



## ROAD SAFETY ANNUAL REPORT 2019

# JAPAN

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Japan recorded 4 166 road fatalities in 2018, representing a 6% decrease when compared to 2017. In 2018, Japan reached the lowest level of road mortality since systematic records began in 1948. A priority area is the provision of a safer road transport system for senior citizens – a group that suffers more than half of all road deaths in Japan. The 10<sup>th</sup> Traffic Safety Programme was launched in March 2016 and covers the period 2016-20. Improving the safety of pedestrians and cyclists, including among the senior population, is an important focus of the Programme. An evaluation of the current Programme is underway.

## Trends

Japan registered an overall **decrease in the number of road deaths in 2018**. According to the latest available data, 4 166 persons lost their lives in traffic crashes in Japan in 2018. This represents a 6% decline on 2017. In 2017 4 431 road deaths were reported - a 5.7% decline on 2016.

The **long-term trend for road deaths** in Japan has shown significant progress. Between 2000 and 2018, the number of annual road fatalities fell by 60%.

### Country Profile

**Population** in 2017: 126.7 million

**GDP per capita** in 2017: 38 356 USD

**Cost of road crashes:** 0.8% of GDP (2009)

**Road network:** 1.2 million kilometres (2017)

**Registered motor vehicles** in 2017: 91.4 million (cars 67%; goods vehicles 16%; motorised two-wheelers 12%)

**Volume of traffic** : -4.6% between 2000 and 2017

**Speed limits:** 40/50/60 km/h on urban roads; 50/60 km/h on rural roads; 100 km/h on motorways

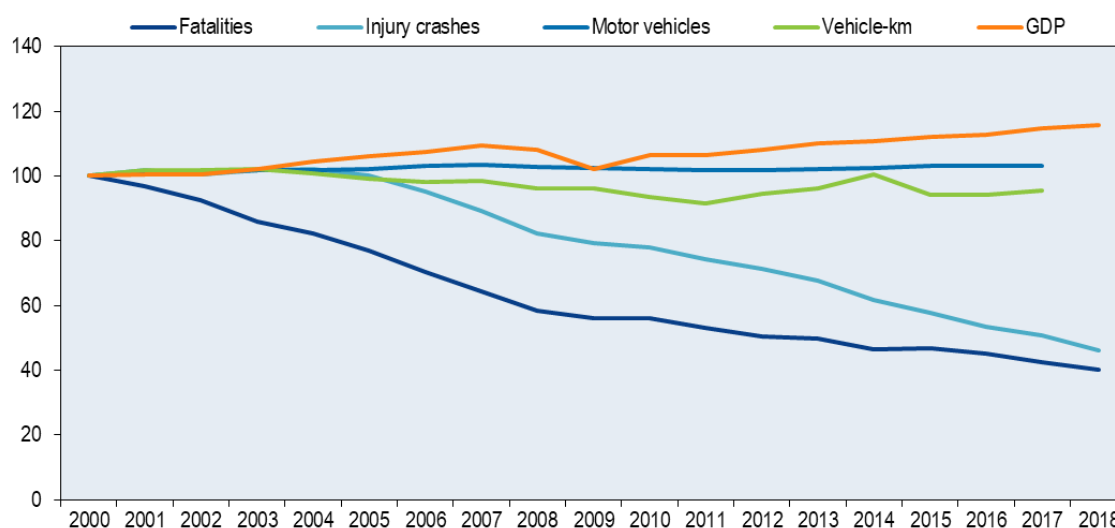
**Limits on Blood Alcohol Content:** 0.3 g/l

The number of **traffic deaths per 100 000 inhabitants** in Japan has fallen by 57% between 2000 and 2017. In 2017, 3.5 traffic deaths per 100 000 inhabitants were recorded compared to 13.4 in 2000. By way of comparison, the average in the European Union is 4.9 deaths per 100 000 inhabitants in 2018.

Measured as **traffic deaths per billion vehicle-kilometres** (vkm) driven, the fatality risk of Japan showed similar longer-term progress. In 2017, this metric stood at 6.0, 55% lower than in 2000.

Japan recorded 0.5 **road fatalities per 10 000 registered vehicles** in 2017. This represents a decrease of 59% compared to the year 2000, when the rate of deaths to registered vehicles stood at 1.2.

