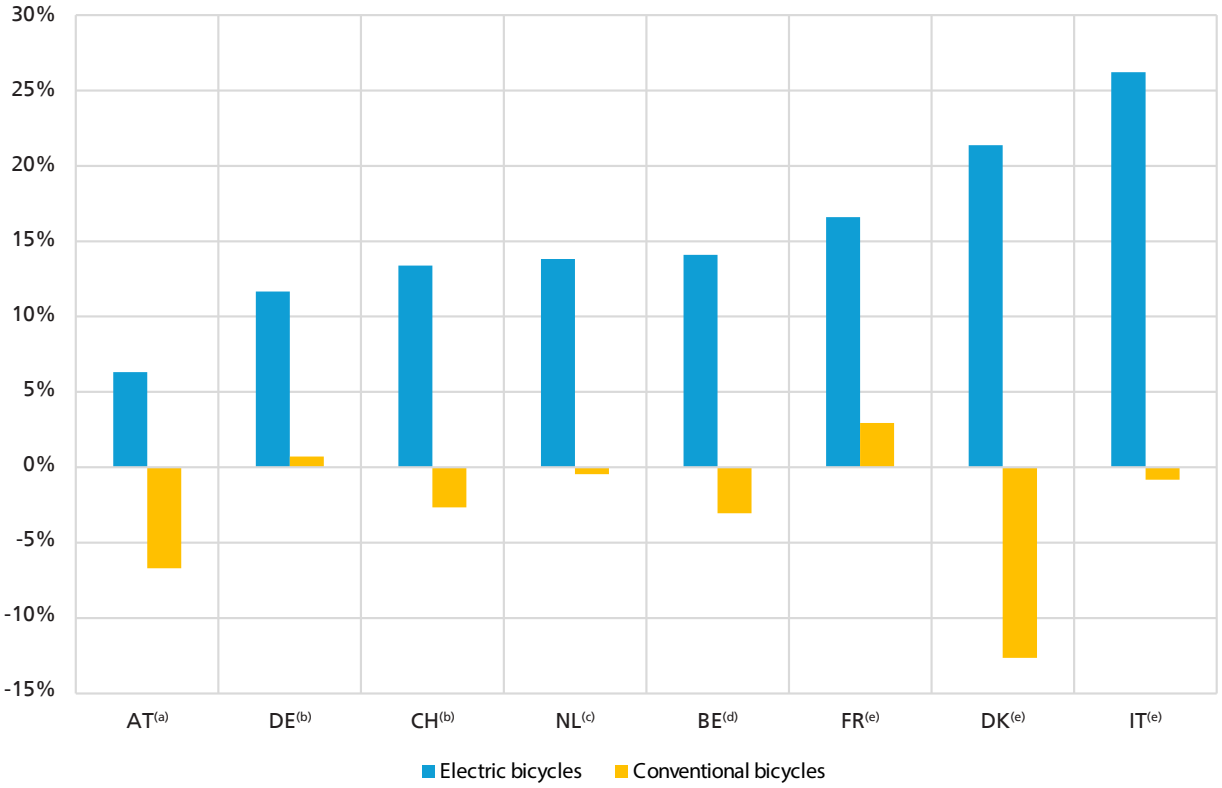


Figure 4. Average annual change in the number of electric bicycle user deaths compared to the average annual change in the number of conventional bicycle user deaths over the same time period.
(a)2018-2024, (b)2014-2024, (c)2016-2024, (d)2015-2024, (e)2020-2024

[12] CONEBI (2021), European bicycle industry and market profile, https://tinyurl.com/4wjb7tvn

1.4 CYCLIST MORTALITY AMONG EU COUNTRIES VARIES BY A FACTOR OF SEVEN

Cyclist mortality (deaths per million inhabitants) is a limited indicator of cyclist safety as it does not take into account levels of cycling (see section 1.5 below). Thus, the mortality indicator can represent a mixture of:

a. the level of safety for cycling or
b. cycling distance travelled is higher in some countries than in others and therefore the number of cyclist deaths is linked to the level of distance cycled.

Bearing this in mind, fewer than two cyclists per million inhabitants were killed each year in Norway, Greece, the UK, Luxembourg, Ireland and Spain (Fig. 5). The highest cyclist mortality is in the Netherlands, with 15 cyclist deaths per million inhabitants, Belgium and Romania with eight and Serbia with six. Cyclist mortality differs by a factor of almost seven between the highest and the lowest values.

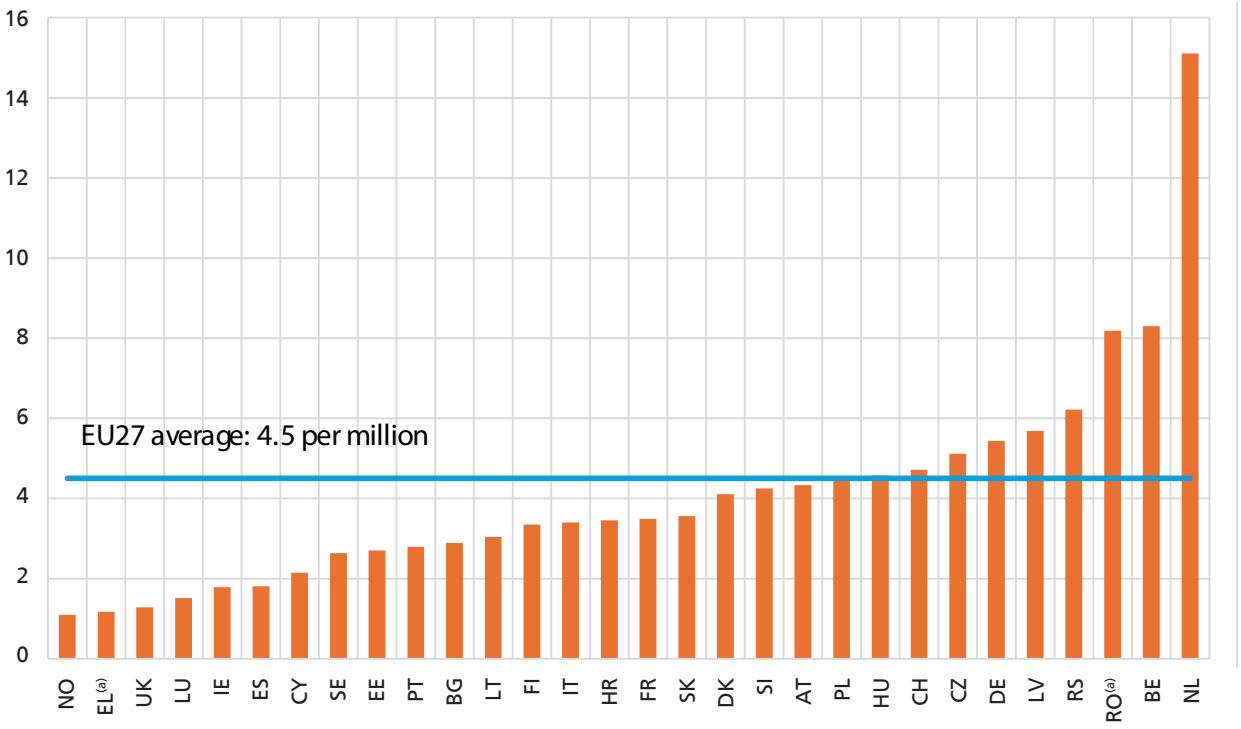


Figure 5. Average annual cyclist deaths per million inhabitants reported by the police (average 2022-2024).
(a)2021-2023

1.5 DATA ON DISTANCE CYCLED

An indicator to measure the risk of cycling as well as to evaluate improvements in cycling safety over time requires data on distance cycled, time spent cycling or the number of trips made. Only Finland, France, the Netherlands, Sweden, Slovenia, Great Britain and Norway have reported travel data for at least three years since 2021 (Table 1). These countries use different definitions to indicate travel data and, consequently, comparisons between countries are not possible. Table 1 illustrates the differences between an indicator on cyclist road mortality (deaths per million inhabitants, Fig. 5) and an indicator on cycling risk (deaths per distance cycled, Fig. 6). In the Netherlands, on average, a person cycles around 1000 km annually. The Netherlands has the highest cyclist mortality rate in the EU with 15 cyclist deaths per million inhabitants (Fig. 5) compared to an EU average of 4.5 per million. However, when distance cycled is taken into account, the risk, which is 15 deaths per billion km cycled, is not necessarily an indicator of an unsafe cycling environment and is similar to the other countries that could provide data on distance cycled. As an example, Sweden has a cyclist mortality of 2.6 per million, lower than the EU average, and a cyclist risk of 13 deaths per billion km.

> *Overall, these limited data indicate that countries with a relatively high amount of distance cycled do not have a higher cyclist death risk compared to countries where cycling is not as common (Fig. 6).*

Table 1. Distance cycled per year per inhabitant (km), cyclist deaths per million inhabitants and cyclist deaths per billion km cycled in countries that could provide data for at least one year on km cycled

	Distance cycled per year per inhabitant (km)	Cycle deaths per million inhabitants	Cyclist deaths per bln km cycled
FI	251	3.4	13
FR	92[1]	3.5	40
NL	980	15.1	15
SE	206	2.6	13
SI	164	4.3	31
GB	89	1.3	15
NO	258	1.1	4

Source: CARE database and national statistics provided by PIN Panellists in each country
[1]Enquête mobilité des personnes (mobility survey) from 2019

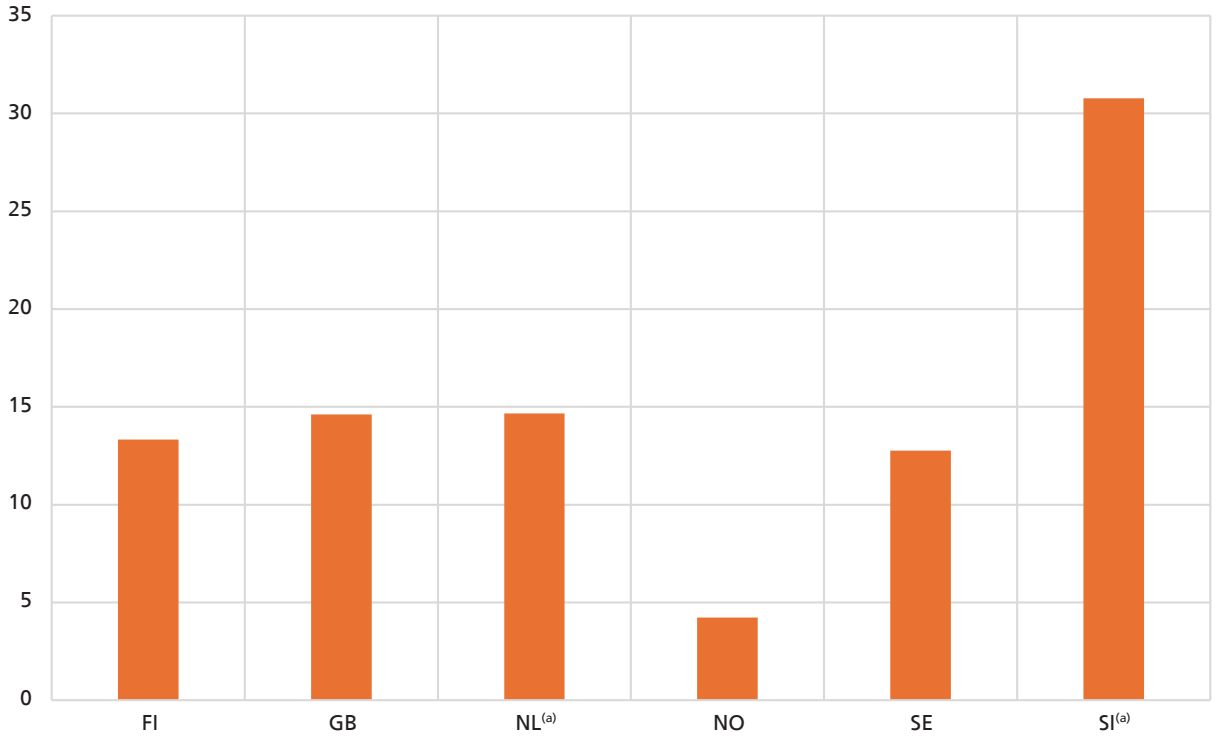


Figure 6. Cyclist deaths per billion km cycled over the period 2022-2024 or last three years available.
(a)2021-2023

Cycling travel data from more countries would be helpful to explain how increased levels of cycling affect developments in cyclist deaths and serious injuries in the EU. The Eurobarometer travel survey on mobility and transport conducted in 2019 does provide an overview on modal share in urban areas in all EU countries.[13] According to the survey, the main mode of transport on a typical day, on average, in the EU is the car (52%). Only 8% of the respondents use a privately owned bicycle or scooter and 1% a shared bicycle or scooter on average in the EU. But those averages hide huge differences between countries. Respondents in the Netherlands are much more likely than those in other countries to say a privately owned bicycle or scooter is their main mode of transport (41%), with Sweden (21%) the only other country where at least one in five says this.

[13] EC (2020), Special Eurobarometer 495, Mobility and Transport, https://tinyurl.com/5anp4k6y

1.6 IN THE EU, 65% OF ALL CYCLIST DEATHS ARE THE CONSEQUENCE OF AN IMPACT WITH A MOTOR VEHICLE

Passenger car collisions account for 44% of all cyclist deaths in the EU (Fig. 7).

Collisions with heavy goods vehicles account for 9% of cyclist deaths, vans 7%, PTW 3%, buses 2% and other vehicles 4%.

28% of cyclists die in single bicycle crashes where no other vehicle is involved

and 2% in collisions with other bicycles. Collisions without motor vehicles are more likely to be under-reported. The proportion of cyclist deaths as a result of a collision with a car is markedly higher than the EU average in Latvia (66%), Croatia (63%), Poland and Lithuania (62%), and Italy (60%). The largest share of cyclist deaths as a consequence of an impact with a heavy goods vehicle are in Estonia (36%), Serbia (24%) and Belgium (19%). The largest proportion of cyclist deaths as a consequence of an impact with a van are in Croatia (18%), Greece and Romania (16%) and Portugal (13%). Collisions with PTWs are rather rare according to reported collisions and in most EU countries do not account for more than 5% of all cyclist deaths. Single bicycle crashes account for 55% of cyclist deaths in Finland, 49% in Sweden, 48% in Slovenia and 42% in Switzerland.

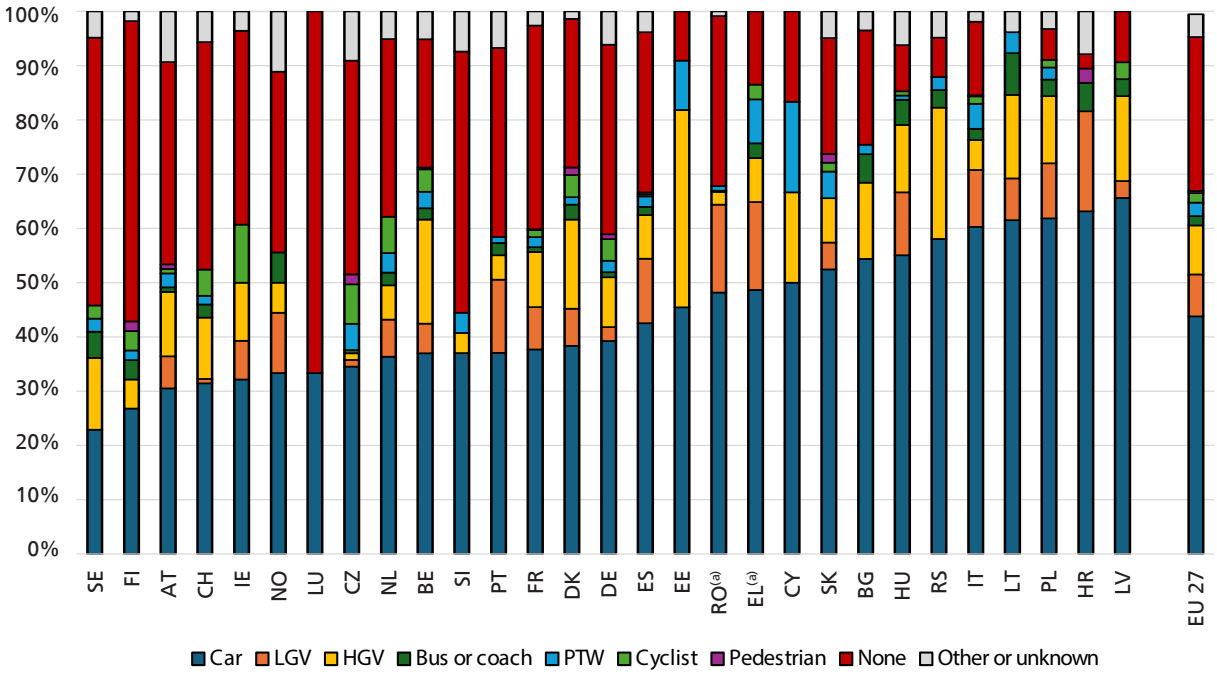


Figure 7. Proportion (%) of cyclist deaths that occurred in collisions with different types of vehicles, ranked by the % that occurred in collisions with cars. Average years 2022-2024 (or last three years available)
(a)2021-2023

Table 2. **EU27 cyclist deaths over the period 2022-2024 (average) taking into account the main other participant in the collision.**

Fatalities	In a collision with... Car	PTW	Cyclist	Pedestrian	LGVs	HGVs	Bus or Coach	None	Other or unknown	Total
Cyclists	873	50	54	7	149	177	35	568	86	1999

Source: CARE database and national statistics provided by PIN Panellists in each country

1.7 HALF THE CYCLISTS KILLED IN THE EU ARE 65 YEARS OLD OR OVER

Older people (65 years old or over) account for half of all cyclists killed in the EU (Fig. 9).

51% of all cyclists killed in the EU are 65 years old or over while they represent 21% of the EU population. While the mortality of older people is higher for almost all causes of death, several factors may explain this higher mortality among cyclists, particularly physical vulnerability and fragility, their decreasing ability to keep balance, use of medication or general deterioration of reaction time.[14] Behaviour in traffic may also be affected by the growing use of electric bicycles, inducing higher speeds and longer distances cycled. Research in the Netherlands, for instance, shows that older people (aged 66-89) cycle twice as much as people aged 30-65 and that 4 out of 10 older people use an electric bicycle.[15] This might also explain the high proportion of cyclist deaths among people aged 65 or over in the Netherlands.

People aged 50-64 years old account for 25% of all cyclist deaths in the EU, 30-49 year olds for 14%, 15-29 year olds for 7% and children under 15 for 3% (Fig. 9).

In the EU, cyclist mortality for children under 15 years is 0.8 per million child population, 1.9 for young people aged 15 to 29 and 2.4 for adults aged 30-49 and 5.4 per million population for those aged 50-64 (Fig. 8). The highest cyclist mortality is for people aged 65 or older, with 9.5 deaths per million population for the 65-79 age group and 13.9 deaths per million population for people over 80 years old.

In the Netherlands, people aged 65 years or over have the highest mortality rate as cyclists with 35 deaths per million population for the 65-79 years old age group and 89 deaths per million population for those over 80 years old, which is by far the highest rate in the EU. The data used for this indicator do not allow for an estimation of the extent to which the differences in mortality rates between the age groups are down to the amount of cycling, amount of involvement in collisions or ability to survive a collision - each factor is likely to vary with age. For instance, according to the EU-wide travel survey,[16] in the EU, people aged 15 to 29 cycle on average 2.38 km per day, people aged 30 to 64 cycle on average 1.32 km per day and people aged 65 or over cycle on average 0.72 km per day. These proportions vary considerably among countries. For example, in the Netherlands, people aged 65 years or over cycle on average 2.25 km per day (more than 800 km annually).

[14] ETSC (2023), PIN Flash Report 45 Reducing older people's deaths on European roads, www.etsc.eu/pinflash45
[15] SWOV (2025), Electric bicycles keep elderly people with chronic conditions mobile – but safety deserves attention (in Dutch), https://tinyurl.com/4brwx28v
[16] EC (2022), Study on new mobility patterns in European cities, https://data.europa.eu/doi/10.2832/728583

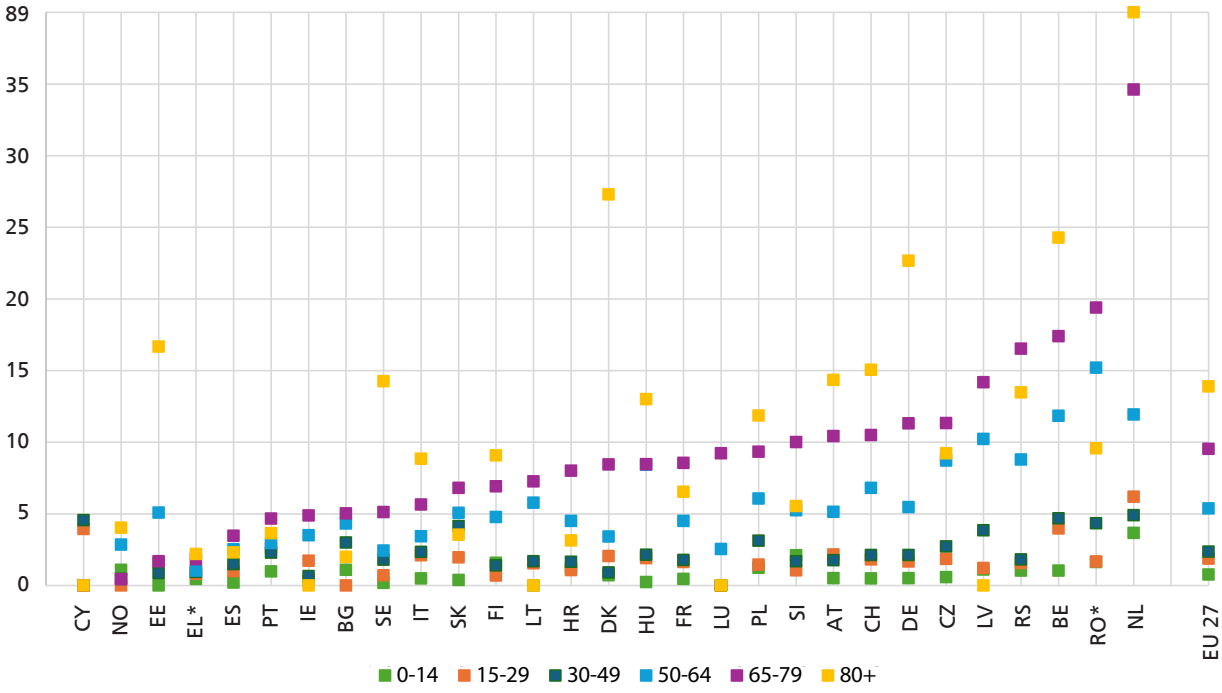


Figure 8. Cyclist deaths reported by the police per million inhabitants (2022-2024 average or last three years available) for each of the age groups (years) ranked by 65-79 mortality.
*2021-2023, AT – Before 2023, e-scooters were recorded as e-bicycles.

