International Transport Forum | irtad Road Safety Data


# SWITZERLAND



OECD

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*Switzerland recorded 227 road fatalities in 2020, representing a 21.4% year-on-year increase. The recent proliferation of e-bikes, especially after the Covid-19 pandemic, has caused safety concerns in Switzerland. Since 2021, motorbike licencing has changed so that it is no longer possible to start directly with a heavy motorbike. Therefore, many people acquired a licence in 2020 and this influences the results of two-wheelers in 2020. In 2016, the Swiss Federal Roads Office (FEDRO) published its strategy setting targets on fatalities and seriously injured by 2030. The sub-strategy on road safety, published in 2020, specifies the need for action and concrete measures.*

## Road safety management and strategy

Road fatalities peaked in 1971 when 1 720 people died on the roads. Between 1971 and 1996, the number of fatalities significantly diminished. The average annual reduction from 1971 to 1976 was 7.5%, and then 3% until 1996. Between 1997 and 2000, casualties stabilised at around 600 per year. From 2004 to 2006, the rate of decrease significantly accelerated. In 2020, Switzerland experienced a 21.4% increase in fatalities compared to 2019. Recent figures show a downward trend in the numbers of those seriously injured following years of little change. Over the last 15 years, several important safety measures have been implemented in Switzerland, including the following:

- In 2005, the legal BAC limit was lowered to 0.5 g/l. At the same time, police were authorised to check for alcohol without suspicion.
- In 2005, the jurisdiction for licence withdrawal was strengthened and a new two-stage driver's training was introduced.
- From 2013 to 2015, the first measures of the road safety programme Via Sicura came into force, including mandatory daytime running lights for motor vehicles, a zero blood alcohol limit for novice and professional (bus and truck) drivers, and

**Switzerland: Quick facts**

**Population:** 8.6 million
**GDP per capita:** USD 86 912
**Road network:** 83 274 km
- motorways: 2%

**Registered motor vehicles:** 6.5 million
- cars: 72%
- goods vehicles: 7%
- motorcycles: 12%

**Speed limits:**
- urban roads: 50 km/h
- rural roads: 80 km/h
- motorways: 120 km/h

**Limits on Blood Alcohol Content:**
- general drivers: 0.5 g/l
- professional drivers: 0.0 g/l
- novice drivers: 0.0 g/l

**Road fatalities:** 227
- pedestrians: 17%
- cyclists: 19%
- car occupants: 31%
- motorcyclists: 28%
- other: 6%

**Road fatalities per 100 000 population:** 2.6
**Road fatalities per 10 000 vehicles:** 0.4
**Cost of road crashes:** 2.3% of GDP (2018)

All data 2020 unless otherwise stated.

tightened sanctions for excessive speeding (up to lifelong licence withdrawal and seizure of motor vehicles).

Responsibility for the organisation of road safety in Switzerland lies with several agencies. Due to Swiss federalism, many organisations are involved in and responsible for road safety, including local and cantonal authorities, special interest groups and insurance companies. The three main road safety organisations are: the Fund for Road Safety, Swiss Council for Accident Prevention (BFU) and Federal Roads Office (FEDRO). The Swiss Federal Council regulates the national road safety policy and is responsible for the Via Sicura road safety programme.

Switzerland's road safety action programme Via Sicura was adopted on 15 June 2012 by the Swiss Federal Council. A range of safety measures has been progressively implemented since 2013. No quantitative target was set under the Via Sicura programme. In its strategy, FEDRO has set a target of no more than 100 deaths and 2 500 serious injuries per year by 2030. It also set a further target of no more than 25 fatalities and 500 seriously injured among non-motorised road users per year by 2030.

An evaluation of Via Sicura was completed in 2017. The assessment concluded that three years after the first measures entered into force, Via Sicura had positively impacted road safety. Four measures, in particular, contributed towards this positive result: a ban on alcohol for new and professional drivers, the compulsory use of lights during daytime for motor vehicles, legislation governing extreme speeding offenders and specific infrastructure measures implemented in 2016. As part of Via Sicura, the Swiss Federal Council was planning mandatory driver training from 2021 onwards for people who have had their driving licence suspended. The implementation of this measure is postponed.

## Latest road safety measures

FEDRO established a target of no more than 100 deaths and 2 500 serious injuries per year by 2030 as well as no more than 25 fatalities and 500 serious injuries among non-motorised road users per year by 2030.

Since January 2013, several measures have come into force as part of the Swiss road safety programme Via Sicura.

Since 2013, driver's licences or provisional licences are revoked for a minimum of two years in cases of excessive speeding, reckless overtaking or participation in an authorised race with motor vehicles, and for ten years to life in the case of repeated offences.

As of 1 January 2014, novice drivers have been subject to a zero alcohol limit for their first three years. The same restriction applies to all professional drivers.

From 1 October 2016, a breath alcohol test can be used as evidence in court. A blood sample is no longer necessary even at high alcohol concentrations.

By the end of 2018, the Swiss Federal Council passed amendments on the regulation of driver's education. Among other things, drivers under 20 must have a provisiona licence for at least one year before obtaining the probationary driving licence. The amendment is

designed to improve the driving experience for young drivers. The amendments entered into force in 2021.