**Figure 1. Road safety, vehicle stock, traffic and GDP trends**  
Index 2000 = 100

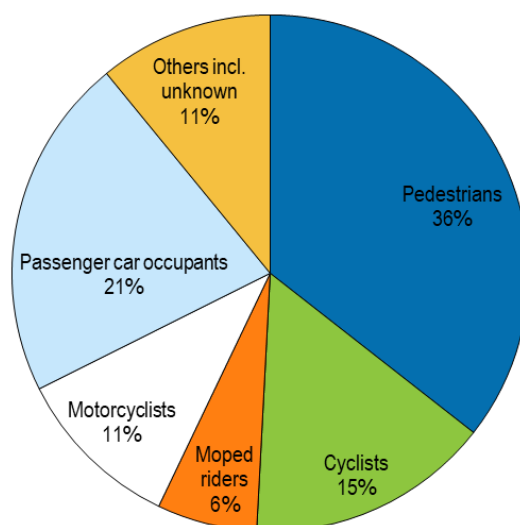


The picture for **fatalities by road user groups** shows that pedestrians constitute the group most affected by road crashes. In 2018, pedestrians accounted for the largest share of road deaths with 36% of the total. They were followed by passenger car occupants (21%), cyclists (15%), motorcyclists (11%) and moped riders (6%).

In 2018, 1 482 pedestrians were killed on Japanese roads. About 70% of all pedestrian fatal accidents in Japan occur while crossing the road, and a third of these crossing death accidents occur while using a pedestrian crossing.

The largest decrease in 2018 was registered among motorcyclists, who suffered 56 fewer fatalities (-11.3%) than in 2017. Likewise, pedestrians suffered 155 fewer deaths (-9.5%) compared to 2017. Cyclists and passenger car occupants registered smaller decreases of 5.9% and 3.7%, respectively, on 2017. On the contrary, moped riders were the sole road user group to see road fatalities increase in 2018, experiencing a sharp uptake of 34 more deaths (+15.0%) in 2018.

The long-term trend shows that traffic in Japan has become safer for all road user groups. Since 2000, road fatalities for each road user group have seen reductions of 50% or greater. The strongest decline was registered among moped riders, who registered 72% fewer road deaths in 2018 than in 2000. Passenger car occupants strongly benefitted from road safety improvements, as well, with a reduction of 69% over this period.

**Figure 2. Road fatalities by road user group in percentage of total, 2018**

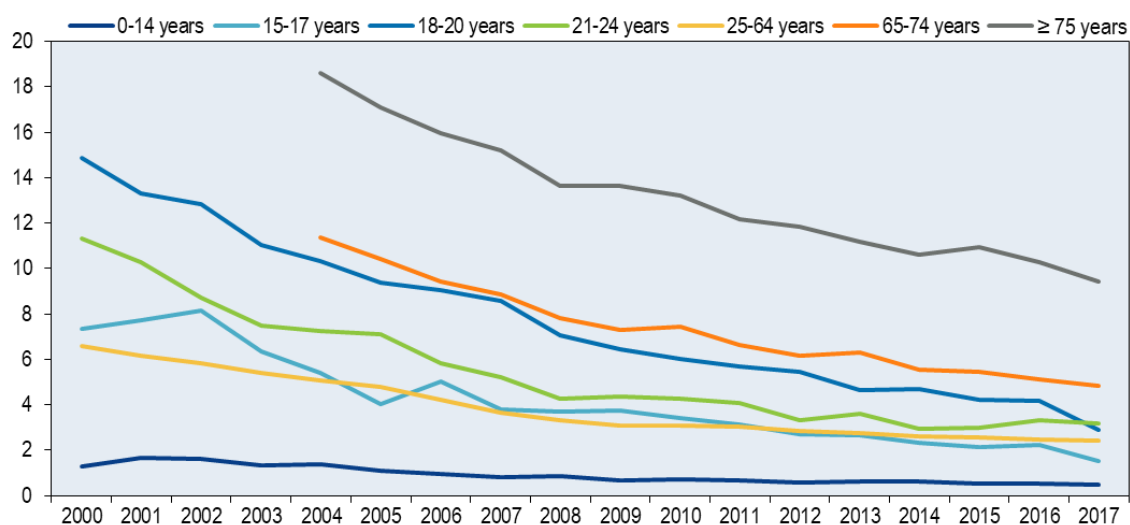
**Road deaths by age group** in 2018 showed some changes compared to 2017. Road deaths among 15-17 year olds and 18-20 year olds increased by 22.2% and 25.2%, respectively. Persons aged 21- 24 years old suffered 25.3% fewer road fatalities in 2018 than in the previous year.