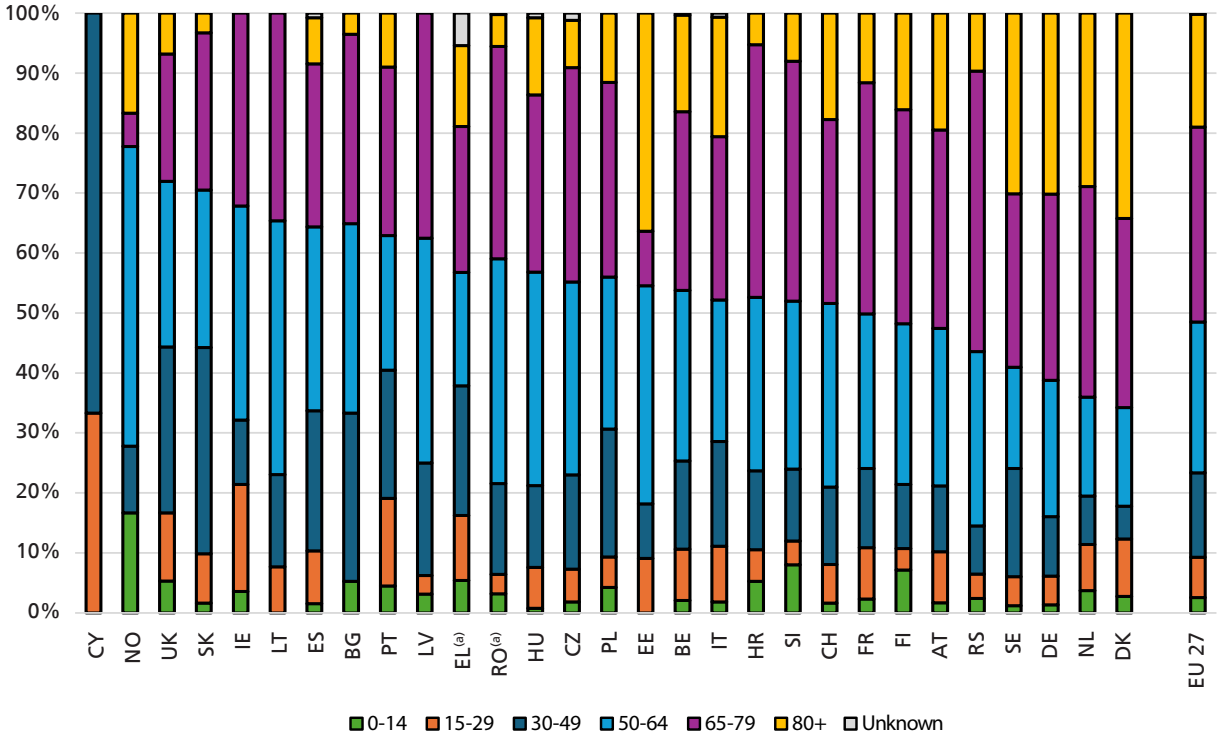


Figure 9. Proportion (%) of cyclist deaths by age group, ranked by proportion of 65+ cyclist deaths, from lowest to highest. Average of the years 2022-2024 (or last three years available).
(a)2021-2023, AT – Before 2023, e-scooters were recorded as electric bicycles. SE – data source: in depth database at TrafikStrada and Trafikanalys

1.7.1 Cyclist deaths by age: electric bicycles vs conventional bicycles

When comparing electric bicycle user deaths with conventional bicycle user deaths it can be noted that there is a slightly higher proportion of electric bicycle road user deaths for those aged 65 years old or over. The proportion of elderly (65 years or over) electric bicycle user road deaths varies from between 46% and 81% of all electric bicycle user deaths in the countries where data are available (Fig. 10). At the same time the proportion of conventional bicycle user road deaths for people aged 65 or over varies from between 37% and 64% of all conventional bicycle user deaths in countries where data are available. This difference can be due to a higher use of electric bicycles by older people.

The numbers of electric bicycle user road deaths are relatively small (less than 20 in several countries) and therefore subject to relatively strong fluctuations.

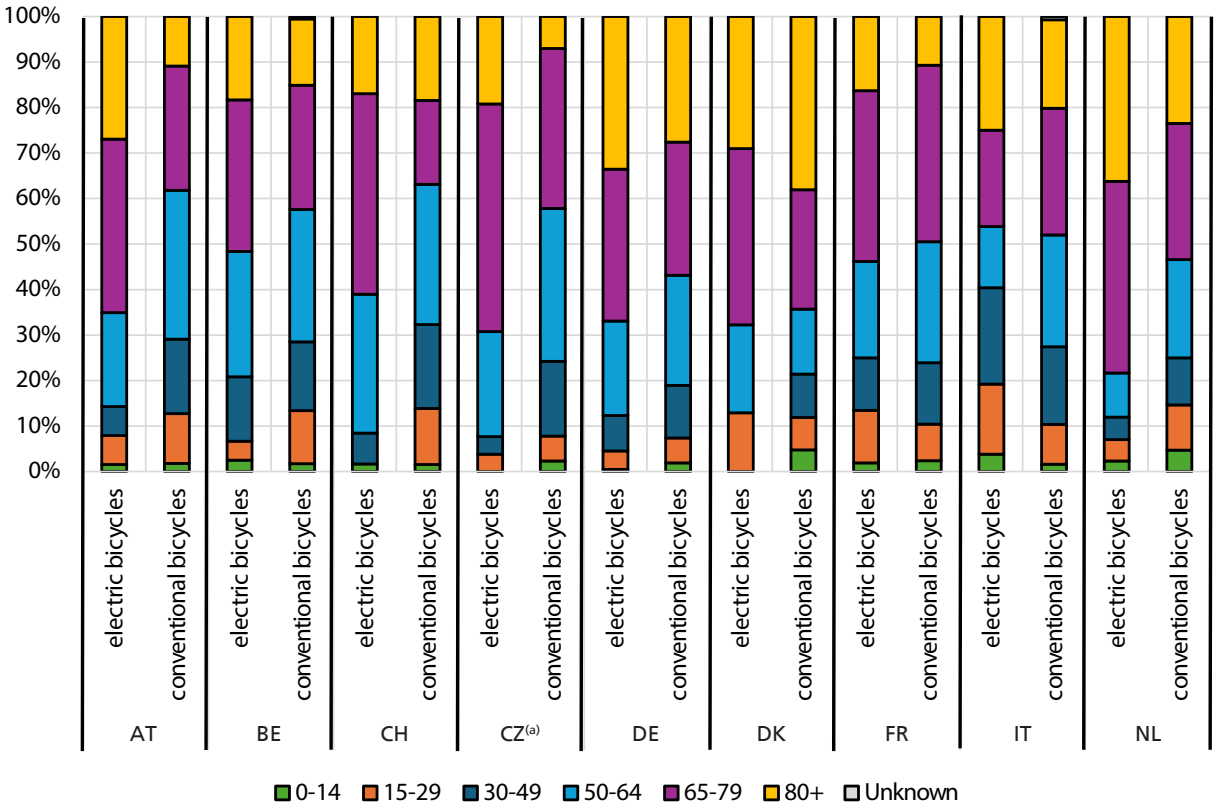


Figure 10. Proportion (%) of electric bicycle user road deaths and conventional bicycle user road deaths by age group. Average 2022-2024 (or last three years available)
(a)2023-2024

1.8 GENDER DIFFERENCES IN CYCLIST DEATHS

Four out of every five cyclists killed in the EU are male (Fig. 11).

1,261 female and 5,157 male cyclists died in the EU over the last three years, representing 20% and 80% of all cyclist deaths respectively.

The highest proportion of male cyclists among all cyclists killed is in Greece (95%), Norway and Spain (94%), and Slovakia (93%). The lowest proportion of male cyclists among all cyclists killed is in the Netherlands (66%), Poland, Belgium and Switzerland (75%).

The substantially larger number of male cyclists' deaths could partly be due to the fact that men cycle more than women. Countries with higher levels of cycling, such as the Netherlands, have a higher proportion of female cyclists among all cyclists killed. This could be because the distance travelled by men and women in these countries is more similar than in other countries. In the Netherlands for instance, men cycle on average 3.16km per day while women cycle on average 2.68km per day.[17] In the UK, however, in 2022, men cycled on average 89 miles (143km) per person per year while women cycled on average 25 miles (40km).[18] Other factors contributing to the higher proportion of male cyclists killed compared to female cyclists killed could be mobility patterns (men are more likely to travel on rural roads) and risky behaviours (eg. cycling at higher speeds, riding closely together in a group, cycling under the influence of alcohol) (see table 8).[19 20]

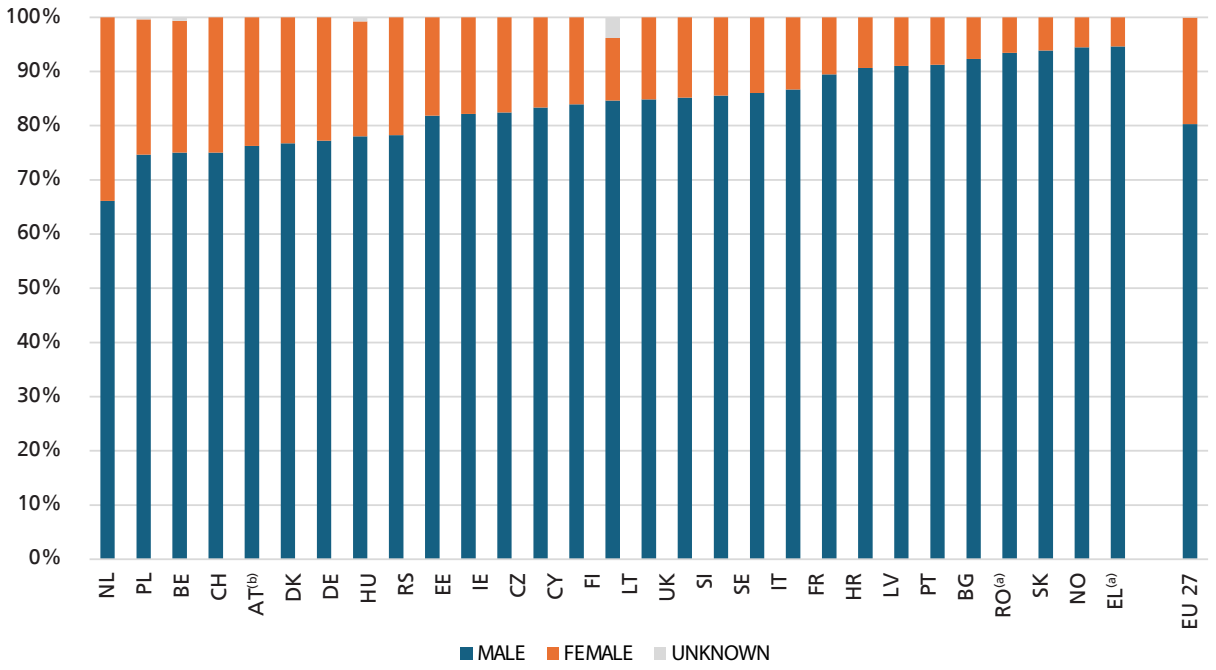


Figure 11. Proportion (%) of cyclist deaths by gender, ranked by proportion of male cyclist deaths, from lowest to highest. Average years 2022-2024 (or last three years available)
(a)2021-2023, (b)AT – Before 2023, e-scooters were recorded as electric bicycles.

17 CBS (2024), How many bicycles do Dutch residents own? (in Dutch, Hoeveel fietsen inwoners van Nederland?), https://tinyurl.com/4drzv5hd
18 DfT (2023), Walking and cycling statistics, England: demographic differences in walking and cycling, https://tinyurl.com/r4ep3d8r
19 Prati, G. *et al.* (2019), 'Gender differences in cyclists' crashes: an analysis of routinely recorded crash data, https://tinyurl.com/3j96zh6w
20 Wijlhuizen, G. J. *et al.* (2016), Sport Cycling Crashes among Males on Public Roads, the Influence of Bunch Riding, Experience and Competitiveness, https://tinyurl.com/p33b4fks

1.8.1 Gender differences in cyclist deaths: electric bicycles vs conventional bicycles

When comparing electric bicycle user road deaths with conventional bicycle user road deaths it can be noted that there is not a large difference in the proportion of male cyclists among all cyclists killed.

For electric bicycle users, the proportion of male cyclists among all cyclists killed varies from between 64% in the Netherlands to 88% in Italy (Fig. 12).

For conventional bicycle users, the proportion of male cyclists among all cyclists killed varies from between 67% in Austria to 88% in France (Fig. 12).

The numbers of electric bicycle road deaths are relatively small and therefore subject to relatively strong fluctuations.

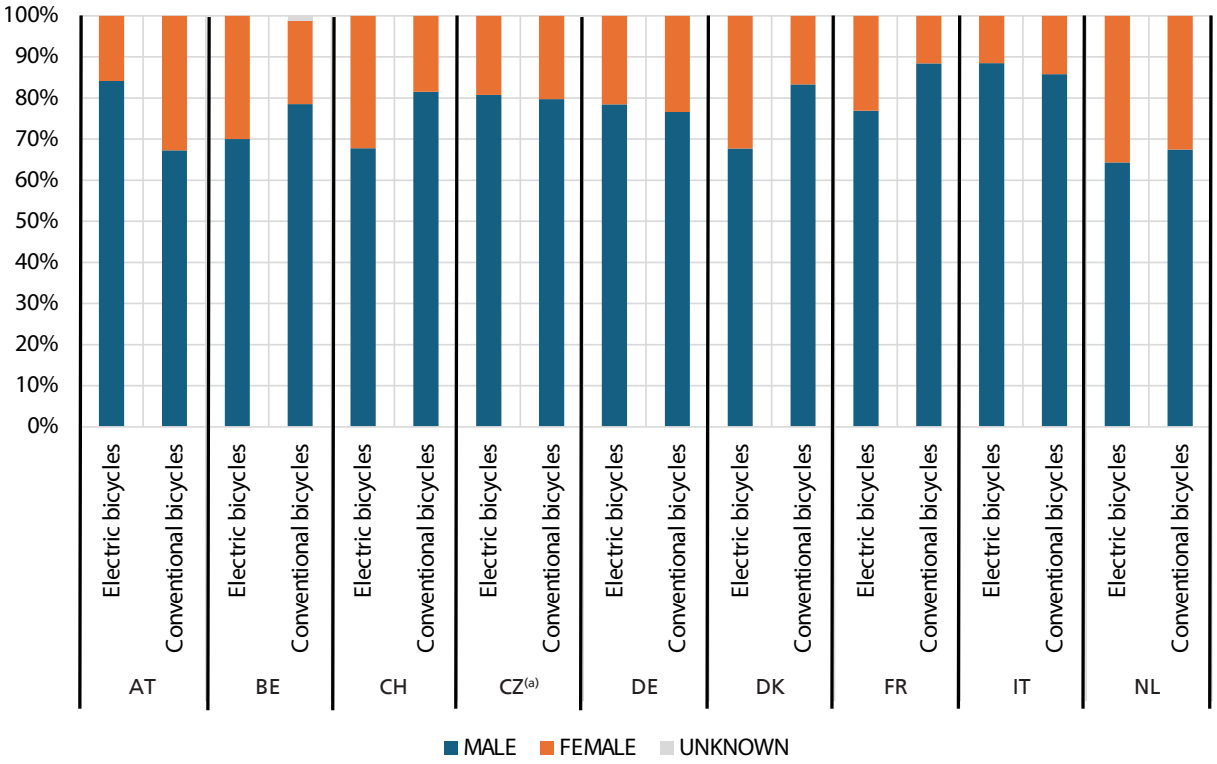


Figure 12. Proportion (%) of electric bicycle user road deaths and conventional bicycle user road deaths by gender. Average years 2022-2024 (or last three years available)

(a)2023-2024

RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Consider how to improve registration of deaths and serious injuries of cyclists and tackle underreporting.
- Analyse single bicycle collisions, including how they are recorded, as a matter of priority.
- Identify and improve methods to estimate cycling distance travelled.
- Collect travel data for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) by road types.
- Add fields in police reports to indicate e-pedelecs to keep track of serious and fatal collisions involving these vehicles.

RECOMMENDATIONS TO EU INSTITUTIONS

- Maintain the current definition of electric bicycles (e-pedelecs) – with a designed speed of 25km/h and a pedal-assisted maximum continuous output of 250W which is cut when the vehicle reaches its designed speed.
- Conduct research on the road safety implications of electrically assisted cycles including tampering prevention and infrastructure needs.
- Encourage Member States to collect travel data in a harmonised way for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) by road types.

PART

02

Reducing serious injuries among cyclists

2.1 UNDERREPORTING

Estimates of serious injuries depend on definitions, data collection methods and data quality. Sample studies show that the actual number of serious injuries is often considerably higher than the number recorded by the police. In general, the lower the injury severity, the higher the rate of injuries not reported.

> *According to the most comprehensive studies, the average reporting rate of injured cyclists in police collision databases in Europe is around 10%.*[21]

The level of underreporting tends to be higher for pedestrians, cyclists and motorcyclists than for vehicle occupants.

> *Underreporting is particularly common when no motor vehicle is involved, especially in single-vehicle collisions.*

In Austria, according to KFV Injury DataBase (IDB) Austrian data, 44,900 patients were treated in hospitals following a micromobility (including cycling) collision in 2024. Of these injuries, 12,150 were recorded by the police.[22]

A two-year study in Finland of visits to a hospital emergency department by those injured riding a bicycle, moped or motorcycle found that considerably more cyclist (and PTW) injuries were identified during the study than appeared in official statistics. Single collisions were especially likely to be underreported.[23]

In France, using the Rhone registry, the level of reporting among injured cyclists has been estimated at 12.5% (8 'real' injuries for every 1 injury recorded). However, the level of reporting depends on a number of factors including gender, age, the severity of the injuries, location, presence of another road user, etc.[24]

A study carried out in Hungary found that only 8.3% of cyclists with personal injury were reported in the country's official collision database. The majority (62.6%) of injured cyclists identified in the study received neither police action, nor medical treatment. Most of these cyclists suffered only minor injuries or were involved in single-vehicle collisions.[25]

In Ireland, over the period 2014-2022, a total of 4,790 cyclists were admitted to hospital as in-patients with injuries from road traffic collisions. Over the same period, police statistics indicated that only 1,932 cyclists were seriously injured. Most hospitalisations (64%) and MAIS3+ injuries (59%) among cyclists in this study were from single-bicycle collisions.[26] Another study focusing on single-bicycle collisions found that over the period 2014–2023, there were approximately 9.4 cyclists hospitalised due to single-bicycle collisions for every serious injury from such collisions recorded in police statistics.[27]

In the Netherlands, about 12% of the serious, MAIS3+ injuries in collisions without a motor vehicle involved (mostly single bicycle crashes) are registered in the Database of Registered Crashes in the Netherlands (BRON, based on police registrations). When a motor vehicle is involved in a collision, the reporting of casualties with MAIS3+ injuries in the BRON database is 63%.[28]

In Switzerland, levels of underreporting of serious injuries are estimated every year on the basis of a calculation. According to this calculation, the number of cyclists injured in road traffic was 33,630 in 2020. According to police records, the number of cyclists injured in 2020 was 3,608.[29]

[21] Pauer, G., Krizsik, N., Szigeti, S., Estimating the Underreporting Rate of Injured Cyclists, Periodica Polytechnica Civil Engineering, 67(2), pp. 619–627, 2023. https://doi.org/10.3311/PPci.19429
[22] Data provided by PIN panellist for Austria.
[23] Airaksinen N. (2018), Accidents involving cyclists, moped riders, and motorcyclists – severity of injuries and accident statistics (in Finnish), https://tinyurl.com/2ukkjabb
[24] ONISR (2024), Method for adjusting the number of road casualties (in French), https://tinyurl.com/58mdntsk
[25] Pauer, G., Krizsik, N., Szigeti, S., Estimating the Underreporting Rate of Injured Cyclists, Periodica Polytechnica Civil Engineering, 67(2), pp. 619–627, 2023. https://doi.org/10.3311/PPci.19429
[26] Castelló S. (2024), Serious injuries in pedal cyclists in hospital and An Garda Síochána data, https://tinyurl.com/3sjp38wj
[27] RSA (2025), Serious injuries from single-cyclist collisions in Ireland, https://tinyurl.com/5x6jhtx8
[28] SWOV (2024), Estimate of the number of serious traffic injuries in 2023, https://tinyurl.com/kkmc4dau
[29] BFU (2023), Statistics on non-occupational accidents and the level of safety in Switzerland, https://tinyurl.com/9cuw5hzr

In Belgium, the report rate among injured cyclists has been estimated at 18% (5.6 hospitalised injuries for every 1 injury recorded by the police). This is higher than for all serious injuries in traffic where the ratio of those seriously injured found in hospital data compared to those found in police data is 3.9, suggesting a report rate of approximately 25%.[30]

As we build more and better cycling infrastructure, and collisions between cyclists and motorised vehicles reduce, data from hospitals will become essential as the proportion of single vehicle crashes will likely increase and these are heavily underreported by police in the statistics.[31] This could be particularly relevant in the context of governments seeking to achieve a modal shift towards more sustainable transport.

SWEDEN

IMPROVING THE RECORDING OF CYCLIST SERIOUS INJURIES

In Sweden, the registration of road traffic collisions and injuries is coordinated by the STRADA database (Swedish Traffic Accident Data Acquisition). Nationwide data on road traffic collisions have been reported to STRADA by the police since 2003. Starting in 1999, approximately 70 hospitals with emergency care departments and an orthopedic or trauma surgery department were approached one by one to start data collection on a voluntary basis. Full national coverage of hospitals was reached in 2016. Since June 2021 the hospital data collection is regulated by law, making it mandatory.

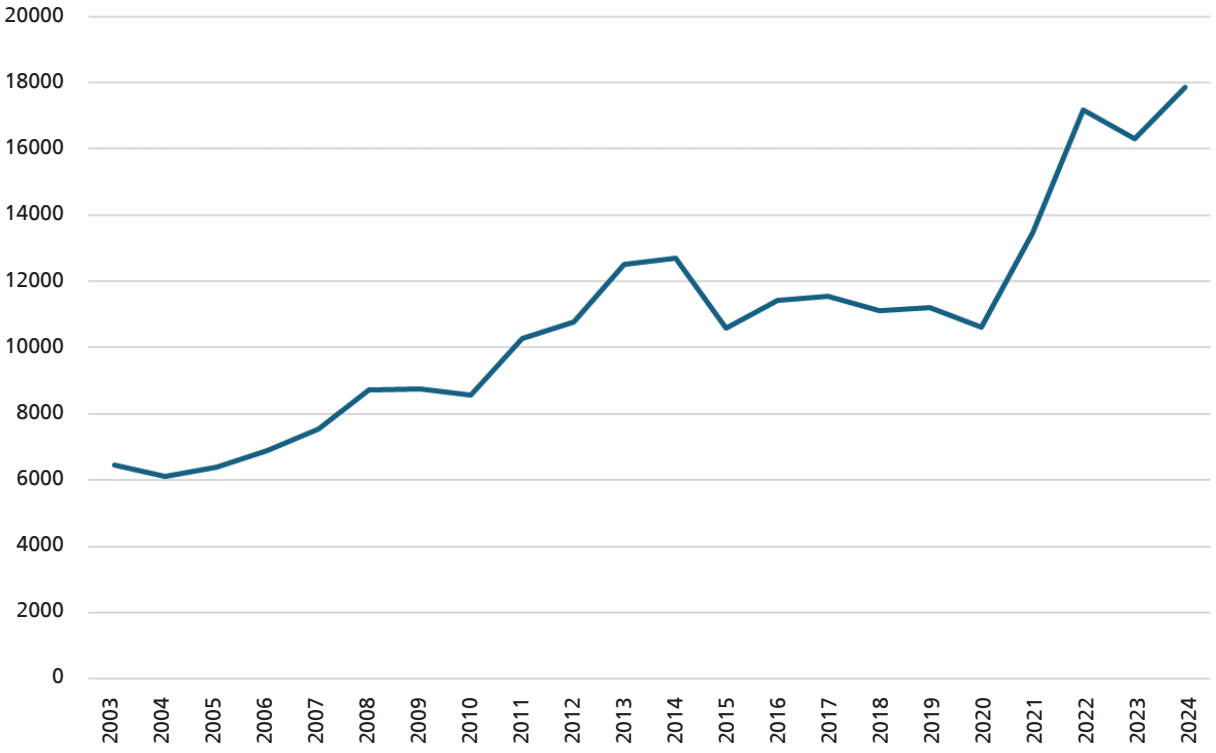


Figure 13. Injured cyclists reported by the Police and hospitals in Sweden 2007-2024. (data provided by the Swedish Transport Agency)

[30] VIAS (2025), Gehospitaliseerde verkeersgewonden in 2023 (In Dutch and French: Hospitalised seriously injured road traffic victims 2023) https://tinyurl.com/y7bewja5

[31] 103 TOI (2021) Traffic safety for cyclists and pedestrians – status and challenges (In Norwegian only) https://tinyurl.com/23nbedxh

The impact of including comprehensive data on cyclist injuries from hospitals is clear to see in Figure 13. The number of reported injured cyclists in Sweden has been increasing since the implementation of the STRADA information system in 2003. Two noticeable points can be seen in Figure 13, one around 2016 when hospital reporting reached national coverage and one around 2021 when the STRADA law was implemented, leading to mandatory reporting by hospitals (it was voluntary up until then) and informed patient consent to share data was no longer required.