The Swiss Council for Accident Prevention has stepped up a campaign with interactive videos addressing the risks for novice drivers (in German, French and Italian; https://www.bfu.ch/de/ratgeber/du-entscheidest).

A new online database was activated in 2016 to evaluate infrastructure related to road safety measures. Local authorities record infrastructure measures (currently, they can choose between 28 measures such as roundabouts, traffic lights or zebra crossings) in a GIS-based system. Accident data were linked to more than 2 500 measures.

## Costs of road crashes

In 2018, the cost of road crashes was CHF 16.5 billion (2.4% of GDP). This estimate of the total economic burden is based on a willingness-to-pay approach. The estimate includes non-reported crashes.

## Safety performance indicators

### Speed

Inappropriate speed is one of the leading causes of road crashes. Speed was the main cause in about 18% of fatal crashes in 2020.

In 2020, 468 road users were seriously injured and 41 killed in road crashes where inappropriate speed was the main cause. Crashes related to speed most commonly affect passenger car occupants and motorcyclists, who make up 60% of those seriously injured and killed.

In 2020, inappropriate speed was the main cause of crashes with fatalities or serious injuries in 7% of the cases on urban roads with a speed limit of 30 km/h and 6% on urban roads with a speed limit of 50 km/h. On rural roads (excluding motorways) with a speed limit of 80 km/h, inappropriate speed was identified as the main cause of the accident with fatalities or serious injuries in 26% of the cases. On motorways, inappropriate speed was the main cause in 13% of the cases.

From 2011 to 2020, serious road crashes where speed was the main cause reduced by 20%. Despite this, speed continues to be the primary cause of an average of 0.8 death per week on Swiss roads.

### Drink-driving

Driving under the influence of alcohol is another major cause of road crashes in Switzerland, as in most IRTAD countries. In 2020, the influence of alcohol was the main

cause in 10% of fatal crashes, and about 425 road users were seriously or fatally injured in a crash where alcohol was the main cause. While the share of drivers under the influence of alcohol is not known, research results show the acceptance of drink driving in the general population is decreasing.

An alcohol crash is defined as a crash in which an active participant (driver, pedestrian, cyclist, etc.) has a BAC above the legal limit. In 2005, the maximum legal BAC was reduced from 0.8 g/l to 0.5 g/l, and random breath testing was introduced. As of 1 January 2014, novice drivers are subject to a zero alcohol limit for their first three years behind the wheel. The same restriction applies to all professional drivers. Since 1 October 2016, a breath alcohol test can also be used as evidence for a higher alcohol concentration than 0.8 g/l. Before then, a blood sample was required.

In 2020, passenger car occupants were the user group most affected by alcohol-related crashes, comprising 25% of serious injuries and 71% of those killed. Between 2016 and 2020, alcohol has been the main cause of 22% of night-time crashes during the week and 48% of the night-time crashes on weekends. The proportion of serious alcohol-related crashes are more common in Romandy (Francophone Switzerland) and Ticino (Italophone Switzerland) than in German-speaking regions.

From 2011 to 2020, serious road crashes where alcohol was the main cause reduced by 9%. While car occupants (-51%), motorcyclists (-28%) and pedestrians (-67%) experienced a decrease in serious injuries or fatalities with main cause alcohol, cyclists (+126%) and moped riders (+233%) experienced an increase. This increase is especially driven by the sharp increase in the use of pedelecs and motorised bicycles.

**Drugs and driving**

Drugs and driving is a worrying concern in Switzerland. In 2020, in five fatal crashes (2%), drugs (legal or otherwise) were the main cause of the crash. However, in official statistics, the consumption of drugs is probably underreported.

The drug limit is set at zero (zero tolerance) in Switzerland. The road traffic law specifies driving ability must be ensured. The use of any drugs that reduce driving ability is prohibited. In the case of some drugs, like cannabis or amphetamines, a positive test is proof of reduced driving ability and considered an offence. In the case of other drugs or medical substances, a three-pillar system is used: driving impairment is judged based

on findings of the police, the results of the examination by a physician and the chemical-toxological examination.

**Use of mobile phones while driving**

In Switzerland, the use of mobile phones for texting or without a hands-free set is subject to a fine of CHF 100. Although using mobile phones with hands-free sets is not prohibited, in several cases, the Swiss federal court has qualified such use as a situation that leads to impaired driving.

Distraction, for example, through smartphones, or lack of attention, was cited as the main cause of crashes in 12% of fatal crashes in 2020. Distraction is judged by the police on-site and includes distraction by passengers, animals, mobile phone use and car equipment handling, like air conditioning or a navigation system. In 31% of fatal road crashes in which distracted driving was cited as the primary cause, passenger car drivers were found to be the responsible party.

In 2020, the BFU carried out a survey on distracted driving for the first time. The results show that almost 30% of drivers are distracted while driving, most often by interaction with passengers and 5% by using a cell phone.