In 2018, 2 386 elderly people died in road traffic crashes, accounting for 57% of all fatalities. Despite a downward trend of all traffic fatalities, the trend in traffic fatalities for elderly people aged 65 years and older tends to be flatter than other age groups as the population share of elderly people is increasing. However, the number of elderly deaths per 100 000 people continues to decline at the same rate as fatalities for all ages.

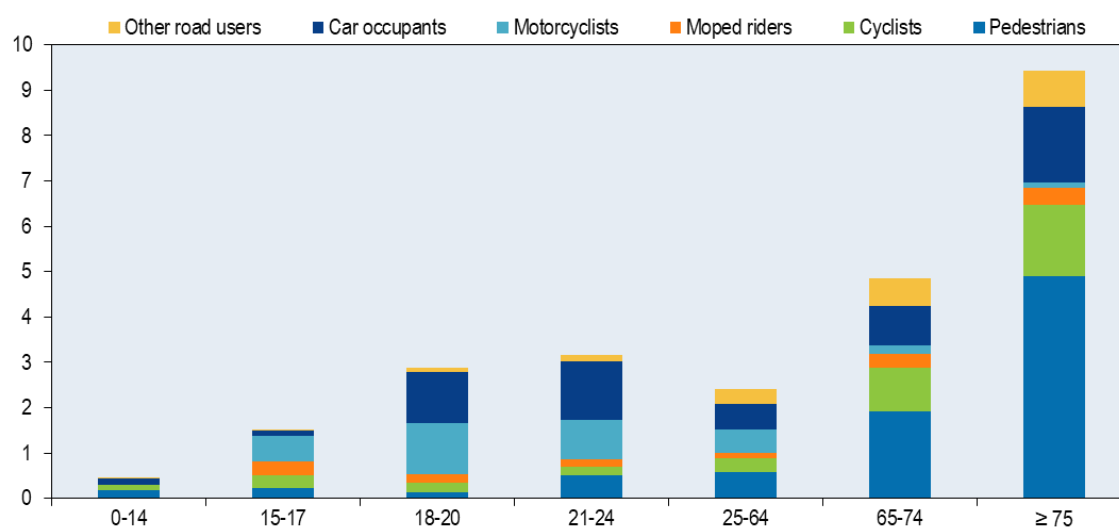
Elderly people are far and away the group at highest risk in Japanese road traffic; the risk is even greater for the 75+ age group. Road users above 75 years of age suffered fatalities at a rate of 9.4 per 100 000 persons in 2017. The national average was 3.5 per 100 000 in 2017.

The alarming rates of traffic fatalities among the elderly prompt concern for the future. As of 2013, 25% of Japan's population is above 65 years of age – the highest rate among all countries with available data (OECD, 2019a). As life expectancy continues to rise and fertility rates remain low – Japan recorded a calculated fertility rate of 1.4 in 2017 (a total fertility rate of 2.1 children per woman ensures a broadly stable population) – the elderly share of the population is projected to grow in the coming decades (OECD, 2019b).