In 2024 the police reported 2,733 injured cyclists to the STRADA database and yet in total for that year, (including data from around 70 hospitals) the STRADA database contains reports of 16,127 injured cyclists.

2.2 CYCLIST SERIOUS INJURIES COMPARED TO CYCLIST DEATHS

33,803 cyclists were seriously injured in the EU21[32] in 2024 according to police records, this represents about 30% of all serious injuries.

Figure 14 shows the relative change in the number of cyclists seriously injured since 2014 compared with the change in the number of cyclist deaths. The number of cyclist deaths decreased by 8% in 2024 compared to 2014, with a significant drop during the years 2020 and 2021, likely due to COVID travel restrictions, followed by an increase in the year 2022. On the other hand, the number of cyclists seriously injured in 2024 was 12% higher than in 2014. The number of cyclists seriously injured increased every year between 2015 and 2022, followed by a decrease in the following two years.

The increase may partly reflect improvements in the reporting of serious injury data in most European countries and it is not necessarily or only related to an increase in the numbers of seriously injured in absolute terms.

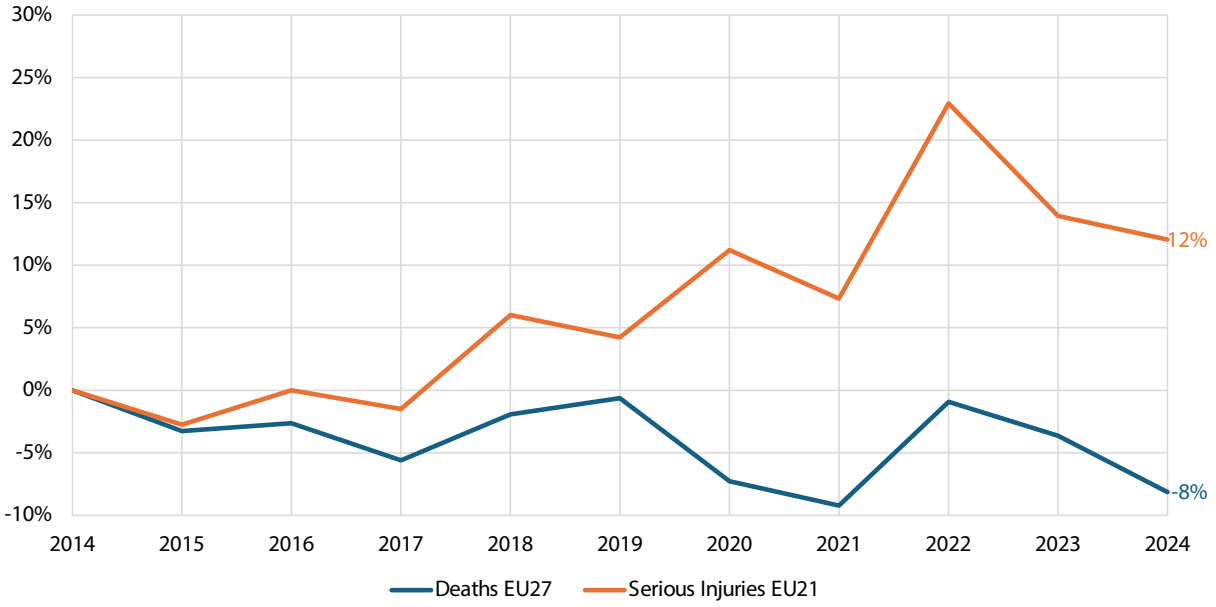


Figure 14. Relative change in the number of cyclist deaths and serious injuries according to police records over the period 2014-2024 in the EU. EU 21: EU 27 excluding ES, IT, LT, MT, RO and SK.

[32] EU21: EU27 excluding ES, IT, LT, MT, RO and SK.

2.3 PROGRESS TOWARDS REDUCING REPORTED SERIOUS INJURIES OF CYCLISTS

Recorded serious injuries among cyclists in the EU21[33] increased on average by 1.9% per year over the period 2014-2024 (Fig. 15) compared to a 0.5% average annual reduction in cyclist deaths (Fig. 3). Recorded serious road traffic injuries among cyclists reduced annually by, on average, 7% in Cyprus, 6% in Czechia and 5% in Greece. On the other hand, serious road traffic injuries among cyclists increased by, on average, 13% annually in Luxembourg, 8% in Ireland, 6% in Estonia and 4% in Sweden, France, Austria and the Netherlands.

Figure 15 should be treated with caution as recording rates of serious injuries could have improved in some countries, and deteriorated in others, following changes in police resources or police priorities. The actual numbers of cyclist serious injuries are likely to be higher than the reported numbers (see section 2.1).

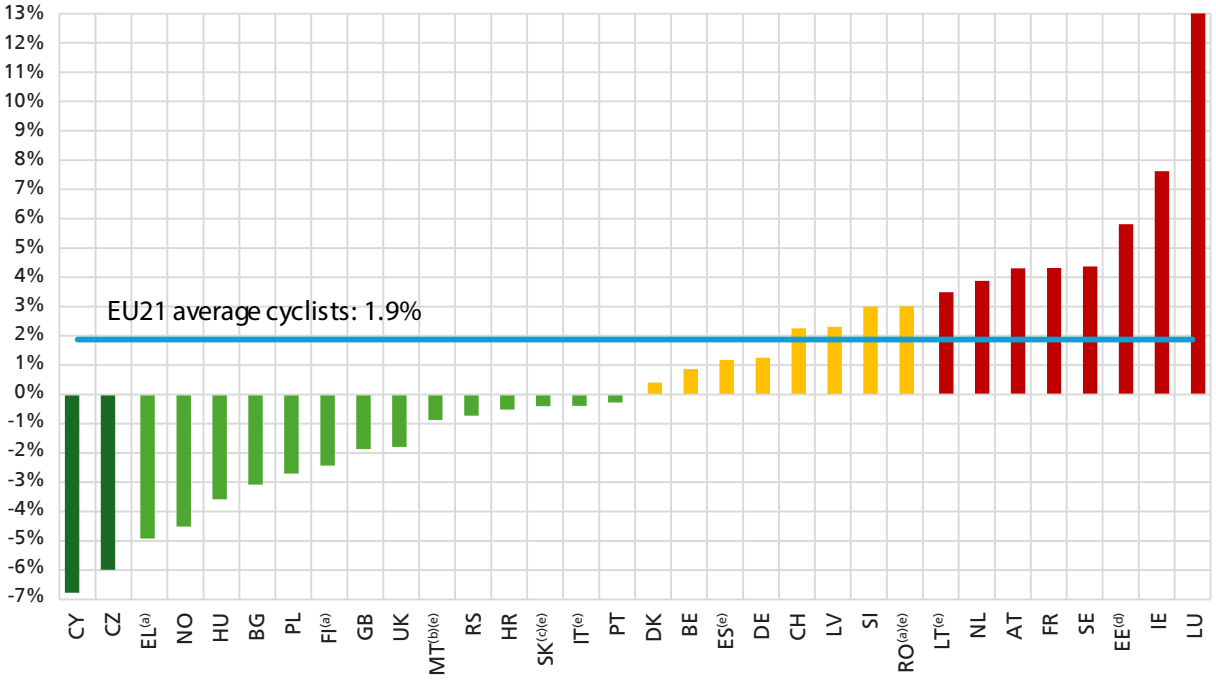


Figure 15. Average annual change in reported cyclist serious injuries over the period 2014-2024
(a)2014-2023, (b)2015-2023, (c)2016-2024, (d)2015-2024, (e)all cyclist injuries

[33] EU21: EU27 excluding ES, IT, LT, MT, RO and SK.

2.3.1 Cyclist serious injuries: electric bicycles vs conventional bicycles

Figure 16 compares the average annual change in the number of electric bicycle user serious injuries and conventional bicycle user serious injuries. The number of electric bicycle users who were seriously injured increased on average annually in all the countries that could provide data. The figure shows that the increase was greater than that observed among conventional bicycle users who were seriously injured over the same period in all the countries that were able to provide data. This increase could also be due to an increase in the use of electric bicycles over recent years. The annual number of electric bicycle users seriously injured in Ireland, Lithuania and Slovenia are relatively small and, therefore, may be subject to relatively strong annual fluctuations.

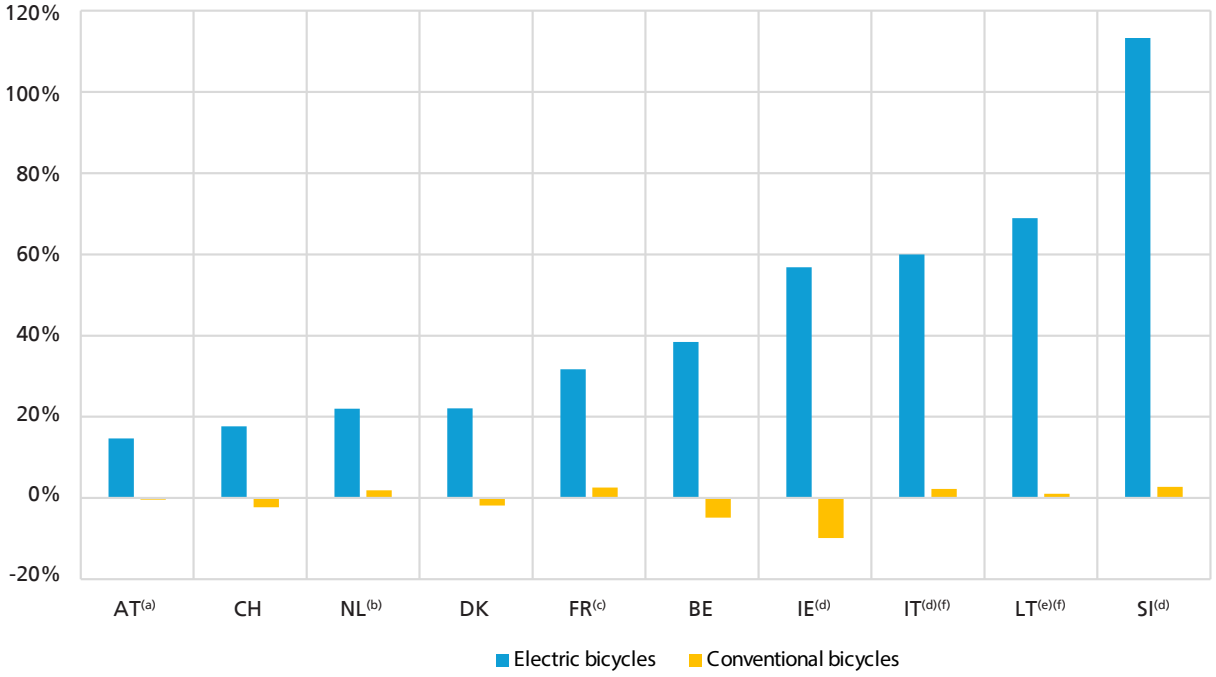


Figure 16. Average annual change in the number of reported electric bicycle user serious injuries compared to the average annual change in the number of conventional bicycles user serious injuries over the period 2014-2024.
(a)2018-2024, (b)2015-2023, (c)2020-2023, (d)2020-2024, (e)2017-2024, (f)all cyclist injuries

NETHERLANDS

RISE IN THE NUMBER OF HEAD INJURIES AMONG ELECTRIC BICYCLE USERS

In the Netherlands, in 2024, two-thirds of all visits to (a sample of) hospital emergency departments after a road collision involved a cyclist (74,300). At least one fifth of these cyclists was riding an electric bicycle at the time of the collision (14,100). Analysis of the data shows that riders of electric bicycles had a higher chance of suffering an injury (MAIS2+) or being admitted to hospital, than riders of conventional bicycles. Riders of electric bicycles were also more likely to suffer head injuries than riders of non-electric bicycles. The number of head injuries suffered by those riding electric bicycles rose by 86% between 2020 and 2024.[34]

In the Netherlands, between 2020 and 2024, for those aged 12-17 years old, electric bicycles were responsible for around a quarter of all visits to an emergency department with injuries following a bicycle collision (for other age groups it varies from 5% to 20%). The number of young electric bicycle riders aged 12-17 visiting the emergency department with a head injury or minor head injury increased by 522% and 415% respectively between 2020 and 2024. The data for young riders of conventional bicycles remain unchanged.[35]

One of the contributing factors to these data could be the rise in the popularity of fatbikes among young people in the Netherlands. Fatbikes are electric bicycles with fat tyres and a large saddle. Fatbikes are not illegal per se, but speed boosting kits are very popular for these bicycles and trading standards authorities are identifying large numbers of illegally modified fatbikes being imported – fatbikes that look like legal electric bicycles but are in fact mopeds.[36] It was estimated that more than half of all those suffering an injury from a fatbike collision in 2024 were between the age of 12 and 17 years old.[37]

The previous Dutch government had drawn up plans to introduce mandatory helmet wearing for everyone under the age of 18 riding an electric bicycle (including passengers). It is uncertain whether the new Dutch government will continue with these plans.

[34] VeiligheidNL (2025), Ongevallen met (niet-)elektrische fietsen: actuele inzichten en trends (Collisions with (non)electric bicycles: current insights and trends. In Dutch.), https://tinyurl.com/37n87atj
[35] Ibid.
[36] Ministry of Infrastructure and Water management (2024), Press release: ILT seizes 16,500 fatbikes (In Dutch: ILT legt beslag op ruim 16.500 fatbikes), https://tinyurl.com/y6hn5v5c
[37] Veiligheid NL (2024), Ongevallen met fatbikes. Spoedeisende Hulp data (2023-2024) (In Dutch. Collisions with fatbikes. Data from hospital emergency departments 2023-2024), https://tinyurl.com/3x5r8uz3

2.4 SERIOUS INJURIES OF CYCLISTS BY AGE GROUP

29% of all seriously injured cyclists are aged 65 or over (Fig. 17) in the EU21.[38]

People in the 50-64 age group account for 26% of all seriously injured cyclists and people in the 30-49 age group account for 22% of all seriously injured cyclists. These proportions differ from the distribution of cyclist deaths, where those in the 65 or over age group represented 52% of all cyclist deaths, which is considerably higher. Figure 17 shows the proportion of recorded seriously injured cyclists by age group by country based on national definitions of serious injuries. The figure should be interpreted with caution as levels of reporting as well as national definitions of serious injuries differ between countries.

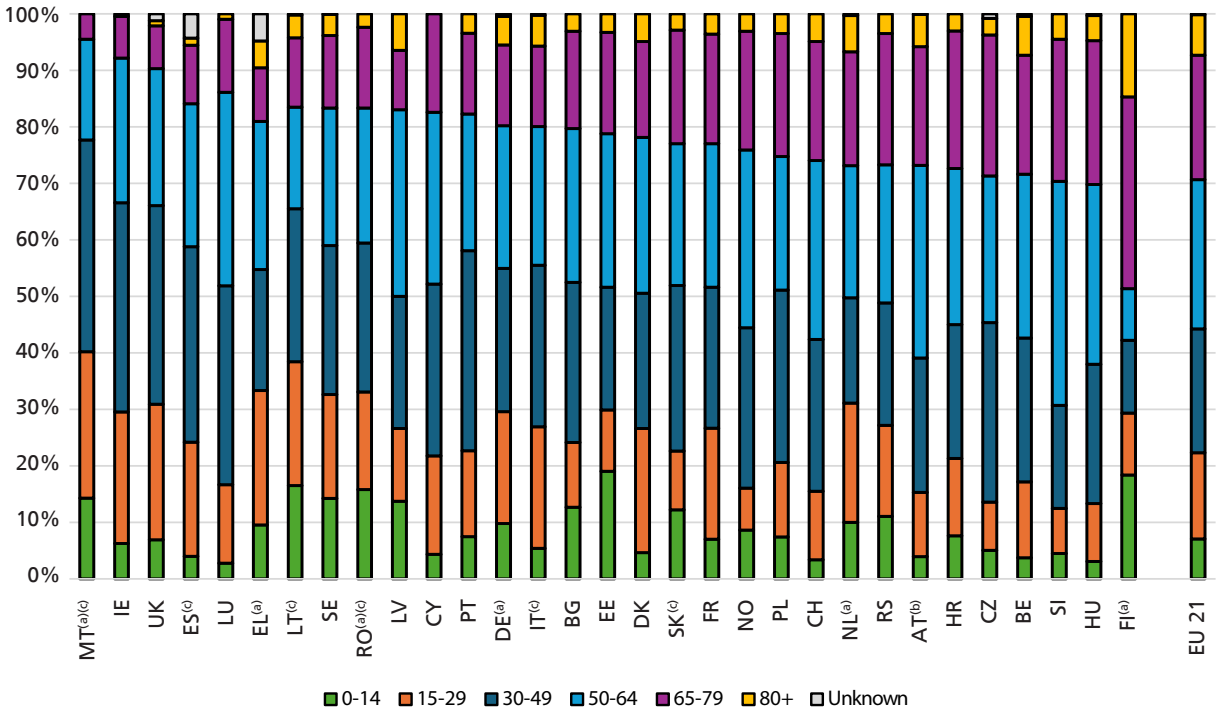


Figure 17. Proportion (%) of cyclist seriously injured by age group. Average of the years 2022-2024 (or last three years available). EU21 average covers the years 2021-2023 (average).
[a)]2021-2023, [b)]Before 2023, e-scooters were recorded as electric bicycles, [c)]all cyclist injuries

[38] EU21: EU27 excluding ES, IT, LT, MT, RO and SK.

2.5 SERIOUS INJURIES OF CYCLISTS BY GENDER

42,136 female and 70,694 male cyclists were reported seriously injured over the period 2021-2023 in the EU21,[39] representing 37% and 63% of all serious injuries among cyclists respectively (Fig. 18).

The proportion of male cyclists reported seriously injured (63%) is significantly lower than the proportion of male cyclist deaths (80%).

A likely explanation is the differing nature of the underlying crash types. Most injured cyclists are involved in single-bicycle incidents, such as falls, whereas most deaths result from collisions between bicycles and motor vehicles. Men are far more frequently involved in the latter type of crash, while falls occur at similar rates among males and females.[40]

The proportion of male cyclists seriously injured varies considerably among countries, from 56% in Denmark and the Netherlands to 89% in Portugal. As for cyclist deaths, it can be noted that in countries where cycling is more popular, like the Netherlands and Denmark, the proportion of female serious injuries is higher compared to countries where people cycle less.

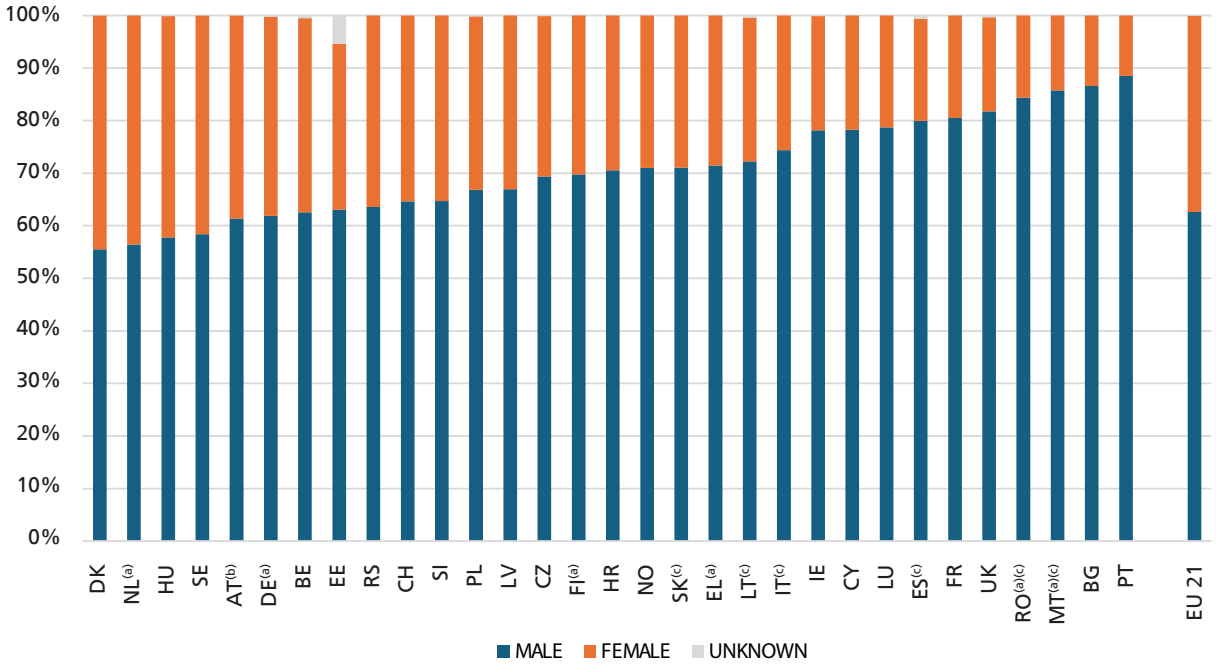


Figure 18. Proportion (%) of cyclists seriously injured by gender. Average years 2022-2024 (or last three years available). EU21 average covers the years 2021-2023 (average)
(a)2021-2023, (b)AT – Before 2023, e-scooters were recorded as electric bicycles, (c)all cyclist injuries

[39] EU21: EU 27 minus ES, IT, LT, MT, RO, SK.
[40] SWOV (2012), Road Safety Monitor 2012, Section 4.3, https://tinyurl.com/b7sjuzen

2.5.1 Gender differences in cyclist serious injuries: electric bicycle vs conventional bicycle

When comparing electric bicycle user serious injuries with conventional bicycle user serious injuries it can be noted that there is not a large difference in the proportion of male cyclists among those seriously injured.

For electric bicycle users, the proportion of male cyclists among all cyclists seriously injured varies from between 35% in Luxembourg to 83% in Lithuania (Fig. 19). In Luxembourg, the Netherlands and Denmark, the proportion of female electric bicycle users seriously injured is higher than the proportion of male electric bicycle users seriously injured.

For conventional bicycle users, the proportion of male cyclists among all cyclists seriously injured varies from between 58% in the Netherlands and Denmark to 87% in Luxembourg.

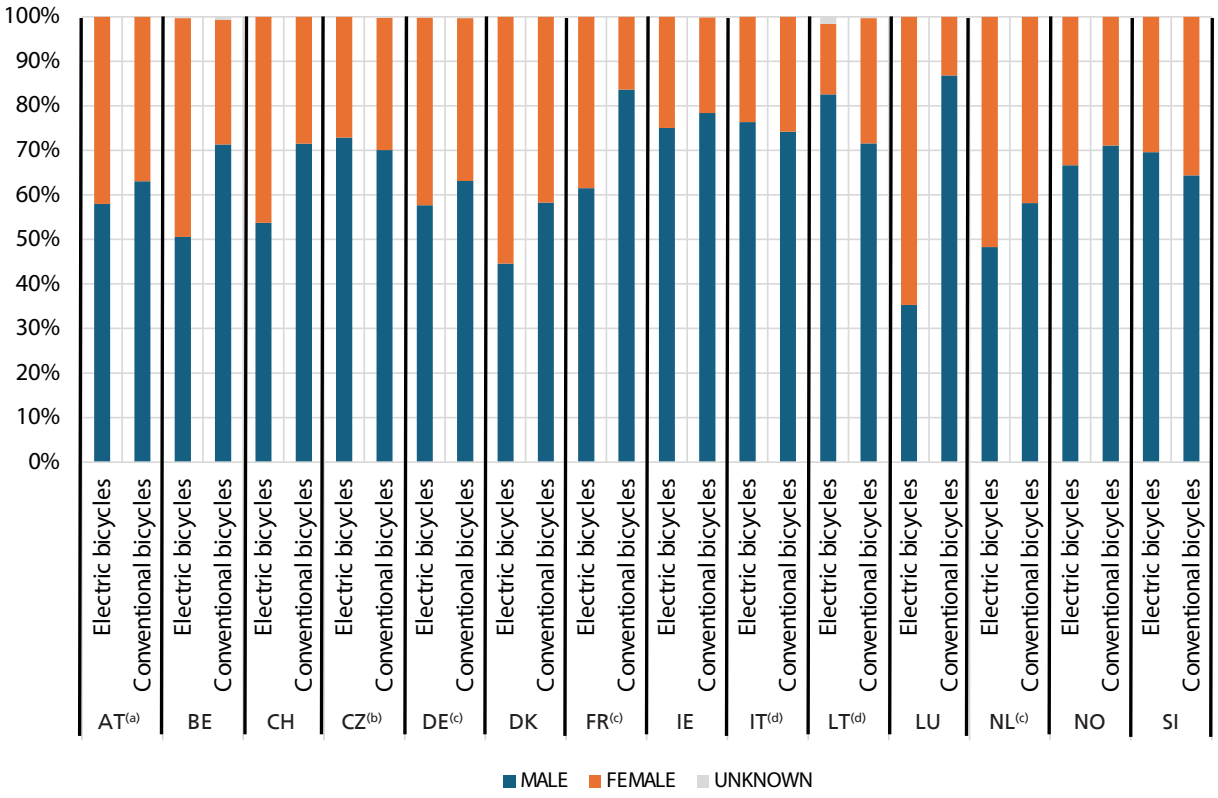


Figure 19. Proportion (%) of electric bicycle user seriously injured and conventional bicycle users seriously injured by gender. Average years 2022-2024 (or last three years available)

(a)AT – Before 2023, e-scooters were recorded as electric bicycles, (b)2023-2024, (c)2021-2023, (d)all cyclist injuries.