**Seat belt and helmet use**

Seat belt wearing has been compulsory in Switzerland since 1981 in front seats and from 1994 for rear seats. In 2019, 96% of drivers and 95% of front passengers wore seat belts. This contrasts sharply with the 77% of rear-seat passengers who wore their safety belts. The long-term trend shows a highly successful uptake of seat belt wearing in Switzerland, although additional preventative measures are needed to encourage seat belt use among rear-seat occupants.

For motorcyclists, helmet wearing is the most effective passive safety habit. In Switzerland, helmets have been compulsory for motorcyclists since 1981 and moped riders since 1990. In 2019, the helmet-wearing rates for these two groups were 100% and 96%, respectively.

Although no regulation exists regarding cyclist helmet usage, half of the Swiss cyclists (52%) wore a helmet on bike trips in 2019. Among infants and youths under 15, the wearing rate is 75%. The rate for people in the 15-29 age group is 35%, and for those above 30, it is 43%. The helmet wearing rate is strongly linked to the journey’s purpose among cyclists. For cyclists who ride for recreational purposes, it is 57%. For those who commute to school, it is 45% and 43% for those who commute to work. On the other hand, only 24% of those who ride to shop for groceries wear helmets.

In 2019, the helmet-wearing rate among riders of e-bikes with pedal assistance up to 25 km/h was 65% and 92% among those with pedal assistance up to 45 km/h. Wearing a helmet became compulsory for the latter category in July 2012.

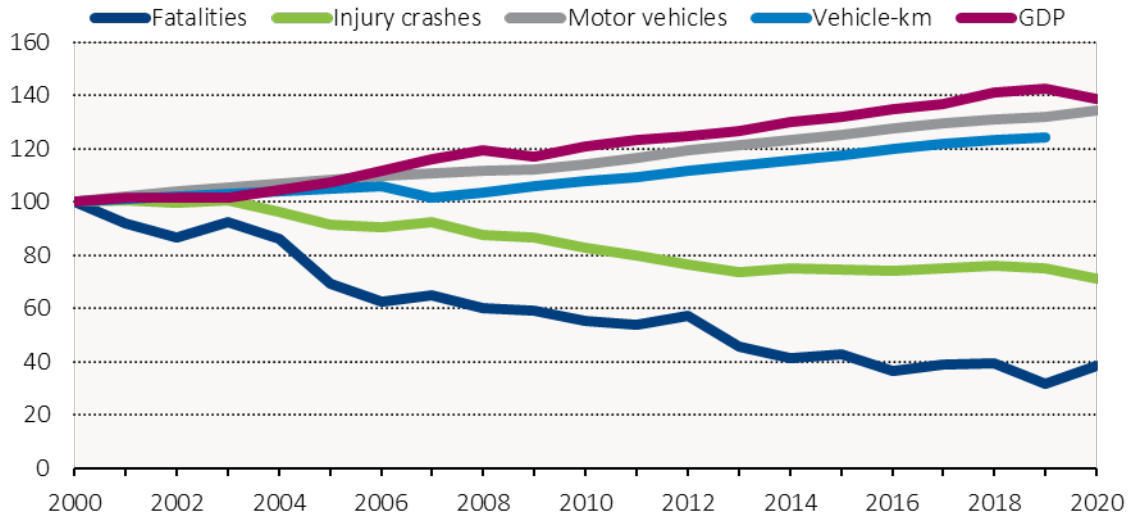
## Road safety data for Switzerland at a glance

### Long-term road safety trends for Switzerland

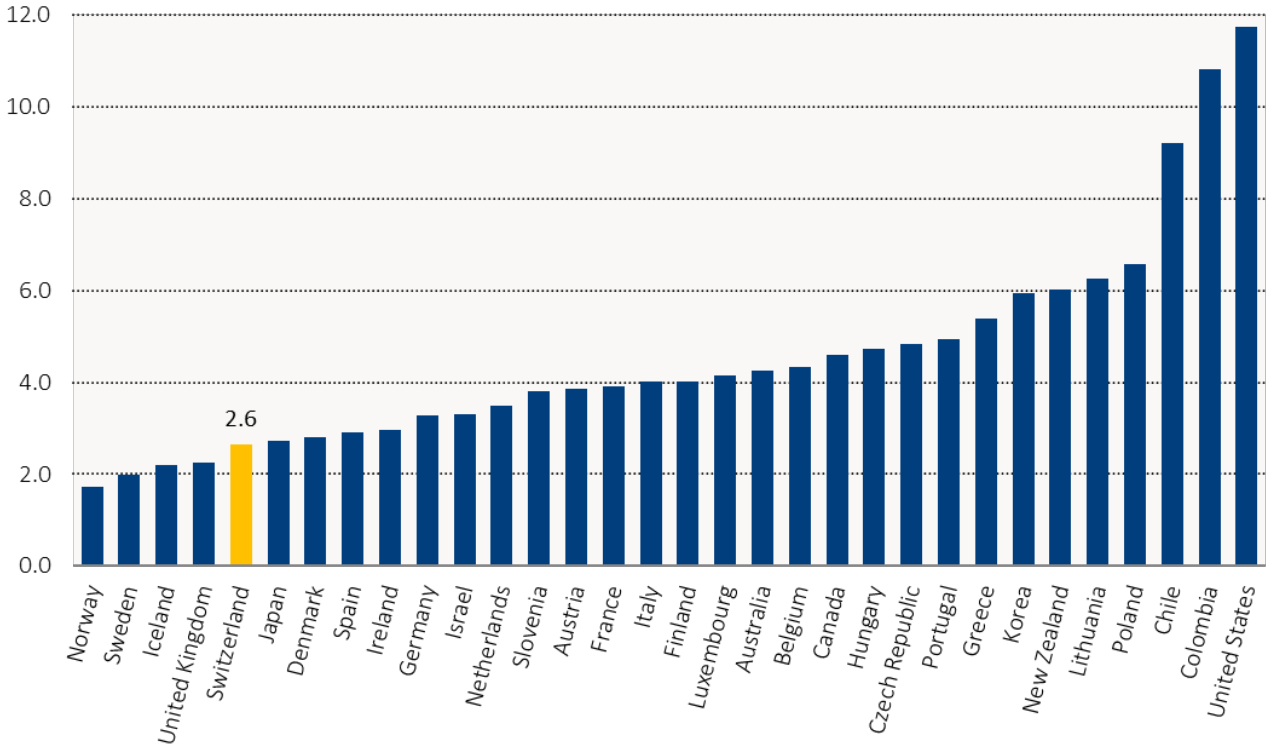
| | | | | | | | 2020 % change over | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1990 | 2000 | 2010 | 2018 | 2019 | 2020 | *2019* | *2010* | *2000* | *1990* |
| **Reported safety data** | | | | | | | | | | |
| Fatalities | 925 | 592 | 327 | 233 | 187 | 227 | 21.4 | -30.6 | -61.7 | -75.5 |
| Injury crashes | 23 834 | 23 737 | 19 609 | 18 033 | 17 761 | 16 897 | -4.9 | -13.8 | -28.8 | -29.1 |
| Deaths per 100 000 population | 13.9 | 8.3 | 4.2 | 2.7 | 2.2 | 2.6 | 20.5 | -37.2 | -68.1 | -81.0 |
| Deaths per 10 000 registered vehicles | 2.2 | 1.2 | 0.6 | 0.4 | 0.3 | 0.4 | 19.5 | -41.0 | -71.4 | -83.9 |
| Deaths per billion vehicle kilometres | 18.6 | 10.6 | 5.4 | 3.4 | 2.7 | .. | .. | .. | .. | .. |
| **Fatalities by road user** | | | | | | | | | | |
| Pedestrians | 167 | 130 | 75 | 48 | 37 | 38 | 2.7 | -49.3 | -70.8 | -77.2 |
| Cyclists | 58 | 48 | 34 | 38 | 26 | 42 | 61.5 | 23.5 | -12.5 | -27.6 |
| Moped riders | 49 | 19 | 4 | 6 | 6 | 8 | 33.3 | 100.0 | -57.9 | -83.7 |
| Motorcyclists | 155 | 92 | 67 | 44 | 33 | 55 | 66.7 | -17.9 | -40.2 | -64.5 |
| Passenger car occupants | 455 | 273 | 129 | 79 | 65 | 71 | 9.2 | -45.0 | -74.0 | -84.4 |
| Other road users | 41 | 30 | 18 | 18 | 20 | 13 | -35.0 | -27.8 | -56.7 | -68.3 |
| **Fatalities by age group** | | | | | | | | | | |
| 0-14 years | 47 | 28 | 8 | 11 | 4 | 4 | 0.0 | -50.0 | -85.7 | -91.5 |
| 15-17 years | 28 | 26 | 12 | 5 | 3 | 5 | 66.7 | -58.3 | -80.8 | -82.1 |
| 18-20 years | 93 | 42 | 21 | 3 | 6 | 9 | 50.0 | -57.1 | -78.6 | -90.3 |
| 21-24 years | 121 | 49 | 15 | 16 | 8 | 9 | 12.5 | -40.0 | -81.6 | -92.6 |
| 25-64 years | 438 | 285 | 170 | 105 | 91 | 103 | 13.2 | -39.4 | -63.9 | -76.5 |
| 65-74 years | .. | 56 | 38 | 32 | 29 | 28 | -3.4 | -26.3 | -50.0 | .. |
| ≥ 75 years | .. | 105 | 63 | 61 | 46 | 69 | 50.0 | 9.5 | -34.3 | .. |
| **Fatalities by road type** | | | | | | | | | | |
| Urban roads | 345 | 218 | 114 | 103 | 65 | 104 | 60.0 | -8.8 | -52.3 | -69.9 |
| Rural roads | 507 | 331 | 190 | 111 | 98 | 105 | 7.1 | -44.7 | -68.3 | -79.3 |
| Motorways | 73 | 43 | 23 | 19 | 24 | 18 | -25.0 | -21.7 | -58.1 | -75.3 |
| **Traffic data** | | | | | | | | | | |
| Vehicle kilometres (millions) | 49 624 | 55 686 | 60 064 | 68 650 | 69 299 | .. | .. | .. | .. | .. |
| Registered vehicles (thousands) | 4 242 | 4 822 | 5 500 | 6 315 | 6 372 | 6 470 | 1.5 | 17.6 | 34.2 | 52.5 |
| Registered vehicles per 1 000 population | 635.6 | 673.0 | 706.3 | 744.3 | 745.7 | 751.8 | 0.8 | 6.4 | 11.7 | 18.3 |