BELGIUM

CYCLISTS REPRESENT ALMOST HALF (49%) OF ALL THOSE SERIOUSLY INJURED IN TRAFFIC IN 2023

In 2023, 1,637 cyclists were seriously injured (MAIS3+) in Belgium according to hospital data. Cyclists represented almost half (49%) of all those seriously injured in traffic in 2023.

The number of seriously injured (MAIS3+) cyclists in Belgium has increased by 25% since 2016. By comparison, the number of car occupants seriously injured decreased by 42% over the same time period, although this is the only road user group that experienced a consistent decline.

Cyclists represent the largest proportion of those seriously injured in 2023 for nearly all age groups. 66% of all seriously injured people aged 65+ were cyclists and 45% of all seriously injured people aged 0-14 years. Serious injuries among cyclists in Belgium occur most often in single bicycle crashes.[41]

RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Consider how to improve the recording of serious injuries to vulnerable road users and tackle underreporting.
- As a matter of priority, analyse data on single bicycle collisions.

RECOMMENDATIONS TO THE EU

- Treat road injuries and deaths as a public health problem as well as a mobility issue.
- Include the number of seriously injured in the impact assessment of countermeasures.

[41] VIAS (2025), Gehospitaliseerde verkeersgewonden in 2023 (In Dutch and French: Hospitalised seriously injured road traffic victims 2023), https://tinyurl.com/y7bewja5

PART

03

Countermeasures

Cycling is becoming more popular, and governments increasingly encourage active travel instead of car use for environmental and health reasons. However, cyclists remain vulnerable road users and require protection through high-quality infrastructure, enforcement against unsafe behaviour, high quality safety technologies in motorised vehicles, bicycles built to high safety standards and encouragement to wear helmets. They should also be one of the top priorities in road safety planning with targets set to improve their safety.

3.1 STRATEGIC PLANNING

Strategic planning for cyclist safety occurs at both EU and national levels.

3.1.1 National cycling strategies and targets

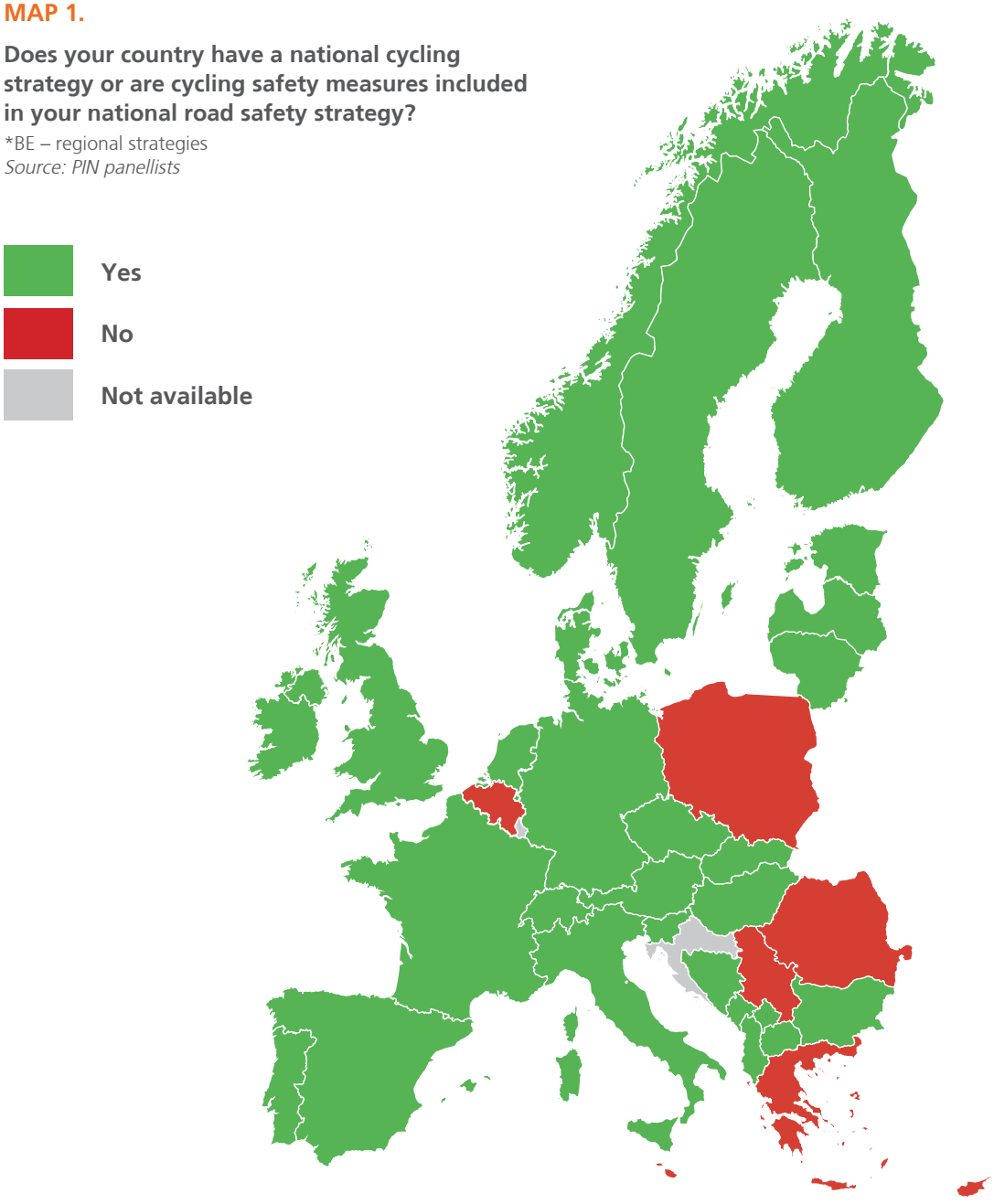
22 PIN countries reported that they have a national cycling strategy or include cyclist safety measures in their national road safety strategies (Map 1).

MAP 1.

Does your country have a national cycling strategy or are cycling safety measures included in your national road safety strategy?

*BE – regional strategies

Source: PIN panellists



Effective strategic planning for cyclist safety should involve the following elements:

- setting targets (e.g. road safety targets, active travel targets);
- setting priority areas;
- establishing a proactive approach;
- involving all relevant stakeholders in the preparation and execution of the plans;
- setting clear responsibilities and deadlines for delivery;
- dedicating an appropriate budget.

The level of detail and ambition in national cycling strategies, whether stand-alone strategies or actions incorporated into national road safety plans, differs between countries. While some strategies contain concrete actions, identify responsible stakeholders and set ambitious road safety and active travel targets, others contain fewer specific measures.

Setting road safety targets for relevant Key Performance Indicators (KPIs), coupled with mechanisms for tracking progress, can focus attention and improve accountability. The EU has committed to reducing road deaths and serious injuries by 50% by 2030 but while there is one KPI relating to cycling safety – helmet wearing rates - there are no specific targets relating to cycling safety at the EU level.

Nationally, 4 PIN countries (HU, IT, NO, SE) report that they have road safety targets relating specifically to cyclist safety. In Hungary, a target exists to reduce the number of cyclist deaths by 50% by 2030 and to zero by 2050. Meanwhile, Italy has a target to reduce cyclist deaths by 45% by 2030 (compared to 2019). In Sweden, there is a target to specifically reduce the number of cyclists seriously injured in single-vehicle collisions by 25% by 2030 compared to the 2017–2019 average. In Norway, the target is to lower the average risk of a cyclist being killed by 25% compared to 2018 and 2019 between 2022 and 2025 (deaths per km cycled).

9 PIN countries reported that they had targets to increase levels of cycling in their national strategies. In Austria and Estonia the target is to have 13% of all trips done by bicycle. In Lithuania and Slovakia it is 10% of all trips. Hungary aims to have 35% of the population using their bicycles several times a week and in Switzerland the target is to have 4,735 million person-km travelled by bicycle. Sweden had a target to increase the share of walking, cycling and use of public transport to 25% by 2025. In 2023 it was reported that the target had been achieved[42] (Table 3).

Targets to increase levels of cycling should always be accompanied by safety objectives.

Table 3. Countries with a target to increase cycling in their national cycling strategies

Country	Target
AT	13% of all trips done by bicycle (national target)
CH	A target of 4,735 million person-km travelled by non-motorised transport (includes walking and cycling) by 2030
DE	By 2030 double the km cycled compared to 2017 by increasing the number of bicycle rides from 120 to 180 per person per year and by increasing the average distance of bicycle rides from 3.7 km to 6 km; from 112 million km per day in 2017 to 224 million km per day in 2030
EE	13% of all trips done by bicycle (2021 baseline is 5%)
FI	30% increase in the amount of travel by walking and cycling by 2030
FR	By 2030, 12% of all daily trips done by bicycle (2018 baseline is 3%)
HU	By 2030, 35% of the population will use a bicycle several times per week as their main mode of transport
LT	By 2035, cycling should account for 10% of all trips
PT	Modal share of cycling in the national territory of 7.5% by 2030
SK	To increase the share of cycling in the total distance travelled in regional capitals to 10% by 2035

Source: PIN panellists

[42] Swedish Environmental Protection Agency (2025), Årlig uppföljning av Sveriges nationella miljömål 2025 (in Swedish, Annual follow-up of Sweden's national environmental objectives 2025), https://tinyurl.com/nhpruxdz

3.1.2 EU Declaration on cycling

The EU Declaration on cycling was signed in 2024.[43] The aim of the declaration was to "unleash the full potential of cycling in the EU". The declaration included a number of commitments relating to improving cycling safety including a commitment to increase safe and coherent cycling infrastructure across Europe as well as a commitment to 'providing technical support, funding and financing to help develop and implement cycling strategies and cycling-related investments.' The first progress report on the implementation of the EU Declaration on cycling was published in 2025.[44]

3.1.3 Sustainable Urban Mobility Plans (SUMPs)

> *56% of cyclist deaths occur in urban areas. Cities therefore play an important role in improving the road safety of cyclists.*

Sustainable Urban Mobility Plans (SUMPs) have been promoted by the European Commission as an important strategic planning tool. They can be used to support and encourage cycling at the local level while at the same time improving cycling safety, for instance through improved cycling infrastructure and collecting safety performance indicators.

The EU requires larger towns and cities (so-called urban nodes on the TEN-T network) to commit to developing Sustainable Urban Mobility Plans – but more needs to be done to ensure local governments follow-up on these plans with real and lasting changes.[45]

FRANCE

MOBILITY PLANNING IN SMALL AND MEDIUM SIZED TOWNS

In France, small scale SUMP-type planning is being carried out in small and medium size towns through the *Plan de mobilité simplifié* (Simplified mobility plan).[46] This plan is an adaptable tool for organising mobility in medium-sized towns and rural areas that are not required to produce formal mobility plans. The aim of the *Plan de mobilité simplifié* (Simplified mobility plan) is to support local stakeholders looking to develop a simplified mobility plan, by outlining all the relevant steps from initial development to post-implementation assessment. It describes the general principles, development process and possible content of the plan. Actions that could be taken in a simplified mobility plan relating to cycling could include:

- Develop/implement a master plan for cycle routes/ an active mobility plan
- Develop bike-related services (repair workshops, events, etc.)
- Complete the cycle network based on greenways and tourist routes
- Make town centres more peaceful by creating pedestrian areas and meeting zones
- Redevelop urban crossings to secure active mode users.

For monitoring and assessment, indicators have an important role in a simplified mobility plan. Indicators in a simplified mobility plan relating to cycling and cycling safety could include:

- Number and type of collisions
- Collision severity
- Number of vulnerable road users killed or injured
- Location of areas where collisions with injury accumulate
- Length of cycle routes
- Counting bike flows on certain routes.

[43] European Declaration on Cycling (2024), https://tinyurl.com/mwkuzeee
[44] European Commission (2025), Report from the Commission to the Council and the European Parliament on Progress towards implementing the European Declaration on cycling, https://tinyurl.com/383mucr7
[45] Trans-European transport network (TEN-T): Council and Parliament strike a deal to ensure sustainable connectivity in Europe (2023), https://tinyurl.com/st27tw8x
[46] The French 'Plan de mobilité simplifié' https://tinyurl.com/49ffvr8a

3.1.4 Key Performance Indicators

> *Key Performance Indicators can give a more complete picture of the level of road safety than just numbers of road deaths and serious injuries and can help detect the emergence of problems at an earlier stage.*[47]

Furthermore, outcome targets can be set based on the data collected. The introduction of Key Performance Indicators is also an important way of identifying policy needs.

The EU's Road Safety Policy Framework 2021-2030 introduced, for the first time, a list of Key Performance Indicators (KPIs) which will be used to measure overall road safety performance. The KPIs were further detailed in the EU Strategic Action Plan on Road Safety.[48]

One of these KPIs relates to helmet wearing rates among cyclists - Percentage of riders of powered-two-wheelers and bicycles wearing helmets. Follow-up experimental indicators also consider cyclists, notably, 'Use of lights by cyclists in the dark' and more generally, 'Red-light negations by road users' (i.e. red light violations).

ETSC recommends an additional KPI to complement these, notably on infrastructure safety for vulnerable road users.

The 'Baseline' project, supported by the European Commission and coordinated by the VIAS Institute, was launched in 2020 to produce values for the EU Road Safety KPIs in the 18 Member States participating in the project. A set of methodological guidelines was produced for each of the eight EU KPIs. The 'Baseline' project ended in 2022 and in 2023 the 'Trendline' project was launched as a follow-up, now involving 29 European countries (including four observer countries).

According to Trendline data the highest prevalence of helmet use by cyclists is in Finland (70.3%). The lowest prevalence is in the Netherlands (5.0%), Croatia (12.3%) and Hungary (16.2%). In total, of the 17 countries that collected data, 6 have a helmet use rate of 45% or more. Trendline data also show that cyclists are more likely to wear helmets when riding electric bicycles and those aged 0 to 14 years wear a helmet significantly more than those aged 15 and over.[49] Wearing a helmet is mandatory for children under 15 years in several countries.

All eligible PIN countries are collecting data on the percentage of cyclists wearing a protective helmet. Some countries also have additional KPIs relating to cycling. In Finland, for example, data are gathered on the number of cyclists that use lights on their bicycles. These data are also collected in France, where data are also collected on the use of handheld devices by cyclists. For more information on helmet wearing see Section 3.4.2 below.

SWEDEN

SWEDISH ROAD SAFETY POLICY IS BASED ON VISION ZERO WITH INTERIM TARGETS SET TO TRACK PROGRESS.

Road safety work in Sweden is carried out through a system of management by objectives with interim targets set for 2030.

There are currently five indicators/targets that relate to cycling in Sweden and the targets are followed up each year (see 2024 values in brackets below):

- The number of seriously injured cyclists in single bicycle crashes - 25% reduction by 2030 (2024: 2,500).
- The share of bicycle crossings of good or fair safety classifications (national road network) – target of 80% by 2030 (2024: 63%)
- The share of bicycle crossings of good or fair safety classifications (municipal road network) – target of 75% by 2030 (2024: 55%)
- The share of street length with 30 and 40 km/h speed limits of all streets with 30, 40 or 50 km/h speed limits – target of 99% by 2030 (2024: 72%)
- The share of cyclists observed wearing a helmet – target of 80% by 2030 (2021: 46%).[50]

[47] ETSC (2018), Briefing: 5th EU Road Safety Action Programme 2020-2030, https://tinyurl.com/2z58hda3
[48] ETSC (2019), Briefing EU Strategic Action Plan on Road Safety, https://tinyurl.com/46x5cd47
[49] Trendline (2025), Trendline results, https://tinyurl.com/577bnuvc
[50] https://trafikverket.diva-portal.org/smash/get/diva2:1953101/FULLTEXT02.pdf (in Swedish)

3.1.5 EU Funding for improving cycling safety

The European Commission says that, in the current programming period 2021-2027, €4.5 billion have been allocated to cycling investments of which €3.2 billion will be provided by the EU and €1.3 billion from national resources.

This should support more than 12,000 km of new or improved cycle paths.[51]

In a European Court of Auditors report published in 2024 three instruments were identified as financing national and regional transport infrastructure projects contributing to road safety: the European Regional Development Fund (ERDF), the Connecting Europe Facility (CEF) and the Cohesion Fund (CF), where management is shared between the Commission and the Member States. However, the report noted that EU funding currently only supports the construction or upgrading of road infrastructure. Project promoters are not obliged to maintain roads to ensure a specific level of road safety. During their performance review, the ECA conducted site visits and identified shortcomings where EU budget funds had been spent on new infrastructure but were not followed up with proper maintenance, as well as ensuring the continuity of the itineraries, protecting dangerous crossings along the route and implementing proper signage. The quality of implementation and maintenance of EU co-funded infrastructure can have a significant impact on safety.[52]

EU research funding can also play a crucial role in improving road safety. Horizon Europe (HE) is the EU's primary funding programme for research. The EU has a global reputation as a centre of excellence and innovation in research and development in road safety. Road safety research should continue to benefit from European funds under the next research framework programme.

The next EU budget (2028-2034) is currently being negotiated.

Funding needs to be identified within the new budget to support investment in road safety measures.

In particular, these funds should support the implementation of measures outlined in the EU's Road Safety Strategy 2020-2030, focusing on those with the highest potential to save lives. ETSC welcomes the inclusion of road safety indicators in the Budget Performance Regulation proposal, including the cycling infrastructure indicators (length of new or upgraded cycling lanes; additional capacity of new or upgraded bicycle parking spots).[53]

Financing road safety supports the principles that underpin the EU budget.

[51] European Commission (2025), Report from the Commission to the Council and the European Parliament on Progress towards implementing the European Declaration on cycling, https://tinyurl.com/383mucr7
[52] ECA (2024), Special report 04/2024: Reaching EU road safety objectives – Time to move up a gear, https://tinyurl.com/346ehd9f
[53] European Commission (2025), Annex to the proposal for a regulation of the European Council and of the Council establishing a budget expenditure tracking and performance framework and other horizontal rules for the Union programmes and activities, https://tinyurl.com/azfx2hy9

In 2024, the European Cyclists Federation (ECF) published a guide, 'Using EU funds to promote cycling: Lessons learned from good practice examples'.[54] The guide includes descriptions of 14 cycling projects that have been selected to demonstrate how EU funds can contribute to high-quality cycling investments.

The guide includes a number of recommendations for organisation looking to invest EU funds in cycling.

TO NATIONAL, REGIONAL AND LOCAL STAKEHOLDERS:

- Develop a plan for the target cycle route network.
- Integrate cycling facilities into other infrastructure projects.
- Choose the appropriate governance level to implement specific cycling projects.

TO NATIONAL AUTHORITIES SPECIFICALLY:

- Ensure that the legal framework facilitates the implementation of cycling projects.
- Facilitate cooperation among national stakeholders (e.g. national road, railway, waterway, or forest administrations) in developing regional and local cycle networks.

[54] ECF (2024), Using EU funds to promote cycling: Lessons learned from good practice examples, https://tinyurl.com/ybvdjtk3

RECOMMENDATIONS TO CITIES AND TOWNS

- Adopt and implement a local road safety strategy based on the Safe System approach and set road safety targets, define measures, develop relevant KPIs and set targets for these KPIs.
- Include road safety as an essential component in developing and implementing Sustainable Urban Mobility Plans (SUMPs). Apply the Safe System approach and ensure SUMPs integrate measures to improve cycling and targets to reduce deaths and serious injuries.

RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Design and implement cycling safety strategies, which include targets and infrastructure measures to improve cycling safety. Ensure that strategies are closely linked with road safety priorities and that increasing walking and cycling will not lead to more deaths and seriously injured.
- Support local authorities in the work on improving cyclist safety by providing expertise and budget.
- Collect and report to the European Commission data to deliver the Key Performance Indicators included in the new EU Road Safety Policy Framework 2021-2030.
- Together with the Commission, develop KPIs on cyclist infrastructure safety.

RECOMMENDATIONS TO EU INSTITUTIONS

- Adopt specific targets to reduce deaths of vulnerable road users.
- Prepare, publish and implement an EU safe active mobility strategy which sets road safety measures and targets to increase the amount of distance safely travelled by cycling.
- Earmark funds for basic road safety research in the next EU research budget line.

Regarding Key Performance indicators:

- Introduce a KPI on the proportion of roads within the road network with speed limits set at safe and credible levels.
- Together with Member States, develop KPIs on cycling infrastructure safety.
- Collect exposure data for all road users (pedestrians, cyclists, PTWs, cars, vans, HGVs) by road types.
- Together with Member States, develop KPIs on pedestrian, cyclist and powered two wheeler (PTW) infrastructure safety.

3.2 INFRASTRUCTURE AND SPEED

3.2.1 Infrastructure

The design and quality of the infrastructure used by cyclists can have an impact on the likelihood of a cycling collision. Safe cycling infrastructure ideally includes separated cycling paths and conflict-free traffic signals as well as cycle paths that meet design guidelines in terms of their width, curve radius, the absence of obstacles and quality amongst other aspects.[55]

Collisions between cyclists and motorised vehicles can have severe consequences. Roads for motor vehicles with speeds above 30 km/h require separate infrastructure for cyclists, pedestrians and personal mobility devices.

> *"The separation of bicycles from motor vehicles on the roads with the highest speeds and those with the highest volumes should be a priority for national governments.*

Over 40% of cyclist deaths occur on rural roads.[56] According to the Safe System, vulnerable road users and motorised vehicles should not mix in traffic travelling above 30 km/h. Rural roads with a speed limit of 80km/h where cyclists and pedestrians must share the road with motorised traffic, therefore, are not structurally 'Safe System' roads.

Research carried out in Germany to determine when cyclists should be rerouted from cycling along rural roads to riding instead on a separated cycle path suggested setting a limit based on the frequency with which cyclists on roads were involved in critical overtaking manoeuvres.[57] Other elements to consider include volume and speed of motor vehicle traffic, the percentage of heavy truck traffic, the openness of the road as well as the volume of bicycle traffic, and its share of vulnerable cyclists.

CycleRAP is a methodology developed to evaluate the safety of cycling infrastructure.

CycleRAP scans the features of a road, street or cycling path to evaluate the risk of collision for cyclists and light mobility users. It can be used to identify high-risk sites and provides recommendations to improve infrastructure safety and reduce crashes.

The CycleRAP model evaluates four types of bicycle crash risk: collisions with vehicles, collisions between cyclists, collisions with pedestrians and single bicycle crashes. It looks at what initiates a crash and what are the conditions that could impact the outcome of the crash and what could determine the severity of the crash.

Using more than 50 determinants, the model results in a score and risk level for a given segment of infrastructure. Also, as the determinants are changed in the model (i.e. introducing lower motor vehicle speeds, widening cycle lanes, etc.) users and street designers are able to check how the score and risk levels for the infrastructure change.

In 2024 Fundación Mapfre, PTV Group, Union Cycliste International (UCI) and iRAP, among other partners, presented the first CycleRAP pilot study of cycling infrastructure assessments carried out in Barcelona and Madrid in Spain, Bogotá in Colombia, Fayetteville in the USA and São Paulo in Brazil.

https://irap.org/cyclerap/

[55] SWOV (2020), Infrastructure for pedestrians and cyclists. SWOV fact sheet, http://tinyurl.com/39crtns9
[56] ETSC (2024), Reducing road deaths on rural roads, https://tinyurl.com/74buzy5h
[57] BAST (2020), Management of cycling on rural roads. http://tinyurl.com/bdebv4es

3.2.1.1 National cycling infrastructure and networks

Gathering data on national cycling infrastructure, the quality of that infrastructure and whether the infrastructure meets national regulations can all help with improving the safety of cycling. While 17 PIN countries reported that they collect data on cycling infrastructure in their countries, only 10 (CH, DK, EE, FI, HU, LV, LT, RS, SI, SK) reported that safety inspections and audits were carried out on the infrastructure (Table 4). A common reason for not being able to provide data on safety inspections was that cycling infrastructure was the responsibility of local authorities.

Table 4. PIN countries with data on cycling infrastructure and inspections of cycling infrastructure in their countries.

	Do you have data on cycling infrastructure in your country?	Are there safety inspections (periodic) or audits (for example, after serious collisions) of cycling infrastructure?
YES	AT, CY, CZ, DK, EE*, FI, FR, HR, HU, IT, LV, LT, NL, PL, SE, SI, SK	CH, DK, EE, FI, HU, LV, LT, RS, SI, SK

*EE - incomplete
Source: PIN panellists

15 PIN countries (CH, CY, CZ, FI, FR, HR, HU, IE, IT, LV, LT, NL, SE, SI, SK) reported that they have a national cycle network.

> *National cycle networks can promote more cycling and, if combined with quality standards and regulations, can lead to safer cycling connections both between towns and cities but also along leisure cycling routes.*

In the Slovak Republic for instance, the entire network of cycling infrastructure complies with the relevant regulations and standards concerning safety as this is a prerequisite for the approval of individual infrastructure projects.

Although there is currently no common agreement on cycling infrastructure criteria at the European level, the UNECE Group of Experts on cycling infrastructure module has developed a guide to help countries develop cycle networks effectively at different administrative levels.[58]

The Safe Cycling Routes Toolkit (SCRT), developed with the support of EU funds, is a modular interactive online decision-making support tool which guides users through the process of defining new cycling routes as well as improvements to existing ones, with respect to cycling safety.[59]

[58] UNECE (2024), Final report of the Group of Experts on Cycling Infrastructure Module, https://tinyurl.com/4ku46d8c
[59] Safe Cycling Routes Toolkit, https://sabrina-scrt.eu/scrt/

LITHUANIA

DEVELOPMENT AND PROMOTION OF CYCLING A PRIORITY OVER LAST 10 YEARS

Over the last 10 years, Lithuania has made the development and promotion of cycling a priority. The Transport Ministry has taken a leading role in ensuring that the popularity of cycling continues to grow.

In 2014, there was no reliable data on the total length or condition of cycling infrastructure in Lithuania and cycling infrastructure was developing haphazardly.

Since 2014, Lithuania has managed to conduct an inventory of existing cycling infrastructure and developed a long-term infrastructure development plan. It has also secured increased funding for cycling infrastructure. Lithuania adopted the National Cycling Strategy in 2024, and changes have been made to traffic rules to increase bicycle safety (for example the legal setting of 'bicycle street' with set requirements for traffic users in this type of street, the introduction of the minimum distance of 1.5 m for vehicles overtaking bicycles). Municipal administrations and NGOs were involved in the process.

The vision for 2025 was to ensure that cycling becomes an attractive way of travelling in cities and suburban areas, as an attractive alternative to the car. By 2028, Lithuania aims to have direct investments for the creation of priority cycling infrastructure, stronger involvement of the responsible institutions in the decision-making process and systematic data collection with open access.

3.2.1.2 EU Road Infrastructure Safety Management (RISM) Directive

The EU Road Infrastructure Safety Management (RISM) Directive[60] requires governments to carry out regular road safety audits, identify high-risk sites and prioritise safety when building new roads. The revised Directive, which came into force in 2019, has extended the scope of the original legislation to include all motorways, primary roads and roads outside urban areas that have received EU funding. Road design concepts such as self-explaining and self-enforcing roads, seek to reduce the number of collisions on the whole road network by preventing driving errors.

In addition, a new network-wide road safety assessment has been introduced and the requirements to protect vulnerable road users have been strengthened. Indeed, the revised Directive mandates, for the first time, to systematically take vulnerable road users (VRU), including cyclists, into account in all infrastructure safety management procedures on the roads covered by the Directive. The European Commission is to develop guidance on road design quality requirements for the protection of VRUs. This guidance is due to be published in 2026. Although not mandatory, EU Member States are encouraged to extend the road safety management principles to main urban roads.

3.2.1.3 Trans-European networks (TEN-T) and EuroVelo

EuroVelo, the European cycle route network, is a network of 17 long distance cycle routes connecting and uniting the whole European continent. They can be used for short commutes or for longer tourist journeys.[61] This entire network should be recognised as part of the TEN-T network and the Connecting Europe Facility (CEF) instrument should be accessible for supporting its development and expansion.[62] The European Commission should participate in the coordination of EuroVelo and provide financial and technical assistance for the coordination, know-how transfer and communication on the European level.

3.2.1.4 Intersections

Hospital data from the Netherlands indicate that safety problems that are related to cycling in rural areas are especially likely at intersections where cyclists meet motorised traffic and the cyclist needs to give way to motorised vehicles.

> *"Changing the design of intersections on rural roads, in particular the introduction of speed reduction measures such as roundabouts, can directly influence the behaviour of car drivers at an intersection and the interaction between them and cyclists.[63]*

[60] Directive (EU) 2019/1936 of the European Parliament and of the Council of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management, https://tinyurl.com/3a5u2s7b
[61] http://www.eurovelo.org
[62] ETSC (2012), Raising the Bar – Review of Cycling Safety Policies in the European Union, http://goo.gl/wUmdg3
[63] Duivenvoorden, K., (2021) Speed up to safe interactions. The effects of intersection design and road users' behaviour on the interaction between cyclists and car drivers, http://tinyurl.com/ym22k5vr

In built up areas, good visibility at intersections for all road users is important. An in-depth study in the Netherlands found that almost half of the studied collisions between cyclists and motor vehicles at intersections on 30 km/h roads were due to restricted visibility perhaps due to a parked car or a (too tall) garden hedge.[64]

Further research undertaken in the Netherlands on intersections with traffic lights (conflict-free intersections – where in theory traffic lights are programmed so that there should be no conflict between cyclists and motorised vehicles, unless someone ignores a red light) found that cyclists were three times less likely to come into conflict with a motor vehicle at these intersections in rural areas than in urban areas. That having been said, the conflicts in rural areas tended to have more severe outcomes due to the high speed of the traffic there. In urban areas, three quarters of the conflicts between cyclists and motor vehicles at 'conflict-free' intersections were due to the cyclist (most likely) ignoring a red traffic light. The research also found that HGVs were three times more likely to be involved in a collision with a cyclist crossing an intersection than a car. More often than not, the HGV was turning right at the time. Measures aimed at reducing red-light running, including enforcement and information campaigns, and giving more time to HGVs to clear the intersection, are some of the recommendations in the study for improving safety at these intersections.[65]

3.2.1.5 Single-bicycle crashes

> *Many more cyclists are injured in collisions not involving a motorised vehicle than in collisions with motorised vehicles.*[66]

These can be either single bicycle crashes or collisions between a cyclist and a pedestrian or another cyclist. These collisions can occur even if motor vehicle traffic and slow traffic are separated, on low-speed roads.

It is estimated that around half of all single bicycle crashes in the Netherlands are due to infrastructure imperfections such as poles placed to prevent motor vehicles from using cycle paths or slippery and/or uneven road surfaces.[67] SWOV, the Dutch National Scientific Institute for Road Safety Research, has estimated that if all cycling infrastructure in the Netherlands were to be made safe by 2030, 50 road deaths and 2000 serious injuries could be avoided.[68]

In Ireland, of the 245 reported seriously injured cyclists in police data involved in single bicycle collisions between 2018 and 2022, 216 (88%) were riding forward at the time of the collision. Of these cyclists seriously injured in a single bicycle crash while in motion, 14% encountered a problem with the road surface - oil, debris, potholes, wet surface, etc. Furthermore, 10% of the collisions were due to colliding with or (dis)mounting the kerb or footpath.[69] According to the injury data registered at the Oslo Emergency Department, cyclist injuries sustained after a single bicycle crash dominate the data, and collisions with cars make up only a very small proportion. Bicycle falls due to kerbs, tram rails, etc. are the most common scenarios.[70] Studies in Sweden looking at data from between 2014 and 2019 also show that almost eight out of ten seriously injured cyclists were injured in a single collision and around 30% of seriously injured cyclists reported that the collision was caused by some form of slippery road, with snow/ice (13%) and loose gravel (11%) accounting for the majority of cases.[71] In Switzerland, a study of electric bicycle riders found that 17% of them had experienced a single bicycle crash. Skidding, falling while crossing a kerbstone/pavement/uneven surface, getting stuck in or skidding on tram/railway track and evasive actions were the most frequent crash scenarios encountered by the electric bicycle riders in the study.[72] In a study of 120 cycling collisions in

[64] SWOV (2026), Slecht zicht op kruispunten bij fiets-auto-ongevallen op 30 km/uur-wegen (in Dutch, Poor visibility at intersections in case of bicycle-car accidents on 30 km/h roads), https://tinyurl.com/mruskhxd
[65] SWOV (2025), Conflicts with cyclists at signalised intersections in rural areas; Safety at signalised intersections with varying design features (In Dutch with English summary), https://tinyurl.com/mr32atmt
[66] SWOV (2023), Cyclists. SWOV fact sheet. https://tinyurl.com/5bm333db
[67] Schepers, P., Klein Wolt, K., (2012) Single-Bicycle Crash Types and Characteristics https://tinyurl.com/yvmuuw2d
[68] SWOV (2022), A 50% reduction in road casualties by 2030? Calculating the effect of additional measures, https://tinyurl.com/mrxtx5f8
[69] RSA (2023), Cyclist spotlight report: fatalities and serious injuries 2018-2022, https://tinyurl.com/576tbtjt
[70] TOI (2021), Traffic safety for cyclists and pedestrians – status and challenges (In Norwegian only), https://tinyurl.com/23nbedxh
[71] VTI (2022), Involvement of unprotected road users in accidents and their injury outcomes (In Swedish: Oskyddade trafikanters inblandning i olyckor och deras skadeutfall. English summary). https://tinyurl.com/2szbyjjc
[72] Hertach, P., Uhr, A., Niemann, S., Cavegn, M. (2018), Characteristics of single-vehicle crashes with e-bikes in Switzerland, https://tinyurl.com/4uu7jn2d

Belgium a quarter of the collisions were single bicycle crashes. The two most common scenarios leading to these single bicycle crashes was the cyclist colliding or falling due to an obstacle or the cyclist losing control of their vehicle. Infrastructure played a significant role in these single-bicycle crashes, but health issues also proved to be a notable problem.[73] Health problems were also identified in 63% of the cyclists who died in a single bicycle crash in France. In total in France in 2024, single bicycle crashes were responsible for 37% of cyclist deaths, 63% of cyclists seriously injured and 72% of cyclists slightly and moderately injured.[74] In Austria, a study of single bicycle crashes between 2022 and 2024, shows that the quality and condition of the surface cycled on was a factor in around a quarter of all single bicycle crashes. Kerbstones and rail/tram tracks also play significant roles in the single bicycle crashes. Interestingly, the study also found that the majority of single bicycle crashes happened away from cycling infrastructure.[75]

The quality of the infrastructure available to cyclists can play an important role in preventing single bicycle crashes. Cycling infrastructure should be free of obstacles, be clearly marked, be sufficiently wide and the surface should be clean and free of cracks. The verges of cycle paths should be forgiving.[76]

3.2.2 Vehicle speed

Driven vehicle speeds affect the injury severity sustained in a crash at a given location.[77]

> *According to the Safe System approach, vulnerable road users should not mix with motor vehicle traffic where motor vehicle speeds exceed 30 km/h.*[78]

In recent years a handful of countries, and many more cities, have introduced a default 30 km/h speed limit on some or all of their urban roads. The driving force for the reduction in speed limits has often been to reduce road deaths and serious injuries, particularly among vulnerable road users. Studies show that city-wide 30 km/h speed limit schemes reduce road deaths on average by 37% and serious injuries by 38%.[79] Another study found that reducing the speed limit from 50 km/h to 30 km/h in built-up areas could bring a reduction in road deaths and serious injuries of 26% although only if coupled with other measures such as infrastructure changes and enforcement.[80]

Bicycle-prioritised streets, where motor vehicles are considered 'guests' can be found in countries like the Netherlands, Germany and Belgium. These streets, coupled with low speed limits (30 km/h), have also been shown to improve traffic safety.[81]

The ridden speed of bicycles and speed differences can impact road safety, particularly where different types of bicycle and/or pedestrians must share space. Studies show that conventional bicycle and electric bicycle speeds do not differ considerably. However, the difference between the speed of conventional bicycles and speed pedelecs (capable of going 45km/h) is large and may be making the sharing of bicycle paths for these two vehicles, unsafe.[82] As a consequence, in the Netherlands, speed pedelecs, just like mopeds, are not allowed on urban bicycle paths; they have to mix with motor vehicles on roads with a speed limit up to 50 km/h.

[73] VIAS (2024), In-depth investigation into cycling collisions (In Dutch: Diepteonderzoek fietsongevallen. English summary), https://tinyurl.com/3nx79s66
[74] ONISR (2024) Road safety in France. Accident rate final report 2024 (In French : La sécurité routière en France. Bilan de l'accidentalité de l'année 2024) https://tinyurl.com/3ccufr37
[75] Zuser, V. (2025), Randsteine und andere Gefahren, ZVR 2025/214 (in German), https://tinyurl.com/4j2v4ja6
[76] SWOV (2020), Factsheet: Infrastructure for pedestrians and cyclists (In Dutch), https://tinyurl.com/bdh8x534
[77] Bucsuházy et al., Czech In-Depth Accident Study. (2021), Technical report. Transport Research Centre. Czechia
[78] European Commission (2022), Road Safety Thematic Report – Safe System Approach, https://tinyurl.com/2f7t26ch
[79] Yannis, G., Michelaraki, E., (2025), Effectiveness of 30 km/h speed limit – A literature review, https://tinyurl.com/ukb66puw
[80] TM Leuven (2024), Five Measures for Safer Cycling (In Dutch only: Vijf maatregelen voor veilig fietsverkeer), https://tinyurl.com/3hueazd2
[81] TØI (2024), Bicycle streets and raised intersections - a literature review, https://tinyurl.com/38t3my9e
[82] SWOV (2021), Speed characteristics of speed pedelecs, pedelecs and conventional bicycles in naturalistic urban and rural traffic conditions, https://tinyurl.com/e8779kvf

RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Develop, and encourage speed limit-setting authorities to apply, national speed limit guidelines based on the Safe System approach. When developing guidelines, take into account factors such as road design, roadside (e.g. land use and topography), traffic composition and flow, presence of vulnerable road users and vehicle quality.
- Develop, and encourage responsible authorities to apply, safe infrastructure design guidelines, such as guidelines for traffic calming measures, intersections, or cycling infrastructure design. Renew the guidelines regularly based on the latest research and innovation.
- Establish clear road hierarchies, which better match the use of each road to the functions that the road serves in terms of living space, access and through movement, speed limit, layout and design based on the principles of the Safe System approach.
- Encourage local authorities to reduce the speed of motorised vehicles to 30 km/h where vulnerable road users and motorised traffic are not physically separated.
- Where there may be cyclists present or the potential to attract them and taking into consideration the optimal cycling route, then invest in separate cycle facilities, on new or renewed roads always, and in retrofit elsewhere.
- Improve the safety of intersections and crossings and ensure good mutual visibility for all road users at all intersections.
- Give priority in road maintenance to the quality of surfaces on cycle paths and the parts of carriageways most used by crossing cyclists.
- Avoid slippery paints, thermoplastics and metal covers within the main wheel track of cycle paths; if unavoidable, use high-friction materials and mark the risk.
- Implement infrastructure separated from motorised traffic to make cycling safer, in particular where the speed or the traffic flow of the latter is too high.
- Encourage cities to undertake road safety audits of urban infrastructure;
- Enable support for cities in restricting HGV circulation in urban areas at certain peak times when there are high numbers of cyclists and other vulnerable road users, and develop recommended routes for HGVs;
- Plan for land-use with older people's mobility needs in mind and involve them in the process.

RECOMMENDATIONS TO THE EU

- Adopt a European Commission Recommendation to apply safe speed limits in line with the Safe System approach for the different road types such as 30 km/h on urban roads in residential areas and other areas used by many pedestrians and cyclists, 70 km/h on undivided rural roads and a top speed of 120km/h or less on motorways and encourage Member States to implement it.
- Create an EU fund to support priority measures such as for cities to introduce 30 km/h zones supported by infrastructure measures and traffic law enforcement (particularly in residential areas and where there are a high number of VRUs) and to invest in speed management on high-risk roads which carry large flows of traffic.
- Include the EuroVelo cycle network as part of the TEN-T and earmark Connecting Europe Facility (CEF) funds for its continued development.
- Earmark dedicated EU funds for safe infrastructure for cycling and walking and direct their investment based on risk analysis.
- Set up, as planned in the EU Road Safety Strategy, an expert group to develop a framework for road classification that better matches speed limit to road design and layout in line with the Safe System approach.
- Set up, as planned in the EU Road Safety Strategy, a forum of European road safety auditors to facilitate exchange of experience on Safe System methodologies.
- Set up a mechanism to track and trace EU funds invested in road safety and evaluate their impact.
- Adopt as a matter of urgency the new EU Quality Requirements on VRU Infrastructure Safety, Forgiving and Self-explaining roads as required under the RISM Directive.

3.3 VEHICLE SAFETY

Motor vehicle safety technology has proven to be effective both in preventing collisions and in saving lives when collisions happen. Safe design standards for bicycles and in particular electric bicycles also ensure safety.

3.3.1 Bicycle vehicle design

3.3.1.1 Bicycle standards

> *Bicycles sold in the European Union must be built to certain standards to ensure safety.*

These standards specify safety requirements relating to, amongst other things, their physical, mechanical and chemical properties. Mandatory safety equipment on bicycles sold in the EU includes two independent brakes, a bell and reflectors at the front, back and sides. All EU countries also require lights, front and back.

Conventional bicycles sold in the EU must be built to the EN ISO 4210 Standard while electric bicycles with a maximum continuous rated power of 250w and where the motor cuts out at 25km/h must conform to the Machinery Regulation, to which compliance is assumed if the bike conforms to the EN 15194:2017 Standard.

Power Assisted bicycles that have higher power and speed, up to a maximum of 4kW and 45 km/h fall under the scope of the 2 and 3 wheel vehicle type approval EU Regulation 168/2013 and are considered in the moped category (Cat. L1eB - speed pedelecs). These vehicles must be type-approved according to criteria laid down in the Regulation before being sold in the EU.

Depending on their power rating, cargo bikes either do or do not fall under the scope of EU Regulation 168/2013. Irrespective of Regulation 168/2013, cargo bikes should be built to the EN17860 Standard which also covers performance and testing. Cargo bikes are often used to carry young children. Tests carried out in Germany show the importance of children in cargo bikes wearing seatbelts. In tests with braking at 25km/h the child dummy not wearing a seatbelt was thrown from the bicycle, whereas the belted dummy barely moved.[83] Cargo bikes are also increasingly used by logistics operators for freight deliveries, particularly last-mile deliveries in urban areas. London introduced the cargo bike safety standard in 2025 with the aim of ensuring safety. The standard is aimed at both operators and riders and sets out the requirements needed for safe deliveries by cargo bike in the city (it does not cover cargo bikes carrying passengers). Requirements for meeting the standard include: compliance with EAPAC regulations, safe speeds, safe parking, operator able to easily identify bike and rider.[84]

> *Despite regulations, electric bicycles not meeting the required EU standards continue to enter European markets, particularly after being bought through online marketplaces.*

Trading standards services in the Netherlands (ILT) have targeted the import of these vehicles and to date have seized around 16,500 bikes, many of which look like fatbikes (electric bicycle with fat tyres and wide saddle) but are in fact illegal mopeds.[85] In the UK, an All-Party Parliamentary Group found that the majority of serious safety incidents, primarily battery fires, involving electric bicycles involved poor quality and often illegal products such as throttle-controlled motorbikes sold as electric bicycles online, and high-powered conversion kits that allow ordinary bicycles to be modified.[86]

[83] DEKRA (2020), Transporting children in a cargo bike – always use a seatbelt and a helmet!, https://tinyurl.com/3b6s8bdc
[84] TfL, (2025), London cargo bike safety standard, https://tinyurl.com/46uk5d8d
[85] Ministry of Infrastructure and Water management (2024), Press release: ILT seizes 16,500 fatbikes (In Dutch: LT legt beslag op ruim 16.500 fatbikes), https://tinyurl.com/y6hn5v5c
[86] APPGCW (2025), Unregulated and Unsafe: The Threat of Illegal E-Bikes, https://tinyurl.com/243bv987

3.3.1.2 Improving the safety of bicycle vehicle design

Research into how the vehicle design of bicycles could be modified to improve safety is ongoing. Bicycles are balance vehicles and at low speeds they are unstable.

High quality and well-maintained brakes are crucial for safe cycling. The addition of ABS (anti-lock braking system) to electric bicycles is being researched. Research done in Austria identified incorrect or excessive braking as a significant risk factor in electric bicycle collisions. Emergency braking on an electric bicycle can lead to the front wheel locking up and sliding sideways, the rear wheel lifting off the ground and in the worst case, the bicycle and rider being thrown over. Tests carried out during the Austrian research show that emergency braking on an electric bicycle equipped with ABS is controlled and offers improved safety.[87] More research is needed on the role of lock-up front wheel scenarios (flying over the handlebars) in bicycle collisions and on ABS on electric bicycles.

Research is also being conducted into how to improve the safety of older cyclists whose vulnerability and decreased ability to balance, especially at lower bicycle speeds, can lead to a higher risk of serious injury and death. One example is the SOFIE project (Intelligent Supported Bicycle) which sought to develop intelligent assistance devices for electric bicycles to help older cyclists and cyclists with disabilities. The project sought to analyse the impact of 3 bicycle support systems integrated into a SOFIE prototype bicycle: an automatic adjustable saddle height, an optimised frame and wheel geometry and drive-off assistance. Overall, the SOFIE bicycle was experienced by the testers as a 'supportive' and comfortable bicycle and objectively performed 'safer' on various cycling tasks.[88]

Adding a rear-view mirror to a bicycle can improve cycling safety for older cyclists who may find it more difficult to look behind them whilst at the same time balancing on a bicycle.[89] Recommending step-through frames and upright riding positions may also be useful for improving handling for older bicycle riders.[90]

3.3.2 New motor vehicle safety technologies

Intelligent Speed Assistance (ISA) became mandatory on all new motor vehicles as of July 2024 and Automated Emergency Braking (AEB) detecting pedestrians and cyclists was required on new models as of July 2024. The passive safety of cars was also improved by extending the crash test zone to include the windscreen between the A-pillars[91] for better pedestrian and cyclist passive protection.

New heavy goods vehicles have also had to be fitted with advanced systems capable of detecting pedestrians and cyclists located in close proximity since 2024 and new models must also comply with improved direct vision requirements as of 2026.

To accelerate the market penetration of safe vehicles, Member States and local authorities should introduce public procurement requirements and urban access regulations to promote safer vehicles.

3.3.3 Improving motor vehicle safety regulations

The European Commission is required to review the General Safety Regulation by July 2027 and, where appropriate, accompany that review with a legislative proposal to update it to further reduce or eliminate collisions and injuries.[92]

In recent years, cars have become heavier, taller and more powerful.

> *"The risk of injuries to vulnerable road users increases as the weight of the vehicle hitting them increases.*

The same is true for the bonnet height of the vehicle hitting them. For example, a pedestrian or cyclist hit by a car with a bonnet 90 cm high runs a 30% greater risk of fatal injury than if hit by a vehicle with a bonnet 10 cm lower.[93] A maximum bonnet height as well as a maximum weight limit for passenger cars should be introduced.