**Evolution of road fatalities, injury crashes, motorisation, traffic and GDP in Switzerland, 2000-20**

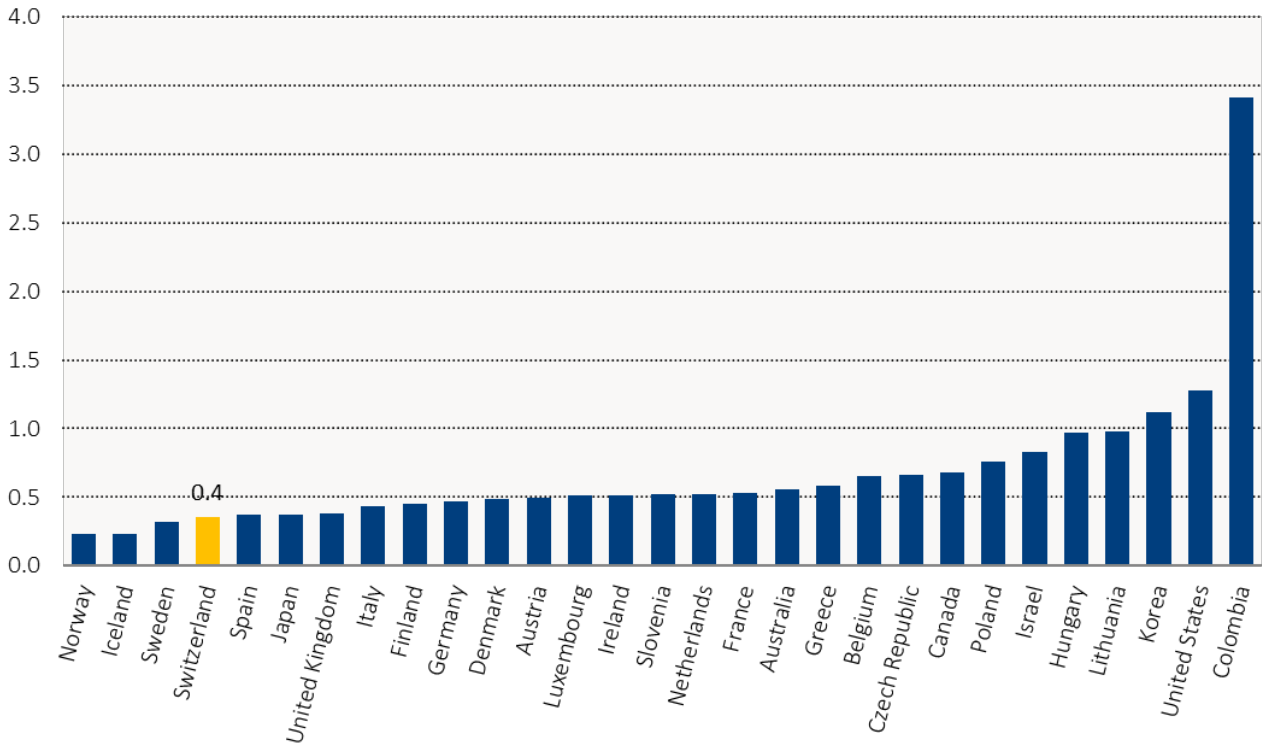
Index 2000 = 100




**Road fatalities per 100 000 inhabitants in Switzerland in comparison with IRTAD countries, 2020**

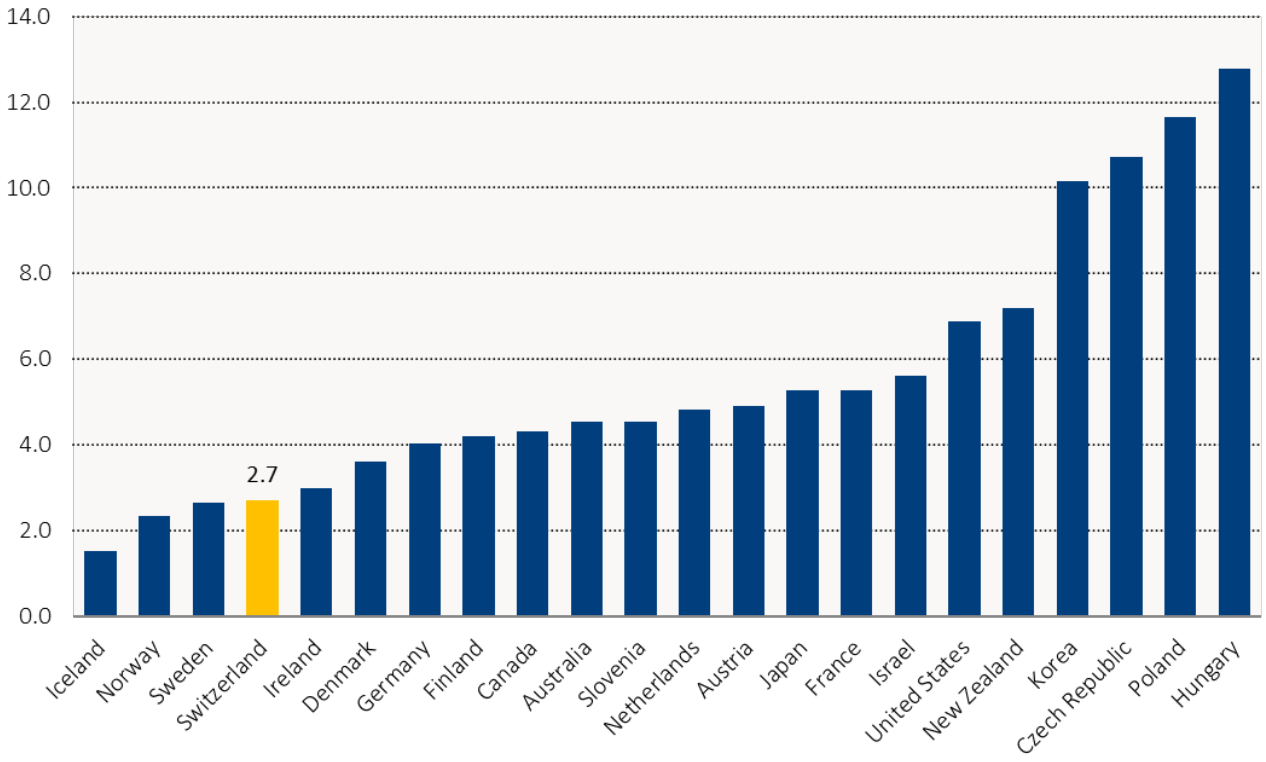