87 https://www.kfv.at/mit-und-ohne-abs-e-bike-bremsmanoever-unter-der-lupe/
88 R. Dubbeldam, R., Baten, C., Buurke, J.H., Rietman, J.S., (2017) SOFIE, a bicycle that supports older cyclists? https://tinyurl.com/5ekwa942
89 Boele, M. & De Haas, M. (2022). The pedelec and road safety (In Dutch: De elektrische fiets en verkeersveiligheid). Geron, 24(2). https://tinyurl.com/4j5ewn5h
90 R. Dubbeldam, R., Baten, C., Buurke, J.H., Rietman, J.S., (2017) SOFIE, a bicycle that supports older cyclists? https://tinyurl.com/5ekwa942
91 A-pillars are support posts that are positioned on either side of the windscreen of a vehicle connecting the roof to the body.
92 Regulation (EU) 2019/2144 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users. https://tinyurl.com/59resfsa
93 VIAS Institute (2023), Cars are larger and more powerful (In Dutch: Wagens zijn groter en krachtiger), https://tinyurl.com/5n8t36p2

'Dooring', where a car occupant opens their door into the path of an approaching cyclist, is a common cause for serious injuries of cyclists involved in collisions with vehicles.[94] Cyclist dooring prevention systems can warn occupants to not open the door when a cyclist is approaching, and more advanced systems can also physically prevent the door from being opened in such situations. Cyclist dooring prevention systems should be made mandatory.

3.3.4 Euro NCAP Testing

The consumer vehicle safety rating organisation Euro NCAP (European New Car Assessment Programme) carries out several test scenarios involving cyclists to test the ability of the AEB systems installed in vehicles to deal with the most common scenarios in which a fatal collision might occur between a cyclists and a car.[95] Since 2023, Euro NCAP also rewards cars which have systems to avoid 'dooring' events.[96]

In 2024, Euro NCAP announced the results of the first tests carried out on HGVs. In addition to awarding an overall rating assessing active and passive safety (passive safety only from 2030), Euro NCAP also introduced a specific 'City Safe' rating which focusses on the functions and technologies that increase the safety of pedestrians and cyclists.[97]

3.3.5 Lighting

Bicycle lighting increases the visibility of cyclists in traffic.

In all the PIN countries able to provide data for this report, having a light on a bicycle is mandatory. In 9 PIN countries (AT, CH, EE, FI, HR, LV, NO, RS, SE) a light is only mandatory during darkness or periods of low visibility.

RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Use public procurement to require motor vehicle safety features such as direct vision, Intelligent Speed Assistance, Automated Emergency Braking with cyclist detection and alcohol interlocks in public sector fleets and fleets providing the public with services until such time as all vehicles on the roads have such features.
- Attend UNECE working groups dealing with motor vehicle regulations and insist on the highest possible standards with regards to the implementation of the General Safety Regulation.
- Apply best practice stemming from research on the safe design of bicycles.
- Mandate cyclists to have adequate lighting when travelling in the dark.

RECOMMENDATIONS TO EU INSTITUTIONS

- Research the relationship between motor vehicle design and cyclist injury outcomes.
- Mandate the installation of a cyclist dooring prevention system and a risk mitigation function system;
- Initiate an amendment of UN Regulation No 127 to include headform contact with A-pillars;
- Introduce a maximum bonnet height as well as a maximum weight limit for passenger cars.
- Introduce minimum requirements for cycle lighting and reflective elements.

[94] There were 3,500 'dooring' collisions in Germany in 2018 alone. https://tinyurl.com/48ws6b6c
[95] EuroNCAP, AEB cyclist, https://tinyurl.com/2hr52x2u
[96] EuroNCAP, Cyclist dooring prevention, https://tinyurl.com/52hmcp8b
[97] EuroNCAP (2024) Safer Trucks https://tinyurl.com/vrb7wmfp

3.4 HUMAN BEHAVIOUR

3.4.1 Driving under the influence of alcohol

It is estimated that about 1.5 - 2% of kilometres travelled in the EU are driven with an illegal blood alcohol concentration (BAC), but around 25% of all road deaths in the EU are estimated to be alcohol-related.[98]

The risk of a road death increases exponentially with the BAC level of the driver. Drivers with a BAC between 0.1g/l and 0.5g/l are one to three times more likely to be involved in a fatal collision than sober drivers. Drivers with a BAC between 0.5 and 0.8g/l are between 5 and 10 times more likely to be involved in a fatal collision. Legal blood alcohol concentration (BAC) limits are an important measure for tackling drink-driving. The European Commission recommends BAC limits are set at a maximum of 0.5g/l with a lower limit of 0.2g/l for novice and professional drivers.[99]

There are differences in national definitions of road deaths attributed to alcohol. The European project SafetyNet recommends using the following definition: "any death occurring as a result of a road accident in which any active participant was found with a blood alcohol level above the legal limit".

Under such a definition, a cyclist killed by an impaired driver over the legal BAC limit should be considered an alcohol-related road death. Traditionally, in many countries, only deaths of impaired drivers, or deaths of victims of impaired drivers were considered alcohol-related road deaths, or even only victims of collisions police suspected to be due to drink-driving. Furthermore, there are indications that not all 'active' road users involved in a road collision that resulted in death or serious injury are systematically tested for alcohol, even if the country has officially adopted the SafetyNet definition.

It is difficult therefore to know how many cyclists are killed by impaired drivers. Data from Finland, where in-depth collision investigations are carried out on all fatal collisions, show us that between 2018 and 2022, 90 motor vehicle drivers caused a collision which resulted in the death of a cyclist or pedestrian. Of the 82 motor vehicle drivers causing a collision which resulted in the death of a cyclist or pedestrian for which intoxication results are available, 10% were under the influence of intoxicants (four were under the influence of only alcohol and four were under the influence of intoxicants other than alcohol or had used other intoxicants mixed with alcohol).[100] Data are also available in Great Britain for fatal or serious injury collisions involving a pedal cycle where a police officer attended and assigned at least one contributory factor. Here the data show that 1% of drivers/riders of other vehicles in fatal or serious injury collisions involving a pedal cycle were recorded as being affected by alcohol.[101]

3.4.2 Cycling under the influence of alcohol

Alcohol or drug intoxication can be a contributing factor in fatal and serious cyclist collisions. Research done in the Netherlands using data from visits to hospital emergency departments showed that cyclists represent 76% of all traffic victims who had used alcohol and/or drugs prior to their collisions.[102]

Legal blood alcohol concentration (BAC) limits are an important measure for tackling drunk-cycling.

20 PIN countries have a BAC limit for cyclists. The limits range from 1.6g/l in Germany to 0.0g/l in Czechia. The majority of PIN countries have a BAC limit for cyclists of 0.5g/l. Three countries have a BAC limit of 0.2g/l and 6 countries report not having a BAC limit for cyclists (Table 5).

[98] ETSC (2022) progress in reducing drink-driving and other alcohol-related road deaths in Europe https://tinyurl.com/526m8anr
[99] Ibid
[100] OTI (2024) DUI Report https://tinyurl.com/ywd2evbf
[101] Department for Transport (2025) Reported road casualties in Great Britain: pedal cycle factsheet, 2024 https://tinyurl.com/y7635h2x
[102] VeiligheidNL (2022), Substance use in traffic (In Dutch: Middelengebruik in het verkeer), https://tinyurl.com/mr34jnm5

Table 5. BAC limits for cyclists

BAC limits for cyclists						
No limits	**1.6 g/l**	**0.8 g/l**	**0.5 g/l**	**0.4 g/l**	**0.2 g/l**	**0.0 g/l**
Denmark	Germany[b]	Austria	Belgium	Lithuania	Estonia	Czechia
Finland			Bulgaria		Poland	
Hungary[a]			Cyprus		Serbia	
Ireland			France			
Sweden			Greece			
United Kingdom			Italy			
			Latvia			
			Malta			
			Netherlands			
			Portugal			
			Slovakia[c]			
			Spain			
			Switzerland			

[a]HU – There is no specific BAC limit for cyclists in Hungary; however, cycling is only permitted if the rider is in a condition fit for safe participation in traffic.
[b]In Germany, cycling with 1.6g/l blood alcohol or more is a criminal offence. Lower levels (from 0.3g/l) combined with impaired riding can lead to fines or other penalties, and even under 1.6g/l, observable alcohol-related impairment may trigger legal consequences.
[c]SK – corresponding to 0.24 milligrams of ethanol per litre of exhaled breath as determined by a breath test.
Source: PIN Panellists

3.4.3 Enforcement

Enforcement of exceeding speed limits and drink- or distracted-driving among motor vehicle drivers and riders is critical for improving the safety of all road users, including cyclists. Enforcement also has a key role to play in keeping impaired cyclists and illegal bicycles off the road.

3.4.3.1 Enforcement of impaired cyclists

Nine PIN countries were able to provide data for this report on the total number of cyclists found to be above the legal BAC limit for cycling in 2024 (Tables 6 and 7) and 5 were able to say what proportion of all cyclists tested for alcohol were found to be over the legal limit (Table 6).

> *In all the countries able to provide data, considerably more male cyclists were found to be over the legal BAC for cycling than women (Table 7).*

Data on cyclists found to be above the legal alcohol limit are gathered from different sources. For instance in Austria, Bulgaria, France and Slovenia the data are only from cyclists involved in police-reported collisions.

Table 6. **Total number of cyclists tested in 2024 and proportion found to be over the legal alcohol limit.**

	Total number of cyclists found to be above the legal alcohol limit in 2024	% of all tested cyclists found to be over the legal alcohol limit
BE	479	6.9%
BG	45	15.8%
FR	104	2.4%
LV	67	7.9%
SI	145	12.5%

Source: PIN panellists.

Table 7. **Cyclists found to be above the legal alcohol limit in 2024 and the proportions that were male or female.**

	Total number of cyclists found to be above the legal alcohol limit		
	2024	% male	% female
AT	681	86%	14%
BE	479	83%	17%
BG	45	100%	0%
EE	47	94%	2%
FR	104	86%	14%
HR	2,350	96%	4%
LV	67	90%	10%
PL*	31,288	n/a	n/a
SI	145	85%	15%

Source: PIN panellists
*PL - the numbers are given for all riders of non-motorised vehicles (the majority of these are cyclists, however they also include scooters riders and other PMD users)

FINLAND

CYCLISTS UNDER THE INFLUENCE OF ALCOHOL

Data from Finland on intoxicated cycling are available for 2018-2022. During this time, 18 of the 76 cyclists killed were intoxicated (where intoxication is known/not known). Fifteen of the cyclists were under the influence of alcohol; one of them was under the influence of other drugs in addition to alcohol. Three cyclists were under the influence of substances other than alcohol. Of the 18 intoxicated cyclists, seven were killed in collisions with motor vehicles, while 11 died in single-vehicle collisions. Of the seven cyclists involved in collisions, four were the at-fault parties. Among the intoxicated cyclists, five were aged 35–54, and 13 were aged 55–74.[103]

3.4.3.2 Tampering

Data on tampering electric bicycles are not widely available but data from Germany estimate that 1 in 3 electric bicycles are tampered with.[104] In the Netherlands there have been complaints about fast-moving electric bicycles for some time. So-called fatbikes in particular are a source of contention. These electric bicycles have fat tires and a large saddle and are very popular among young people. Speed boosting kits are very popular for these bicycles. One of the responses of the Dutch government was to ban the possession and use of speed booster devices for electric bicycles on public roads. In the Netherlands, a person caught with a tampered electric bicycle risks a fine of up to €320. Repeat offenders can have their bicycle confiscated.[105]

[103] OTI (2024), Driving under the influence report, https://tinyurl.com/ywd2evbf
[104] SWOV (2021) Crashes with speed-pedelects (In Dutch: Ongevallen met speed-pedelecs) https://tinyurl.com/5n83kfnb
[105] https://tinyurl.com/4488yy2h

NETHERLANDS

NEW ROLLER TESTBEDS CHECK FOR TAMPERING

In 2024 the police in the Netherlands obtained 247 new roller-testbeds capable of checking whether two-wheeled vehicles meet legal standards. While roller testbeds have been used in the Netherlands for many years to check mopeds and slow mopeds, the new testbeds can now also check electric bicycles. The number of fines for tampered electric bicycles in the Netherlands doubled between 2021 and 2024.

3.4.4 Helmets

Head and brain injuries sustained by cyclists could be reduced by bringing cycle helmets into general use. A meta-analysis of 83 empirical studies from 1989-2022 demonstrates that

> *"bicycle helmets reduce the number of head injuries by 51% and the number of fatal head injuries by 72%.*

The effect is approximately the same for adults and children.[106] Other studies carried out in France found that wearing a bicycle helmet reduces the risk of serious head injury by a factor of three.[107]

Although an optimistic estimate, research done in the Netherlands found that if by 2030 all Dutch cyclists wore a helmet, between 100 and 120 deaths and 1700-1900 serious injuries could be prevented in that year.[108] Similarly, research done in Norway found that mandatory helmet wearing for cyclists in Norway could prevent 0.6-1.3 road deaths, 15-31 serious injuries, and 440,000 head injuries among cyclists in Norway per year.[109]

14 PIN countries reported that helmet wearing is mandatory in their country, although often the legislation is applicable to children and young people. In Austria and France, bicycle helmets are mandatory for children under the age of 12, in Latvia under the age of 13 and in Sweden and Slovakia under the age of 15. In Estonia, Spain and Hungary bicycle helmets are mandatory for all those under the age of 16 and in Czechia, Latvia and Slovenia, all those under the age of 18.

Table 8. List of PIN countries where wearing a helmet is mandatory or not mandatory

Is wearing a helmet mandatory for cyclists in your country?	
YES	NO
Austria for children under 12 years	**Belgium**
Cyprus	**Bulgaria**
Czechia for people under 18 years	**Denmark**
Estonia for children under 16 years	**Finland**
Spain for children under 16 years	**Germany**
France for children under 12 years	**Greece**
Croatia for children under 16 years	**Ireland**
Hungary outside urban areas with speed limit above 40 km/h	**Italy**
Latvia	**Luxembourg**
Lithuania for people under 18 years	**Netherlands**
Malta	**Norway**
Sweden for children under 15 years	**Poland**[(a)]
Slovenia	**Portugal**
Slovakia for children under 15 years	**Romania**
	Serbia
	Switzerland
	United Kingdom

[(a)]PL – Following the approval by the Parliament of a new regulation, wearing a helmet will become mandatory from June 2026 for children under 16 years of age.
Source: PIN panellists

[106] Handbook of road safety – Bicycle helmets https://tinyurl.com/pn3je3d8
[107] Amoros E., Chiron M., Martin J.-L., Thélot B., Laumon B., Bicycle helmet wearing and the risk of head, face, and neck injury: a French case-control study based on a road trauma registry, Injury Prevention, 2012, vol. 18, n° 1, p. 27-32. https://tinyurl.com/bdhhuwzh
[108] SWOV (2025), Facts on bicycle helmets (In Dutch. English summary), https://tinyurl.com/yc2usrk3
[109] TØI (2024), Expected effects of a bicycle helmet law in Norway, https://tinyurl.com/dj2fmsav

Information campaigns have been shown to increase helmet-wearing rates, although the effect may only be temporary. After the last large-scale bicycle helmet campaign in the Netherlands in 2016, five times as many 4-8 years olds wore a helmet than before the campaign.[110] Voluntary bicycle helmet wearing campaigns have also been particularly successful in Denmark where the number of children aged 6-9 years old wearing a bicycle helmet has increased to 97% since rates were first measured in 2004. In 2025 the total bicycle helmet use across all age groups was 55% in Danish city traffic.[111] Research into the success of the voluntary bicycle helmet wearing in Denmark identified three key elements: raising awareness of the injury-reducing effects of helmets; making bicycle helmets easy to get and cheap to buy; and improving helmet design and making it a normal, sensible and attractive thing to wear a helmet.[112] [113]

UK

STUDY RANKS BICYCLE HELMET SAFETY

A study carried out by researchers at Imperial College London, and funded by the Road Safety Trust, has developed a cycle helmet safety rating system. Using scores from 0 to 5, the aim of the project is to help consumers make informed choices when buying a helmet.

Researchers tested 30 of the UK's most popular adult cycle helmets using a combination of in-lab testing, data from major retailers, and a survey of more than 1,000 cyclists.

The tests revealed significant differences in performance but no link between the price of a helmet and the level of safety it provides.

Funding for the project has been extended for a further three years so that the researchers can apply their testing and rating techniques to children's helmets as well as continuing to test the wide range of adult helmets available to buy.[114]

SWEDEN

BICYCLE HELMET TESTING REFLECTING COMMON BICYCLE COLLISIONS

Folksam Insurance group in Sweden has been carrying out consumer tests of bicycle helmets since 2012 with the aim of helping consumers choose safe helmets and encouraging manufacturers to make safer products. Folksam began its helmet testing because they considered certification test standards for helmets as insufficient since they do not cover a helmet's capacity to reduce rotational acceleration, i.e. when the head is exposed to rotation due to impact, a common bicycle collision which can result in concussion.

Although all the helmets they test annually meet the European standard (EN1078 2012), Folksam adds a test simulating an oblique impact to the head, to mirror common bicycle collisions where the cyclist falls to the ground, striking their head at an angle creating a rotation of the head. In total the helmets undergo 5 tests: a Shock Absorption Test (EN 1078); an Oblique Impact – Rotation around X-axis test; an Oblique Impact – Rotation around Y-axis test; an Oblique Impact – Rotation around Z-axis test; and computer simulations.

The results of 2025 tests show that rotational acceleration after impact varies widely among helmets on the European market. They also indicate that there is a link between rotational energy and strain on the brain. Folksam recommends that future certification helmet requirements should ensure a good performance for rotational loading as well as direct loading.[115]

3.4.4.1 Requirements for better testing/ standards of helmets.

All cycling helmets sold in the EU must meet the EN1078 standard (adults) and EN1080 standard (children). In accordance with the standards, the effectiveness of a bicycle helmet is tested by having the helmet impact on a flat surface ('flat anvil') at a speed of approximately 20 km/h and on a 'curb' surface ('curb anvil') at a speed of approximately 17 km/h.[116] But a recent review by researchers of 132 papers found that these testing methods are not enough and that more oblique (at an angle) impact tests are needed to better replicate real-world conditions.[117]
Work is currently ongoing at CEN (European Committee for Standardisation) regarding bicycle helmet testing

[110] SWOV (2023), Factsheet: cyclists, https://tinyurl.com/278mssdh
[111] Report to be published 8th April 2026 here: Rådet for Sikker Trafik - Analyser og undersøgelser I SikkerTrafik.dk
[112] Ehlers, P., (2022), How the Danish cyclists were convinced to use a bicycle helmet – without a law, https://tinyurl.com/59b5zrs3
[113] Olsson, B. (2023). Increased bicycle helmet use in the absence of mandatory bicycle helmet legislation: Prevalence and trends from longitudinal observational studies on the use of bicycle helmets among cyclists in Denmark 2004–2022. *Journal of safety research*, 87, 54-63. https://doi.org/10.1016/j.jsr.2023.09.003
[114] https://www.hiperhelmets.org/
[115] Folksam's report on bicycle helmets for adults (2025) https://tinyurl.com/24kcmxed
[116] SWOV Which requirements should a (good) bicycle helmet meet? https://bit.ly/3OUt2yQ
[117] Baker, C., Yu, X., Patel, S., & Ghajari, M., (2023), A Review of Cyclist Head Injury, Impact Characteristics and the Implications for Helmet Assessment

and a new oblique bicycle helmet test method (EN 17950) was presented there in 2024. The test method includes the specifications for a new, more humanlike head form, designed to measure both linear and rotational head kinematics and the risk of both focal and diffuse head injuries. The work within CEN on helmet testing continues, but it is hoped that an oblique test will be included in the standards (EN1078 and EN1080) in the near future.

3.4.5 Distraction

While research on distraction while driving a motor vehicle is building, there is still little knowledge about the possible increased risk of riding a bicycle while using a handheld mobile phone. In the Netherlands, in self-reported behaviour, 24% of adults interviewed reported that they at least occasionally cycled while phoning with their phone in their hand and 40% reported reading text messages while cycling. For young people aged 12-17 the proportions were 40% (phoning) and 59% (reading messages).[118] In France, 16% of cyclists were observed using a mobile phone (holding the phone to the ear, holding it in the hand without using it at the ear, or using a hands-free device) in a 2024 study conducted in built-up areas with higher population density, including Paris, Lille, Metz, Nantes, Lyon, Toulouse, and Avignon.[119]

Many countries ban the use of a hand-held mobile phone while cycling, just as is applicable to motor vehicle drivers and riders. In Belgium, cycling while using a hand-held mobile phone carries a fine of €174. This is the same fine applicable to motor vehicle drivers and riders. In the Netherlands, the fine for cycling with a hand-held mobile phone is €170 while the fine for driving with a hand-held mobile phone is €430.

3.4.6 Motorised vehicles overtaking cyclists

Close overtaking by motorised vehicles is a stressful experience for cyclists and can be a deterrent to cycling.[120]

How and when motorised vehicles overtake cyclists is often determined legally and stipulated in a country's highway code. The primary aim of these laws is to improve the safety of the cyclist. In Slovakia for instance, at least 1m should be given between the motor vehicle and the cyclist when overtaking cyclists at speeds up to 50km/h and 1.5m in other cases.[121] In the UK, the highway code was updated in 2022 and now states that at least 1.5m should be given when overtaking cyclists at speeds of up to 48 km/h (30mph), and more when overtaking at higher speeds. Evidence exists however that, despite legal requirements, close overtaking of cyclists is still a regular occurrence.

One approach might be to suggest overtaking cyclists as if they were cars i.e. with a full lane change. This would make the situation less stressful and safer for cyclists.[122]

3.5 EDUCATION

Education is one tool to improve cyclist safety and is commonly provided to children across Europe.

Nearly all European countries have educational goals and/or competences related to cyclist education set at their national level, with theoretical lessons generally being provided to children in the vast majority of countries and practical lessons in a smaller majority of countries.

> *Although cycling education is therefore widespread across Europe, its actual delivery to children is inconsistent.*

While some countries achieve near-total coverage, others reach only a fraction of their youth—in some cases, as few as 10% to 20%. A forthcoming LEARN! report[123] will set out the state of education on teaching children safe cycling (and walking) in Europe. It will provide a detailed overview of the national frameworks, theoretical and practical lessons, as well as assessments in place in countries across Europe.

Methods, https://tinyurl.com/dkp9rmuu
[118] SWOV (2023), Factsheet: cyclists, https://tinyurl.com/278mssdh
[119] ONISR (2024), La sécurité routière en France Bilan de l'accidentalité de l'année 2024 (in French, Road safety in France: Accident statistics for 2024), p. 136, https://tinyurl.com/2n9v5n35
[120] https://sabrina-scrt.eu/scrt/
[121] http://tinyurl.com/5n7cufdw
[122] Kircher, K., Forward, S., Wallén Warner, H., (2022) Cycling in Rural Areas. An overview of national and international literature http://tinyurl.com/2f6767hd
[123] The LEARN! report will be published in the coming months and will be available at: https://www.trafficsafetyeducation.eu/

RECOMMENDATIONS TO NATIONAL GOVERNMENTS

- Intensify traffic law enforcement for all motorised vehicles, especially of speeding, in urban areas where there are high numbers of cyclists.
- Link sanctions for driver violations to relative risk: graded sanctions should be applied for higher speeds on 30 km/h and 50 km/h roads where there are higher numbers of cyclists.
- Map high risk sites for cyclists and use this to inform and direct enforcement actions of, especially speeding.
- Collect the annual number of drink-driving checks and those which were positive, and the number of deaths and serious injuries in drink-driving collisions.
- Introduce and enforce sanctions for cyclists for exposing themselves or other road users to unnecessary risks.
- Ensure that cyclists have a minimum level of traffic education and awareness of the risks imposed by the current traffic system through training and education.
- Encourage helmet wearing among cyclists without discouraging cycling.

RECOMMENDATIONS TO EU INSTITUTIONS

- Support Member States in preparing national enforcement plans with annual targets for compliance in the areas of speeding, drink driving and distraction, especially in urban areas where there are high numbers of cyclists.
- Revise standards for testing bicycle helmets to offer high levels of protection.
- Support the setting up of a European helmet consumer information scheme, providing independent consumer information on the safety performance of the most popular helmets sold in the EU including information on durability and required maintenance.
- Encourage Member States to collect data on alcohol-related road deaths based on the SafetyNet definition.

3.6 SAFETY AND SUSTAINABILITY

As active travel is being encouraged to help reach environmental and health goals, the safety of cycling must be addressed urgently. The EC should build on the 2024 EU Cycling Declaration[124] through which member states committed to 'significantly increasing safe and coherent cycling infrastructure across Europe; developing and using EU guidance on standards for quality requirements regarding vulnerable road users, including cyclists, under Directive (EU) 2019/1936 on road infrastructure safety management; and giving sufficient space to cyclists and other vulnerable road users to increase safety levels, in particular through the physical separation of cycle paths from motorised traffic wherever feasible, which recognises the need to work on cycling safety.

New EU legislation will require cities to develop Sustainable Urban Mobility Plans (SUMPs) by 2027, including increasing and improving infrastructure for cycling.[125]

In a study of EU member state climate plans, it was found that while 27 countries include a reference to cycling in their national energy and climate plans, only 9 countries reference improving road safety for cyclists.[126]

> *Actions to increase levels of cycling should always be accompanied by actions to ensure safety.*

[124] EU Cycling Declaration (2024) https://tinyurl.com/57xhmw3m
[125] Trans-European transport network (TEN-T): Council and Parliament strike a deal to ensure sustainable connectivity in Europe (2023) https://tinyurl.com/st27tw8x
[126] ECF (2025) A Glass Half Full https://tinyurl.com/y9wp6zft

ANNEXES

ISO CODES

Country	ISO Code
Austria	AT
Belgium	BE
Bulgaria	BG
Switzerland	CH
Cyprus	CY
Czechia	CZ
Germany	DE
Denmark	DK
Estonia	EE
Greece	EL
Spain	ES
Finland	FI
France	FR
Great Britain	GB
Croatia	HR
Hungary	HU
Ireland	IE
Italy	IT
Lithuania	LT
Luxembourg	LU
Latvia	LV
Malta	MT
The Netherlands	NL
Norway	NO
Poland	PL
Portugal	PT
Romania	RO
Serbia	RS
Sweden	SE
Slovenia	SI
Slovakia	SK
The United Kingdom	UK

Total population over the period 2021-2024

	2021	2022	2023	2024
AT	8,932,664	8,978,929	9,104,772	9,158,750
BE	11,554,767	11,617,623	11,742,796	11,817,096
BG	6,532,117	6,838,937	6,447,710	6,445,481
CY	914,476	904,705	920,701	966,365
CZ	10,494,836	10,516,707	10,827,529	10,900,555
DE	83,155,031	83,237,124	84,358,845	83,456,045
DK	5,840,045	5,873,420	5,932,654	5,961,249
EE	1,330,068	1,331,796	1,365,884	1,374,687
ES	47,400,798	47,432,893	48,085,361	48,619,695
FI	5,533,793	5,548,241	5,563,970	5,603,851
FR[(1)]	67,728,568	67,842,591	68,143,433	66,142,961
EL	10,678,632	10,459,782	10,413,982	10,400,720
HR	3,893,026	3,862,305	3,850,894	3,861,967
HU	9,651,461	9,689,010	9,599,744	9,584,627
IE	5,066,893	5,060,004	5,271,395	5,351,681
IT	59,236,213	59,030,133	58,997,201	58,971,230
LU	634,730	645,397	660,809	672,050
LV	1,893,223	1,875,757	1,883,008	1,871,882
LT	2,810,761	2,805,998	2,857,279	2,885,891
MT	516,125	520,971	542,051	563,443
NL	17,475,415	17,590,672	17,811,291	17,942,942
PL	37,073,357	37,654,247	36,753,736	36,620,970
PT	10,394,297	10,467,366	10,639,726	10,749,635
RO	19,201,662	19,042,455	19,054,548	19,067,576
SE	10,379,295	10,452,326	10,521,556	10,551,707
SI	2,108,977	2,107,180	2,116,972	2,123,949
SK	5,459,781	5,434,712	5,428,792	5,424,687
UK	67,026,000	67,600,000	68,400,000	69,200,000
CH	8,670,300	8,738,791	8,815,385	8,962,258
NO	5,391,369	5,425,270	5,488,984	5,550,217
RS	6,871,547	6,690,887	6,641,197	6,605,168
EU 27	**445,891,011**	**446,821,281**	**448,896,639**	**447,091,692**

Source: EUROSTAT
[(1)]Mainland France

Total population by age group, average years 2022-2024

	0-14	15-29	30-49	50-64	65-79	80+
AT	1,307,485	1,536,159	2,445,643	2,010,349	1,247,014	534,166
BE	1,931,490	2,090,358	3,053,969	2,337,553	1,667,097	645,371
BG	913,660	855,686	1,777,923	1,389,642	1,190,028	331,619
CY	145,990	168,970	292,836	175,613	125,659	39,336
CZ	1,723,991	1,613,451	3,179,808	2,026,254	1,735,058	469,702
DE	11,621,216	13,195,816	21,044,683	18,863,741	12,487,252	6,057,848
DK	943,852	1,131,468	1,466,036	1,167,751	908,102	305,231
EE	220,682	207,137	391,384	261,566	196,733	79,953
ES	6,518,371	7,638,765	13,670,430	10,537,083	6,805,589	2,893,728
FI	841,451	960,111	1,430,261	1,045,889	964,114	330,194
FR	11,748,753	11,972,152	16,946,156	13,174,561	10,358,678	4,078,459
EL	1,437,109	1,610,861	2,836,159	2,238,365	1,638,289	757,297
HR	547,741	614,396	1,005,962	812,539	666,081	211,669
HU	1,390,233	1,572,032	2,804,403	1,858,652	1,537,193	435,744
IE	1,014,894	967,378	1,527,653	948,842	612,845	187,505
IT	7,340,054	8,834,585	14,870,979	13,757,424	9,678,040	4,518,439
LU	104,412	123,236	202,779	130,842	72,196	25,954
LV	297,762	273,067	519,337	391,386	281,899	113,432
LT	421,132	432,056	788,108	635,334	412,390	160,702
MT	68,771	99,889	181,560	90,998	78,945	21,726
NL	2,717,959	3,337,578	4,411,123	3,713,692	2,725,815	875,468
PL	5,647,562	5,704,623	11,212,182	6,873,914	5,713,645	1,602,896
PT	1,361,021	1,649,897	2,756,698	2,245,832	1,781,709	730,665
RO	3,062,448	2,997,941	5,456,760	3,860,522	2,852,034	869,850
SE	1,823,926	1,854,559	2,769,646	1,913,514	1,562,373	584,512
SI	316,105	313,353	588,699	444,223	333,295	120,359
SK	871,215	848,105	1,688,355	1,051,903	781,843	187,976
UK	n/a	n/a	n/a	n/a	n/a	n/a
CH	1,329,932	1,459,896	2,496,135	1,858,439	1,207,346	487,063
NO	914,399	1,028,377	1,481,383	1,051,630	764,655	247,713
RS	961,998	1,061,400	1,825,434	1,365,533	1,170,019	296,774
EU 27	**66,290,945**	**72,585,515**	**119,171,083**	**93,992,135**	**68,502,012**	**27,125,131**

Source: EUROSTAT

Table 1 (Fig. 2) Total number of road deaths by road user group over the period 2022-2024 (or last three years available)

	2021				2022				2023				2024			
	Cyclists	Pedestrians	PTWs	Vehicle occupants	Cyclists	Pedestrians	PTWs	Vehicle occupants	Cyclists	Pedestrians	PTWs	Vehicle occupants	Cyclists	Pedestrians	PTWs	Vehicle occupants
AT[1]	50	37	88	187	44	49	63	214	42	54	92	211	32	48	89	175
BE	84	75	78	262	101	83	83	262	102	77	67	246	89	70	67	229
BG	17	94	49	401	25	94	39	373	14	97	53	361	18	111	46	303
CY	1	6	14	24	4	6	12	15	1	7	5	21	1	10	10	20
CZ	63	104	89	274	54	85	75	311	61	82	76	282	50	86	90	267
DE	372	344	529	1,317	474	375	549	1,390	446	442	550	1,401	445	402	554	1,369
DK	25	19	17	69	23	28	25	78	28	32	27	75	22	29	19	75
EE	7	13	3	32	3	11	5	30	5	18	6	30	3	11	10	45
ES	63	301	395	774	81	348	437	880	90	353	485	878	90	320	478	897
FI	24	24	32	145	18	27	22	129	20	23	21	121	18	22	21	118
FR	227	401	668	1,635	245	482	718	1,815	221	439	706	1,801	224	456	720	1,793
EL	14	95	235	280	13	112	211	318	10	102	247	287	12*	103*	231*	295*
HR	28	37	64	163	9	43	56	167	18	45	76	135	11	40	71	117
HU	53	97	67	327	42	126	57	312	43	103	51	275	47	90	60	300
IE	7	19	22	84	7	42	23	80	9	43	25	99	12	33	17	107
IT	220	471	762	1,422	205	485	851	1,618	212	485	802	1,540	185	470	891	1,484
LU	0	5	3	16	1	3	8	24	2	4	5	15	0	3	12	5
LV	13	46	18	74	12	30	12	61	14	31	17	76	6	34	16	56
LT	11	28	11	98	5	31	14	70	11	34	20	94	10	35	18	61
MT	0	4	2	3	0	15	8	5	0	7	5	4	0*	9*	5*	4*
NL	207	43	102	230	290	58	99	298	270	71	78	265	246	59	86	284
PL	185	527	269	1,264	170	460	211	1,055	154	458	238	1,043	169	428	268	1,031
PT	34	100	142	285	31	107	175	305	33	109	194	306	25	111	218	264
RO	149	583	86	961	160	530	85	858	160	472	95	818	156*	528*	89*	879*
SE	24	27	30	129	26	27	41	133	30	28	31	140	27	30	36	120
SI	10	15	33	56	12	14	14	43	8	12	11	50	5	6	13	44
SK	15	55	31	139	22	64	27	143	14	75	28	150	22	67	131	42
UK	111	369	324	775	92	401	359	883	89	425	328	816	83	417	347	796
CH	37	37	52	74	42	40	52	107	38	46	60	92	44	51	51	104
NO	3	9	16	52	6	13	21	76	6	6	23	75	6	6	21	54
RS	48	148	46	279	37	125	63	328	46	134	42	281	41	111	69	293
EU 27	**1,903**	**3,570**	**3,839**	**10,651**	**2,077**	**3,735**	**3,920**	**10,987**	**2,018**	**3,703**	**4,011**	**10,724**	**1,926**	**3,611**	**4,266**	**10,384**

Source: CARE database and national statistics provided by PIN Panellists in each country
[1]AT - Before 2023, e-scooters were recorded as e-bikes
*Estimated

Fig. 2 Cyclist, pedestrian, PTW user and motor vehicle occupant deaths reported by the police as a proportion of all reported road deaths ranked by the proportion of cyclist deaths				
	Cyclists	Pedestrians	PTWs	Vehicle Occupants
MT	0%	49%	28%	23%
EL	2%	16%	36%	46%
LU	4%	12%	30%	54%
BG	4%	20%	9%	68%
PT	5%	17%	31%	47%
HR	5%	16%	26%	53%
ES	5%	19%	26%	50%
UK	5%	25%	21%	50%
CY	5%	21%	24%	50%
IE	6%	24%	13%	58%
NO	6%	8%	21%	65%
EE	6%	23%	12%	59%
LT	6%	25%	13%	56%
IT	7%	16%	28%	50%
FR	7%	14%	22%	56%
SK	7%	26%	24%	43%
RS	8%	24%	11%	57%
PL	9%	24%	13%	55%
HU	9%	21%	11%	59%
LV	9%	26%	12%	53%
RO	9%	32%	5%	53%
FI	10%	13%	11%	66%
AT	11%	14%	22%	54%
SI	11%	14%	16%	59%
CZ	11%	17%	16%	57%
SE	12%	13%	16%	59%
DK	16%	19%	15%	49%
DE	16%	15%	20%	50%
CH	17%	19%	22%	42%
BE	20%	16%	15%	50%
NL	38%	9%	13%	40%
EU 27	**10%**	**18%**	**20%**	**52%**

Source: CARE database and national statistics provided by PIN Panellists in each country
(1)AT - Before 2023, e-scooters were recorded as e-bikes
*Estimated

Table 2 (Fig. 3, 4, 5, 6) Total number of conventional bicycle user and electric bicycle user deaths over the period 2014-2024

Conventional bicycles

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AT	45	39	48	32	24	22	19	26	20	23	12
BE	82	76	68	53	67	67	55	44	61	58	53
BG	29	29	35	22	21	27	19	17	25	14	18
CY	1	1	0	4	1	1	1	1	4	1	1
CZ	68	83	53	57	56	53	51	63	54	43	32
DE	396	383	393	382	445	445	426	241	266	256	250
DK	30	26	31	27	28	31	19	22	14	17	11
EE	0	0	4	1	3	2	1	7	3	5	3
ES	75	58	67	78	58	80	71	63	81	90	85
FI	27	31	26	23	21	23	31	24	18	18	17
FR	159	149	162	173	175	187	162	202	202	192	192
EL	19	11	18	11	12	22	12	14	13	10	12
HR	19	34	27	23	22	16	9	28	11	18	11
HU	98	83	75	81	69	63	40	53	42	43	44
IE	13	10	10	14	9	8	10	6	7	8	10
IT	273	251	275	254	219	253	169	207	185	200	165
LU	0	0	1	0	3	0	3	0	0	2	0
LV	16	9	7	11	9	9	17	13	12	14	6
LT	19	22	12	13	8	9	12	10	5	11	7
MT		0	1	0	1	0	0	0	0	0	0
NL	185	185	149	149	171	138	155	127	172	154	138
PL	286	300	271	220	285	258	249	185	170	154	169
PT	35	25	33	25	26	27	19	34	31	33	25
RO	151	162	176	191	181	198	191	149	160	160	156
SE	33	17	22	26	23	17	18	24	26	30	27
SI	13	14	12	11	8	9	8	10	11	8	4
SK	24	16	12	18	15	14	20	15	22	14	22
UK	116	100	105	103	100	102	145	111	92	89	83
GB	113	100	102	101	99	100	141	111	91	87	82
CH	29	25	24	30	27	16	29	22	19	26	20
NO	11	4	11	9	6	6	2	3	3	5	5
RS	50	68	57	48	39	65	41	48	37	46	41
EU27	**2,096**	**2,014**	**1,988**	**1,899**	**1,960**	**1,979**	**1,787**	**1,585**	**1,615**	**1,576**	**1,471**

Source: CARE database and national statistics provided by PIN Panellists in each country

(1)AT - Before 2023, e-scooters were recorded as e-bikes

(2)DK - it includes mobility scooters

For countries where no distinction is made between conventional bicycles and electric bicycles, the table conventional bicycles include deaths for both categories

Table 2 (Fig. 3, 4, 5, 6) Total number of conventional bicycle user and electric bicycle user deaths over the period 2014-2024

Electric bicycles

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AT[1]					17	11	21	24	24	19	20
BE	0	14	13	23	22	27	32	40	40	44	36
BG											
CY	0	0	0	0	0	0	0	0	0	0	0
CZ										18	18
DE								131	208	190	195
DK[2]							8	3	9	11	11
EE											
ES											5
FI										2	1
FR							16	25	43	29	32
EL											
HR											
HU											3
IE	0	0	0	0	0	0	0	1	0	1	2
IT							6	13	20	12	20
LU	0	0	0	0	0	0	0	0	1	0	0
LV											
LT				0	0	1	0	1	0	0	3
MT											
NL			40	57	57	65	74	80	118	116	108
PL											
PT											
RO											
SE											
SI							0	0	1	2	1
SK											
UK											
GB											
CH	4	12	8	7	11	10	13	15	23	12	24
NO	1	1	1	0	1	0	1	0	3	1	1
RS											
EU27	**0**	**14**	**53**	**80**	**96**	**104**	**157**	**318**	**464**	**444**	**455**

Source: CARE database and national statistics provided by PIN Panellists in each country
[1]AT - Before 2023, e-scooters were recorded as e-bikes
[2]DK - it includes mobility scooters
For countries where no distinction is made between conventional bicycles and electric bicycles, the table conventional bicycles include deaths for both categories

Table 3 (Fig. 3) Total number of motorised road user (motorised vehicle: mechanically propelled vehicle intended or adapted for use on the roads) deaths over the period 2014-2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AT	312	356	311	307	321	311	250	274	271	305	264
BE	541	562	502	433	435	446	344	340	345	313	296
BG	473	510	474	410	391	370	336	442	401	405	346
CY	32	39	32	34	40	37	34	38	27	26	30
CZ	489	496	428	390	459	453	370	363	386	358	357
DE	2,447	2,521	2,300	2,298	2,346	2,165	1,900	1,833	1,925	1,942	2,052
DK	130	124	144	128	113	138	112	84	103	102	97
EE	44	36	41	29	34	33	14	30	32	29	51
ES	1,272	1,261	1,348	1,389	1,354	1,278	1,034	1,163	1,311	1,344	1,363
FI	166	207	202	188	193	173	170	177	151	142	136
FR	2,726	2,844	2,756	2,791	2,603	2,575	1,972	2,303	2,533	2,507	2,513
EL	649	653	653	599	542	514	491	514	527	527	
HR	215	253	213	252	230	214	187	220	222	210	187
HU	374	416	382	375	399	392	312	393	367	328	364
IE							99	106	103	127	127
IT	2,513	2,552	2,422	2,503	2,442	2,367	1,806	2,165	2,443	2,324	2,346
LU	32	29	23	21	30	20	19	19	32	20	15
LV	124	115	95	73	89	82	79	92	73	93	72
LT	139	137	104	109	92	113	107	109	84	111	82
MT		6	14	12	15	11	11	5	12	9	
NL	331	376	387	348	384	404	332	323	387	341	369
PL	1,785	1,712	1,885	1,602	1,774	1,858	1,611	1,533	1,266	1,281	1,296
PT	457	417	406	445	508	521	416	426	479	500	497
RO	906	1,006	971	981	929	889	813	998	896	867	
SE	185	214	206	189	267	177	161	160	174	174	156
SI	59	68	77	63	57	58	54	74	47	43	48
SK	177	178	159	183	155	156	162	156	158	178	173
UK	1,263	1,269	1,278	1,263	1,251	1,207	1,015	1,110	1,252	1,158	1,154
GB	1,206	1,214	1,228	1,217	1,213	1,170	969	1,068	1,214	1,110	1,094
CH	166	157	134	146	147	124	147	126	158	152	155
NO	116	100	107	84	87	89	76	68	97	98	75
RS	357	371	410	386	353	334	318	323	390	321	361
EU27	**16,578**	**17,088**	**16,535**	**16,152**	**16,202**	**15,755**	**13,196**	**14,340**	**14,755**	**14,606**	**13,237**

Source: CARE database and national statistics provided by PIN Panellists in each country

Table 3 (Fig. 3) Total number of motorised road user (motorised vehicle: mechanically propelled vehicle intended or adapted for use on the roads) deaths over the period 2014-2024

	Fig. 3 Average annual change in cyclist deaths compared to the annual average change in motorised road user deaths reported by the police over the period 2014-2024		
	Cyclist deaths	Motorised user deaths	Years
HU	-8.2%	-1.2%	
HR	-7.9%	-1.6%	
LT	-7.5%	-3.5%	
NO	-6.9%	-2.8%	
PL	-6.3%	-3.7%	
BG	-6.1%	-2.7%	
SI	-5.6%	-3.6%	
FI	-3.9%	-3.2%	
IT	-3.6%	-1.2%	
RS	-3.4%	-1.0%	
EL	-3.0%	-3.1%	2014-2023
IE	-2.8%		
CZ	-2.3%	-3.2%	
DK	-2.1%	-3.7%	
UK	-1.8%	-1.2%	
GB	-1.8%	-1.2%	
AT	-0.7%	-2.1%	
LV	-0.5%	-3.6%	
PT	-0.4%	1.2%	
RO	-0.2%		2014-2023
SK	0.7%	-0.4%	
SE	1.2%	-2.7%	
DE	1.5%	-2.8%	
BE	1.6%	-6.3%	
CH	2.3%	-0.2%	
ES	2.8%	-0.1%	
NL	3.9%	-0.1%	
FR	4.7%	-1.6%	
EE	8.6%	1.1%	2016-2024
EU 27	**-0.5%**	**-2.3%**	

Fig. 4 Average annual change in the number of electric bicycle user deaths compared to the average annual change in the number of conventional bicycle user deaths over the same time period			
	Electric bicycles	Conventional bicycles	Years
AT	6.3%	-6.7%	2018-2024
DE	11.7%	0.7%	2021-2024
CH	13.4%	-2.6%	
NL	13.8%	-0.5%	2016-2024
BE	14.1%	-3.1%	2015-2024
FR	16.6%	2.9%	2020-2024
DK	21.4%	-12.6%	2020-2024
IT	26.2%	-0.8%	2020-2024

Fig. 5 Average annual cyclist deaths per million inhabitants reported by the police (average 2022-2024)		
NO	1.1	
EL	1.2	2021-2023
UK	1.3	
LU	1.5	
IE	1.8	
ES	1.8	
CY	2.1	
SE	2.6	
EE	2.7	
PT	2.8	
BG	2.9	
LT	3.0	
FI	3.4	
IT	3.4	
HR	3.5	
FR	3.5	
SK	3.6	
DK	4.1	
SI	4.3	
AT	4.3	
PL	4.4	
HU	4.6	
CH	4.7	
CZ	5.1	
DE	5.4	
LV	5.7	
RS	6.2	
RO	8.2	2021-2023
BE	8.3	
NL	15.1	
EU 27	**4.5**	

Table 4 (Fig. 6) Distance cycled (in billion km) over the period 2022-2024 (or last three years available)

	2021	2022	2023	2024	Please indicate how distance cycled is estimated in your country
AT					
BE					
BG					
CY					
CZ					
DE					There is currently no official annual estimate of total bicycle traffic and no published source provides a literal figure for the annual total distance cycled in Germany.
DK					
EE	0.091				Distance cycled is an estimate based on national travel survey data (the first and only survey so far is 2021, second one in 2026) - the number of cycling trips is extrapolated to the overall population and multiplied with average distance cycled
ES					
FI	1.41	1.22	1.42	1.64	Calculation is based on results of National Travel Surveys
FR					Estimate can only be made with the national travel survey every 10 years (last one was in 2019). Still exploring other ways to build an estimate and update it each year.
EL					
HR					
HU					
IE					
IT	0.014	0.031	0.034	0.032	The data only includes the distance traveled with bike sharing - Source: Osservatorio Nazionale Sharing Mobilitity “Rapporto Nazionale Sharing Mobility” Years 2025, 2024, 2023, 2022
LU					Not available
LV					No estimates
LT					Note: There are no official statistics on the total distance cycled in Lithuania. The National Cycling Strategy sets a target to increase cycling modal share to 10% by 2035 and expand cycling infrastructure to 5,000 km (Source: National Cycling Strategy and Action Plan, https://sumin.lrv.lt/public/canonical/1721023153/10947/NATIONAL%20STRATEGY%20AND%20ACTION%20PLAN%20CYCLING%20PROMOTION.pdf).
MT					
NL	16.1	18.4	17.8		billion (10^9) travellerskilometers CBS; https://opendata.cbs.nl/#/CBS/nl/dataset/84687NED/table?searchKeywords=reizigerskilometer%20fiets (data from SURVEY ODIN) https://opendata.cbs.nl/#/CBS/nl/dataset/84687NED/table?dl=C8E3D
PL					
PT					
RO					
SE	2.06	2.22	2.15	2.23	Million kilometer. Estimated by the national survey, RVU. Travel distance per year for cyclists, in million kilometers for total men and women by main mode of transport.
SI	0.33	0.35	0.36		There are currently no official national statistics on total distance cycled in Slovenia. Estimates are derived from the National Transport Model (Državni prometni model), which provides modelled data on bicycle kilometres travelled (CKM) based on population distribution, trip purposes, and calibrated data from available traffic counts and household travel surveys.
SK					
UK					
GB	6.8	6.3	5.8	5.7	Calculated from traffic counts conducted by the department for transport - these are then scaled up to national figures - see here: https://www.gov.uk/guidance/road-traffic-statistics-information
CH					
NO					
RS					