**Road fatalities per 10 000 vehicles in Switzerland in comparison with IRTAD countries, 2020**

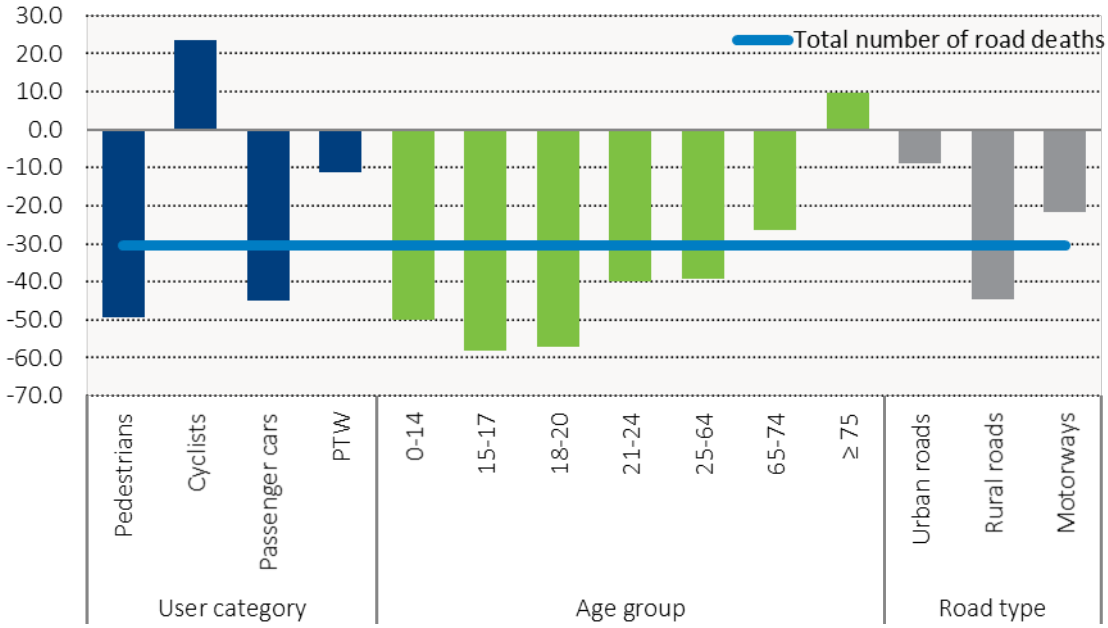



Note: in Belgium, Denmark, Germany and Hungary registered vehicles do not include mopeds.

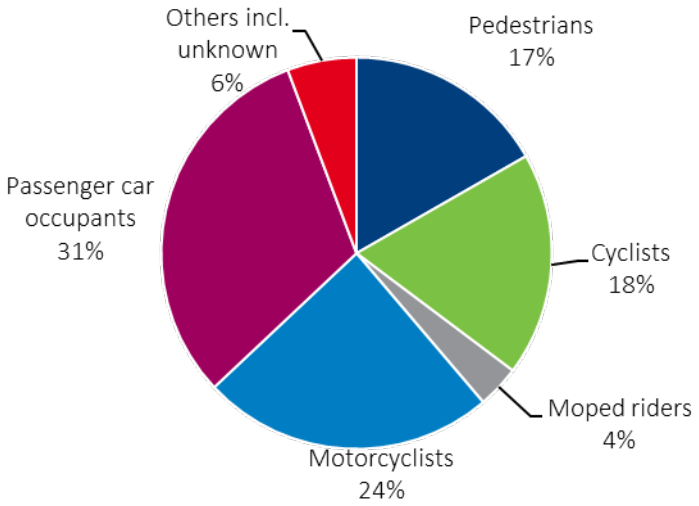
**Road fatalities per billion vehicle-kilometres in Switzerland in comparison with IRTAD countries, 2019**



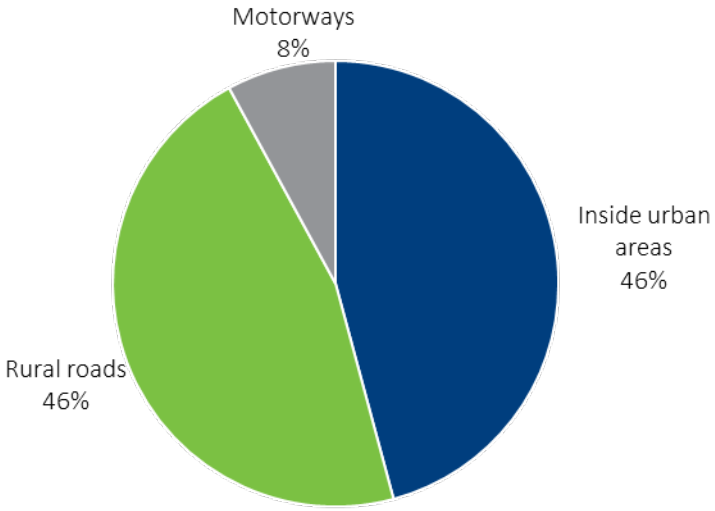

**Evolution of road fatalities in Switzerland by user category, age group and road type, 2010-20**



**Road fatalities in Switzerland by user category, 2020**

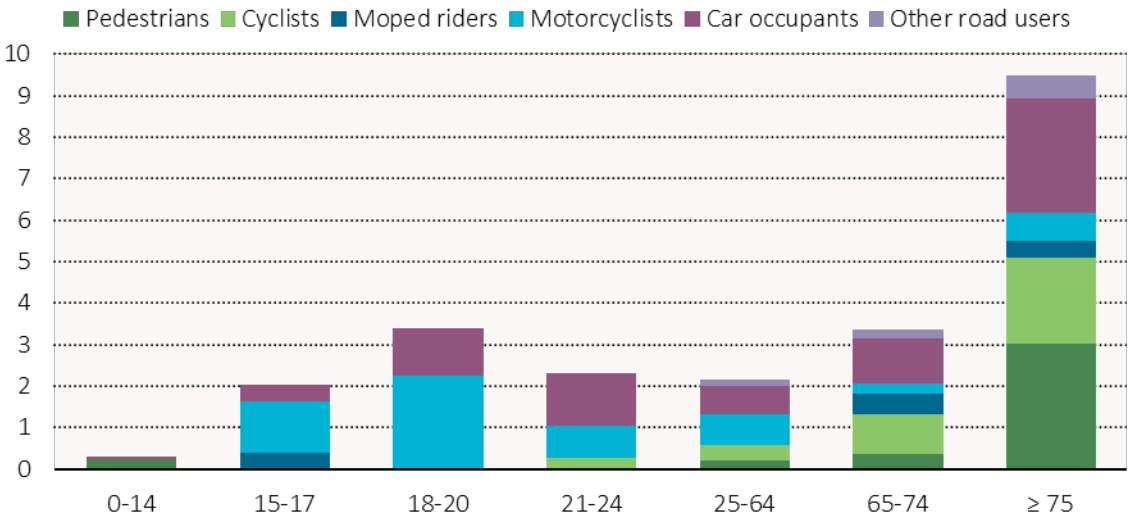



**Road fatalities in Switzerland by road type, 2020**



**Road fatality rate in Switzerland by user category and age group, 2020**

Rate per 100 000 population in the same age group




**Cost of road crashes in Switzerland, 2018**

| | Unit Cost (CHF) | Total (CHF) |
|---|---|---|
| Fatalities | 7.26 million | 1.5 billion |
| Seriously injured persons | 1.50 million | 8.0 billion |
| Slight injuries | 0.06 million | 4.6 billion |
| Property damage costs | | 2.3 billion |
| **Total** | | **16.5 billion** |
| **Total as % of GDP** | | **2.3** |

**Seat belt and helmet wearing rates**
Percentages

| | 2000 | 2010 | 2015 | 2019 |
|---|---|---|---|---|
| **Front seats** | | | | |
| Driver | 77 | 88 | 93 | 96 |
| Passenger | .. | 89 | 92 | 95 |
| **Rear seats** | | | | |
| General | 32 | 74 | 76 | 77 |
| **Helmet** | | | | |
| Moped riders | 73 | 89 | 93 | 94 |
| Motorcycles riders | 98 | 100 | 100 | 100 |
| Motorised two-wheelers riders | 98 | 100 | 100 | 100 |
| Cyclists | 20 | 37 | 47 | 52 |

# Research and resources

## Publications

Distraction in road traffic – pedestrians – Survey 2021, https://doi.org/10.13100/BFU.2.407.08.2021.