Source: National statistics provided by PIN Panellists in each country

	Fig. 6 Cyclist deaths per billion km cycled over the period 2022-2024 (or last three years available)	
SE	13	
FI	13	
GB	15	
NL	15	2021-2023
SI	31	2021-2023

Table 5 (Fig. 7) Total number of cyclist deaths in collision with other road users over the period 2022-2024 or last three years available

	Fig. 7 Proportion (%) of cyclist deaths that occurred in collisions with different types of vehicles, ranked by the % that occurred in collisions with cars, average years 2022-2024									
	Car	PTW	Cyclist	Pedestrian	LGVs	HGVs	Bus or coach	None	Other or unknown	Years
SE	23%	2%	2%	0%	0%	13%	5%	49%	5%	
FI	27%	2%	4%	2%	0%	5%	4%	55%	2%	
AT	31%	3%	1%	1%	6%	12%	1%	37%	9%	
CH	31%	2%	5%	0%	1%	11%	2%	42%	6%	
IE	32%	0%	11%	0%	7%	11%	0%	36%	4%	
NO	33%	0%	0%	0%	11%	6%	6%	33%	11%	
LU	33%	0%	0%	0%	0%	0%	0%	67%	0%	
CZ	35%	1%	1%	1%	5%	7%	2%	39%	9%	
NL	36%	4%	7%	0%	7%	6%	2%	33%	5%	
BE	37%	3%	4%	0%	5%	19%	2%	24%	5%	
SI	37%	4%	0%	0%	0%	4%	0%	48%	7%	
PT	37%	1%	0%	0%	13%	4%	2%	35%	7%	
FR	38%	2%	1%	0%	8%	10%	1%	38%	3%	
DK	38%	1%	4%	1%	7%	16%	3%	27%	1%	
DE	39%	2%	4%	1%	3%	9%	1%	35%	6%	
ES	43%	2%	0%	0%	12%	8%	2%	30%	4%	
EE	45%	9%	0%	0%	0%	36%	0%	9%	0%	
RO	48%	1%	0%	0%	16%	2%	0%	31%	1%	2021-2023
EL	49%	8%	3%	0%	16%	8%	3%	14%	0%	2021-2023
CY	50%	17%	0%	0%	0%	17%	0%	17%	0%	
SK	52%	5%	2%	2%	5%	8%	0%	21%	5%	
BG	54%	2%	0%	0%	0%	14%	5%	21%	4%	
HU	55%	1%	1%	0%	12%	12%	5%	9%	6%	
RS	58%	2%	0%	0%	0%	24%	3%	7%	5%	
IT	60%	5%	1%	0%	10%	5%	2%	14%	2%	
LT	62%	4%	0%	0%	8%	15%	8%	0%	4%	
PL	62%	2%	1%	0%	10%	12%	3%	6%	3%	
HR	63%	0%	0%	3%	18%	0%	5%	3%	8%	
LV	66%	0%	3%	0%	3%	16%	3%	9%	0%	
EU 27	**44%**	**3%**	**3%**	**0%**	**7%**	**9%**	**2%**	**28%**	**4%**	

Table 6 (Fig. 8, 9, 10) Total number of conventional bicycle and electric bicycle user deaths by age groups over the period 2022-2024 or last three years available

	Fig. 8 Cyclist deaths reported by the police per million inhabitants (2022-2024 average or last three years available) for each of the age groups (years) ranked by 65-79 mortality						
	0-14	15-29	30-49	50-64	65-79	80+	Years
CY	0.0	3.9	4.6	0.0	0.0	0.0	
NO	1.1	0.0	0.5	2.9	0.4	4.0	
EE	0.0	1.6	0.9	5.1	1.7	16.7	
EL	0.5	0.8	0.9	1.0	1.8	2.2	2021-2023
ES	0.2	1.0	1.5	2.5	3.5	2.3	
PT	1.0	2.6	2.3	3.0	4.7	3.6	
IE	0.3	1.7	0.7	3.5	4.9	0.0	
BG	1.1	0.0	3.0	4.3	5.0	2.0	
SE	0.2	0.7	1.8	2.4	5.1	14.3	
IT	0.5	2.1	2.4	3.4	5.6	8.9	
SK	0.4	2.0	4.1	5.1	6.8	3.5	
FI	1.6	0.7	1.4	4.8	6.9	9.1	
LT	0.0	1.5	1.7	5.8	7.3	0.0	
HR	1.2	1.1	1.7	4.5	8.0	3.1	
DK	0.7	2.1	0.9	3.4	8.4	27.3	
HU	0.2	1.9	2.1	8.4	8.5	13.0	
FR	0.5	1.6	1.8	4.5	8.6	6.5	
LU	0.0	0.0	0.0	2.5	9.2	0.0	
PL	1.2	1.5	3.1	6.1	9.3	11.9	
SI	2.1	1.1	1.7	5.3	10.0	5.5	
AT	0.5	2.2	1.8	5.1	10.4	14.4	
CH	0.5	1.8	2.1	6.8	10.5	15.1	
DE	0.5	1.7	2.1	5.5	11.3	22.7	
CZ	0.6	1.9	2.7	8.7	11.3	9.2	
LV	1.1	1.2	3.9	10.2	14.2	0.0	
RS	1.0	1.6	1.8	8.8	16.5	13.5	
BE	1.0	4.0	4.7	11.8	17.4	24.3	
RO	1.6	1.7	4.3	15.2	19.4	9.6	2021-2023
NL	3.7	6.2	4.9	11.9	34.6	88.7	
EU 27	**0.8**	**1.9**	**2.4**	**5.4**	**9.5**	**13.9**	

Table 6 (Fig. 8, 9, 10) Total number of conventional bicycle and electric bicycle user deaths by age groups over the period 2022-2024 or last three years available

	Fig. 9 Proportion (%) of cyclist deaths by age group, ranked by proportion of 65+ cyclist deaths, from lowest to highest. Average years 2022-2024 (or last three years available)							
	0-14	15-29	30-49	50-64	65-79	80+	Unknown	Years
CY	0%	33%	67%	0%	0%	0%	0%	
NO	17%	0%	11%	50%	6%	17%	0%	
UK	5%	11%	28%	28%	21%	7%	0%	
SK	2%	8%	34%	26%	26%	3%	0%	
IE	4%	18%	11%	36%	32%	0%	0%	
LT	0%	8%	15%	42%	35%	0%	0%	
ES	2%	9%	23%	31%	27%	8%	1%	
BG	5%	0%	28%	32%	32%	4%	0%	
PT	4%	15%	21%	22%	28%	9%	0%	
LV	3%	3%	19%	38%	38%	0%	0%	
EL	5%	11%	22%	19%	24%	14%	5%	2021-2023
RO	3%	3%	15%	38%	35%	5%	0%	2021-2023
HU	1%	7%	14%	36%	30%	13%	1%	
CZ	2%	5%	16%	32%	36%	8%	1%	
PL	4%	5%	21%	25%	32%	12%	0%	
EE	0%	9%	9%	36%	9%	36%	0%	
BE	2%	9%	15%	28%	30%	16%	0%	
IT	2%	9%	17%	24%	27%	20%	1%	
HR	5%	5%	13%	29%	42%	5%	0%	
SI	8%	4%	12%	28%	40%	8%	0%	
CH	2%	6%	13%	31%	31%	18%	0%	
FR	2%	9%	13%	26%	39%	12%	0%	
FI	7%	4%	11%	27%	36%	16%	0%	
AT	2%	8%	11%	26%	33%	19%	0%	
RS	2%	4%	8%	29%	47%	10%	0%	
SE	1%	5%	18%	17%	29%	30%	0%	
DE	1%	5%	10%	23%	31%	30%	0%	
NL	4%	8%	8%	17%	35%	29%	0%	
DK	3%	10%	5%	16%	32%	34%	0%	
EU 27	**3%**	**7%**	**14%**	**25%**	**33%**	**19%**	**0%**	

Table 6 (Fig. 8, 9, 10) Total number of conventional bicycle and electric bicycle user deaths by age groups over the period 2022-2024 or last three years available

		Fig. 10 Proportion (%) of electric bicycle user road deaths and conventional bicycle user road deaths by age roup. Average 2022-2024 (or last three years available)							
		0-14	15-29	30-49	50-64	65-79	80+	Unknown	Years
AT	electric bicycles	2%	6%	6%	21%	38%	27%	0%	
	conventional bicycles	2%	11%	16%	33%	27%	11%	0%	
BE	electric bicycles	3%	4%	14%	28%	33%	18%	0%	
	conventional bicycles	2%	12%	15%	29%	27%	15%	1%	
CH	electric bicycles	2%	0%	7%	31%	44%	17%	0%	
	conventional bicycles	2%	12%	18%	31%	18%	18%	0%	
CZ	electric bicycles	0%	4%	4%	23%	50%	19%	0%	2023-2024
	conventional bicycles	2%	5%	16%	34%	35%	7%	0%	
DE	electric bicycles	1%	4%	8%	21%	33%	34%	0%	
	conventional bicycles	2%	5%	12%	24%	29%	28%	0%	
DK	electric bicycles	0%	13%	0%	19%	39%	29%	0%	
	conventional bicycles	5%	7%	10%	14%	26%	38%	0%	
FR	electric bicycles	2%	12%	12%	21%	38%	16%	0%	
	conventional bicycles	2%	8%	13%	27%	39%	11%	0%	
IT	electric bicycles	4%	15%	21%	13%	21%	25%	0%	
	conventional bicycles	2%	9%	17%	25%	28%	19%	1%	
NL	electric bicycles	2%	5%	5%	10%	42%	36%	0%	
	conventional bicycles	5%	10%	10%	22%	30%	23%	0%	

Table 7 (Fig. 11 and 12) Total number of conventional bicycle and electric bicycles user deaths by gender over the period 2022-2024 or last three years available

Fig. 11 Proportion (%) of cyclist deaths by gender, ranked by proportion of male cyclist deaths, from lowest to highest. Average years 2022-2024 (or last tree years available)

	MALE	FEMALE	UNKNOWN	Years
NL	66%	34%	0%	
PL	75%	25%	0%	
BE	75%	24%	1%	
CH	75%	25%	0%	
AT	76%	24%	0%	
DK	77%	23%	0%	
DE	77%	23%	0%	
HU	78%	21%	1%	
RS	78%	22%	0%	
EE	82%	18%	0%	
IE	82%	18%	0%	
CZ	82%	18%	0%	
CY	83%	17%	0%	
FI	84%	16%	0%	
LT	85%	12%	4%	
UK	85%	15%	0%	
SI	85%	15%	0%	
SE	86%	14%	0%	
IT	86%	14%	0%	
FR	87%	13%	0%	
HR	89%	11%	0%	
LV	91%	9%	0%	
PT	91%	9%	0%	
BG	91%	9%	0%	
RO	92%	8%	0%	2021-2023
SK	93%	7%	0%	
ES	94%	6%	0%	
NO	94%	6%	0%	
EL	95%	5%	0%	2021-2023
EU 27	**80%**	**20%**	**0%**	

Fig. 12 Proportion (%) of electric bicycle user road deaths and conventional bicycle user road deaths by gender. Average years 2022-2024 (or last tree years available)

		MALE	FEMALE	UNKNOWN	Years
AT	Electric bicycles	84%	16%	0%	
	Conventional bicycles	67%	33%	0%	
BE	Electric bicycles	70%	30%	0%	
	Conventional bicycles	78%	20%	1%	
CH	Electric bicycles	68%	32%	0%	
	Conventional bicycles	82%	18%	0%	
CZ	Electric bicycles	81%	19%	0%	2023-2024
	Conventional bicycles	80%	20%	0%	2023-2024
DE	Electric bicycles	78%	22%	0%	
	Conventional bicycles	77%	23%	0%	
DK	Electric bicycles	68%	32%	0%	
	Conventional bicycles	83%	17%	0%	
FR	Electric bicycles	77%	23%	0%	
	Conventional bicycles	88%	12%	0%	
IT	Electric bicycles	88%	12%	0%	
	Conventional bicycles	86%	14%	0%	
NL	Electric bicycles	64%	36%	0%	
	Conventional bicycles	67%	33%	0%	

Table 8 (Fig. 15) Total number of convetional bicycle and electric bicycle users seriously injured over the period 2014-2024

Convetional bicycles

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AT	1,673	1,674	1,730	1,826	1,649	1,544	1,713	1,559	1,573	1,476	1,685
BE	1,038	831	806	724	747	709	732	681	684	614	505
BG	102	111	111	86	108	87	77	61	83	87	91
CY	18	12	10	15	14	4	8	16	9	5	9
CZ	424	384	406	344	380	297	267	222	268	208	169
DE	14,997	14,688	14,915	14,610	16,005	15,577	17,471	15,328	12,803	11,267	10,326
DK	487	494	462	447	526	499	449	445	417	457	377
EE	43*	33	38	58	55	54	74	55	53	76	55
ES[1]	6,557	6,925	7,371	7,769	7,253	7,439	7,279	7,803	7,744	7,513	7,617
FI	58	53	54	40	56	34	59	38	42	26	35*
FR	2,107	2,095	2,166	2,259	2,302	2,314	2,314	2,709	2,628	2,543	2,577
EL	18	22	22	14	9	17	12	14	17	11	14*
HR	378	367	335	297	281	270	311	304	335	357	335
HU	1,154	1,100	1,122	1,070	1,052	1,027	904	773	832	934	734
IE	106	152	146	190	260	306	264	307	260	213	189
IT[1]	16,994	16,454	16,413	16,528	15,868	16,371	12,942	15,386	15,598	14,665	14,839
LU	12	15	22	22	14	22	35	24	21	34	36
LV	34	31	39	32	67	43	54	41	44	38	42
LT[1]	311	254	161	283	289	301	325	284	309	320	302
MT[1]	39*	39	35	44	29	19	45	38	48	26	37*
NL[2]	3,650	3,590	3,710	3,800	3,950	3,910	3,690	3,880	4,480	4,100	4,360
PL	1,399	1,341	1,488	1,214	1,442	1,371	1,242	1,108	1,132	1,063	1,161
PT	103	125	103	113	99	97	104	121	105	124	93
RO[1]	2,637	3,388	3,692	3,709	3,914	4,289	3,577	3,494	3,902	4,201	3866*
SE	2,147	1,735	1,875	1,892	1,784	1,750	1,732	2,111	2,762	2,619	3,020
SI	199	224	179	196	189	202	212	231	239	238	239
SK[1]	552*	573*	543	541	635	574	549	539	516	514	599
UK	4,977	4,570	4,379	4,364	4,349	4,210	4,300	4,333	4,105	4,002	3,885
GB	4,918	4,530	4,318	4,314	4,303	4,153	4,255	4,269	4,032	3,929	3,822
CH	890	838	854	818	877	802	934	819	769	733	633
NO	74	88	86	85	68	62	79	71	55	40	64
RS	455	413	444	430	417	404	403	410	379	426	427
EU 21	**30,147**	**29,077**	**29,739**	**29,249**	**30,989**	**30,134**	**31,724**	**30,028**	**28,787**	**26,490**	**26,052**

Source: CARE database and national statistics provided by PIN Panellists in each country
For countries where no distinction is made between conventional bicycles and electric bicycles, the table conventional bicycles include deaths for both categories
EU21: EU 27 minus ES, IT, LT, MT, RO, SK.
[1]all cyclist injuries
[2]MAIS3+

Table 8 (Fig. 15) Total number of convetional bicycle and electric bicycle users seriously injured over the period 2014-2024

Electric bicycles

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
AT					328	460	582	715	909	708	762
BE	4	81	136	132	194	244	280	312	443	465	413
BG											
CY											
CZ										58	71
DE									5,220	4,982	5,312
DK	17	18	35	28	53	67	57	90	86	109	117
EE											
ES[1]											74
FI										24	
FR							281	448	565	651	
EL											
HR											
HU											95
IE							4	7	14	19	23
IT[1]							235	671	1,077	1,367	1,724
LU								10	20	14	
LV											
LT[1]				1	1	2	9	10	18	15	30
MT[1]											
NL[2]	0	150	260	310	420	540	620	770	1,030	840	950
PL											
PT											
RO[1]											
SE											
SI							1	2	16	12	18
SK[1]											
UK											
GB											
CH	106	130	149	171	225	279	409	435	437	484	427
NO	0	0	1	3	0	2	5	4	0	3	0
RS											
EU 21	**21**	**249**	**431**	**470**	**995**	**1,311**	**1,825**	**2,354**	**8,303**	**7,882**	**7,761**

Source: CARE database and national statistics provided by PIN Panellists in each country
For countries where no distinction is made between conventional bicycles and electric bicycles, the table conventional bicycles include deaths for both categories
EU21: EU 27 minus ES, IT, LT, MT, RO, SK.
[1]all cyclist injuries
[2]MAIS3+

Fig. 15 Average annual change in reported cyclist serious injuries over the period 2014-2024		
CY	-6.8%	
CZ	-6.0%	
EL	-4.9%	2014-2023
NO	-4.5%	
HU	-3.6%	
BG	-3.1%	
PL	-2.7%	
FI	-2.4%	2014-2023
GB	-1.9%	
UK	-1.8%	
MT	-0.9%	2015-2023, all injuries
RS	-0.7%	
HR	-0.5%	
SK	-0.4%	2016-2024, all injuries
IT	-0.4%	all injuries
PT	-0.3%	
DK	0.4%	
BE	0.9%	
ES	1.2%	all injuries
DE	1.2%	
CH	2.3%	
LV	2.3%	
SI	3.0%	
RO	3.0%	2014-2023, all injuries
LT	3.5%	all injuries
NL	3.9%	
AT	4.3%	
FR	4.3%	
SE	4.4%	
EE	5.8%	2015-2024
IE	7.6%	
LU	13.4%	
EU 21	**1.9%**	

Fig. 16 Average annual change in hte number of reported electric bicycle user serious injuries compared to the average annual change in the number of conventional bicycle user serious injuries over the period 2014-2024			
	Electric bicycles	Conventional bicycles	Years
AT	14.7%	-0.4%	2018-2024
CH	17.7%	-2.2%	
NL	22.0%	1.9%	2015-2024
DK	22.1%	-1.9%	
FR	31.7%	2.6%	2020-2023
BE	38.5%	-4.8%	
IE	56.8%	-9.8%	2020-2024
IT	60.0%	2.3%	2020-2024, all injuries
LT	68.9%	1.1%	2017-2024, all injuries
SI	113.2%	2.7%	2020-2024

Table 9 (Fig. 17) Total number of cyclists seriously injured by age groups over the period 2022-2024 or last three years available

	Fig. 17 Proportion (%) of cyclist seriously injured by age group. Average of the years 2022-2024 (or last three years available)							
	0-14	15-29	30-49	50-64	65-79	80+	Unknown	Years
MT	14%	26%	38%	18%	4%	0%	0%	2021-2023, all injuries
IE	6%	23%	37%	26%	7%	0%	0%	
UK	7%	24%	35%	24%	8%	1%	1%	
ES	4%	20%	35%	25%	10%	1%	4%	all injuries
EL	10%	24%	21%	26%	10%	5%	5%	2021-2023
LT	16%	22%	27%	18%	12%	4%	0%	all injuries
SE	14%	18%	26%	24%	13%	4%	0%	
RO	16%	17%	26%	24%	14%	2%	0%	2021-2023, all injuries
LV	14%	13%	23%	33%	10%	6%	0%	
PT	7%	15%	35%	24%	14%	3%	0%	
DE	10%	20%	25%	25%	14%	5%	0%	2021-2023
IT	5%	22%	29%	25%	14%	5%	0%	all injuries
BG	13%	11%	28%	27%	17%	3%	0%	
EE	19%	11%	22%	27%	18%	3%	0%	
DK	5%	22%	24%	28%	17%	5%	0%	
SK	12%	10%	29%	25%	20%	3%	0%	
FR	7%	20%	25%	25%	19%	4%	0%	all injuries
NO	9%	7%	28%	31%	21%	3%	0%	
PL	7%	13%	31%	24%	22%	3%	0%	
CH	3%	12%	27%	32%	21%	5%	0%	
NL	10%	21%	19%	23%	20%	6%	0%	2021-2023
RS	11%	16%	22%	24%	23%	3%	0%	
AT	4%	11%	24%	34%	21%	6%	0%	
HR	8%	14%	24%	28%	24%	3%	0%	
CZ	5%	9%	32%	26%	25%	3%	1%	
BE	4%	13%	25%	29%	21%	7%	0%	
SI	4%	8%	18%	40%	25%	4%	0%	
HU	3%	10%	25%	32%	25%	4%	0%	
FI	18%	11%	13%	9%	34%	15%	0%	2021-2023
EU 21	**7%**	**15%**	**22%**	**26%**	**22%**	**7%**	**0%**	**2021-2023**

Table 10 (Fig. 18 and 19) Total number of convetional bicycle and electric bicycle users seriously injured by gender over the period 2022-2024 or last three years available

	Fig. 18 Proportion (%) of cyclists seriously injured by gender. Average years 2022-2024 (or last three years available)			
	MALE	FEMALE	UNKNOWN	Years
DK	56%	44%	0%	
NL	56%	44%	0%	
HU	58%	42%	0%	
SE	58%	42%	0%	
AT	61%	39%	0%	
DE	62%	38%	0%	2021-2023
BE	63%	37%	1%	
EE	63%	32%	5%	
RS	64%	36%	0%	
CH	65%	35%	0%	
SI	65%	35%	0%	
PL	67%	33%	0%	
LV	67%	33%	0%	
CZ	69%	30%	0%	
FI	70%	30%	0%	2021-2023
HR	71%	29%	0%	
NO	71%	29%	0%	
SK	71%	29%	0%	all injuries
EL	71%	29%	0%	2021-2023
LT	72%	27%	0%	all injuries
IT	74%	26%	0%	all injuries
IE	78%	22%	0%	
CY	78%	22%	0%	
LU	79%	21%	0%	
ES	80%	19%	1%	all injuries
FR	80%	20%	0%	
UK	82%	18%	0%	
RO	84%	16%	0%	2021-2023, all injuries
MT	86%	14%	0%	2021-2023, all injuries
BG	87%	13%	0%	
PT	89%	11%	0%	
EU 21	**63%**	**37%**	**0%**	**2021-2023**

Table 10 (Fig. 18 and 19) Total number of convetional bicycle and electric bicycle users seriously injured by gender over the period 2022-2024 or last three years available

		Fig. 19 Proportion (%) of electric bicycle user seriously injured and conventional bicycle users seriously injured by gender. Average years 2022-2024 (or last three years available)			
		MALE	FEMALE	UNKNOWN	Years
AT	Electric bicycles	58%	42%	0%	
	Conventional bicycles	63%	37%	0%	
BE	Electric bicycles	51%	49%	0%	
	Conventional bicycles	71%	28%	1%	
CH	Electric bicycles	54%	46%	0%	
	Conventional bicycles	71%	29%	0%	
CZ	Electric bicycles	73%	27%	0%	2023-2024
	Conventional bicycles	70%	30%	0%	2023-2024
DE	Electric bicycles	58%	42%	0%	2021-2023
	Conventional bicycles	63%	37%	0%	2021-2023
DK	Electric bicycles	45%	55%	0%	
	Conventional bicycles	58%	42%	0%	
FR	Electric bicycles	61%	39%	0%	2021-2023
	Conventional bicycles	84%	16%	0%	2021-2023
IE	Electric bicycles	75%	25%	0%	
	Conventional bicycles	78%	21%	0%	
IT	Electric bicycles	76%	24%	0%	all injuries
	Conventional bicycles	74%	26%	0%	all injuries
LT	Electric bicycles	83%	16%	2%	all injuries
	Conventional bicycles	72%	28%	0%	all injuries
LU	Electric bicycles	35%	65%	0%	
	Conventional bicycles	87%	13%	0%	
NL	Electric bicycles	48%	52%	0%	2021-2023
	Conventional bicycles	58%	42%	0%	2021-2023
NO	Electric bicycles	67%	33%	0%	
	Conventional bicycles	71%	29%	0%	
SI	Electric bicycles	70%	30%	0%	
	Conventional bicycles	64%	36%	0%	

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