Distraction in road traffic – motorists – Survey 2021, https://doi.org/10.13100/BFU.2.408.08.2021.

Distraction in road traffic – cyclists and e-bike riders – Survey 2021, https://doi.org/10.13100/BFU.2.409.08.2021.

Seatbelt-wearing rates – Survey 2021, https://doi.org/10.13100/BFU.2.410.08.2021.

Use of personal protective equipment (PPE) in motorcycling – Survey 2021, https://doi.org/10.13100/BFU.2.411.08.2021.

Helmet-wearing rates among cyclists and e-bike riders in road traffic – Survey 2021, https://doi.org/10.13100/BFU.2.412.08.2021.

Road safety – attitude and behaviour of the Swiss population – Survey 2021, https://doi.org/10.13100/BFU.2.415.08.2021.

Analysis of the effect of anti-lock braking systems (ABS) on e-bikes (available in German), https://doi.org/10.13100/BFU.2.418.01.2022.

Road Safety Barometer 2021 (available in German, French and Italian), https://doi.org/10.13100/BFU.2.404.01.2021.

Speed controls – recommendations from prevention (available in German), https://doi.org/10.13100/BFU.2.401.01.2021.

Substance testing of motor vehicle drivers - recommendations from prevention (available in German), https://doi.org/10.13100/BFU.2.402.01.

SINUS Report 2021 (available in German, French and Italian), https://doi.org/10.13100/BFU.2.399.01.2021.

Evaluation of Via Sicura, a report of the Swiss Federal Council (available in German and French with Italian and English summaries): https://www.astra.admin.ch/astra/de/home/themen/verkehrssicherheit/via-sicura.html.

Evaluation of Via Sicura, a technical Report (available in German with French, Italian and English summaries): https://www.astra.admin.ch/astra/de/home/themen/verkehrssicherheit/via-sicura.html.

Research package of road safety gains resulting from data pooling and structured data analysis; measures and potentials in the field of road infrastructure (VeSPA); 1st and 2nd project stages (reports in German with English, French and Italian summaries): https://www.astra.admin.ch/astra/de/home/dokumentation/daten-informationsprodukte/unfalldaten/publikationen/forschungspaket-vespa.html.

Statistical analysis of accident occurrences (summary also in French and English): https://www.astra.admin.ch/astra/de/home/dokumentation/daten-informationsprodukte/unfalldaten/publikationen/forschungsberichte.html.

**Websites**

Federal Roads Office (FEDRO/ASTRA): http://www.astra.admin.ch/.

Swiss Council for Accident Prevention (BFU): http://www.bfu.ch/.

Road accident data – statistics: http://www.unfalldaten.ch/.

Road accident data – geospatial data: http://map.unfalldaten.ch.

Road accident data – open government data: http://opendata.swiss.

## Definition, methodology, data collection

A road fatality is defined as a death occurring at the crash site or within 30 days of the road crash.

A seriously injured person is anyone with at least a serious and visible impairment that prevents normal activities (e.g. unconsciousness and open bone fractures). Inpatient medical care is necessary. To enable standardisation, the severity scale was linked to the National Advisory Committee for Aeronautics codes, used by all emergency services in Switzerland. A serious injury is either a significant (NACA codes 3 and 4) or a life threatening injury (NACA codes 5 and 6).

A slightly injured person is anyone with a minor injury, such as superficial skin injury without significant blood loss or a slight restriction of movement. The person can leave the crash site unaided. Outpatient treatment in a hospital or by physicians may still be required.

An injury crash is a crash resulting in at least one injured or killed person.

Since January 2011, the Federal Roads Office (FEDRO) has been responsible for all Swiss road crash data. A new reporting form was introduced to all cantonal police forces, and a new platform for data entry and analysis (statistical and geographical) is available online. Since 2018, a revised reporting form has been in force.

Police-reported data is compared to the Swiss Council for Accident Prevention insurance data to estimate the actual extent of road traffic injuries. Factors are then calculated to correct the number of unreported cases by road use and age group. These figures are mainly used to calculate the economic costs of road traffic crashes.

The Swiss Federal Roads Office carried out a research project to link police-reported data from a given year with other data sources, including hospital data, to better understand the consequences of road crashes. This has enabled coding of the recommended Maximum Abbreviated Injury Scale (MAIS) score based on the International Classification of Diseases (ICD-10). A yearly data linkage procedure is being implemented. The availability of data for several years will facilitate future research.

In Switzerland, injury severity is assessed by police present at the scene. Following the new definition of serious injury (divided into significant and life-threatening injuries), in force since January 2015, police officers have been trained to record injury severity based on the new classification.