**Figure 3. Road fatality rates by age group, 2000-2017**  
Deaths per 100 000 population in a given age group



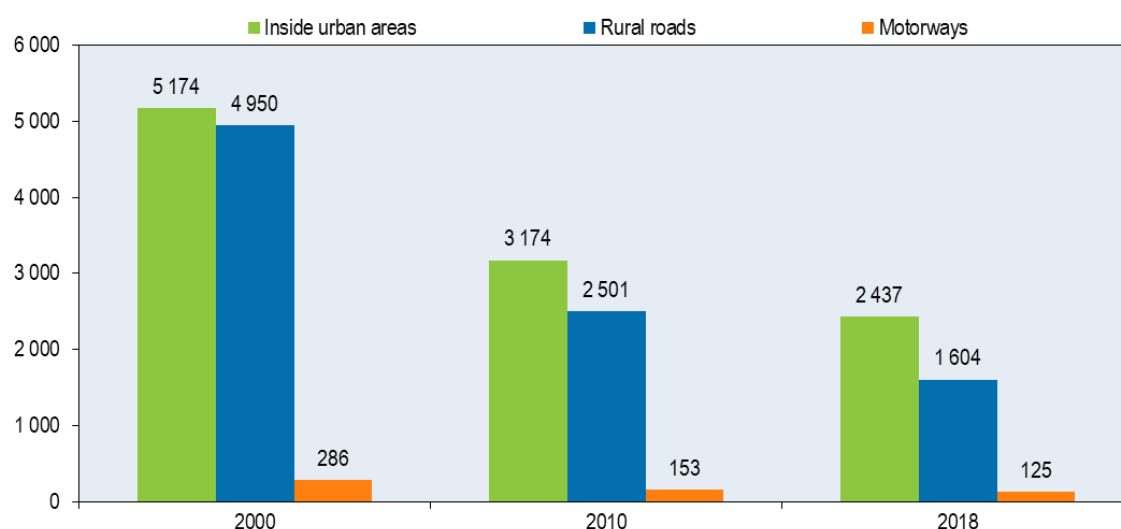
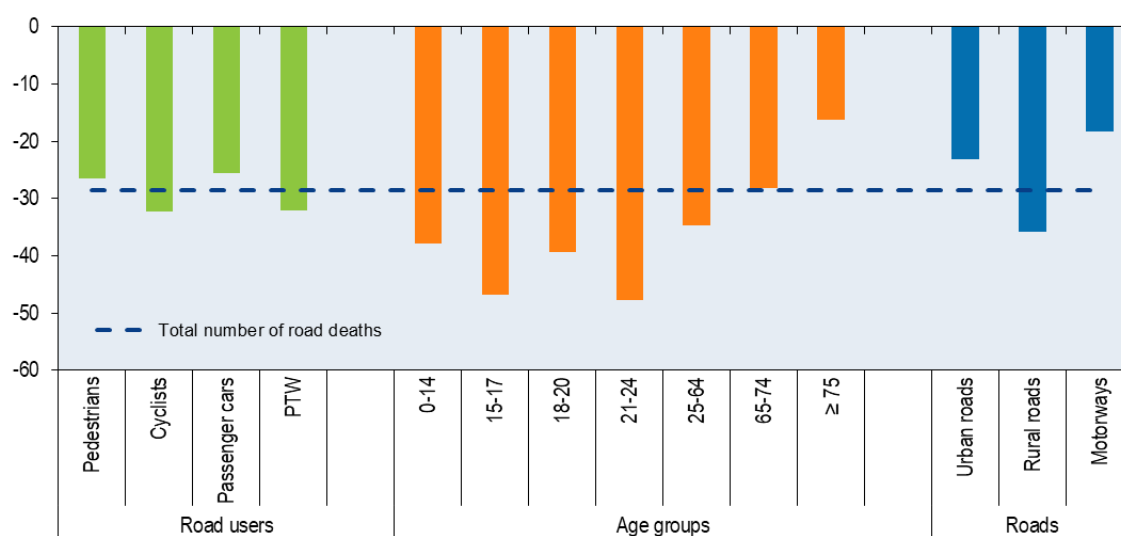
**Figure 4. Road fatality rate by age and road user group, 2017**  
Fatalities per 100 000 population



Analysis of **fatalities by road type** shows that the urban network claims the most victims in Japan. In 2018, 58% of deaths occurred on urban roads, 38% on rural roads and 3% on motorways. This repartition has remained relatively stable in recent years.

In 2018, in comparison to 2017, the number of road deaths decreased by 4.1% on urban roads, by 8.8% on rural roads and by 3.8% on motorways.

Since 2000, fatalities in urban areas decreased by 53%, on rural roads by 68% and 56% on motorways.

**Figure 5. Road fatalities by road type****Figure 6. Evolution of road deaths by user category, age group and road type, 2010-2018**

Fatality data are essential to understand road safety issues, but hardly sufficient. Information on **serious injuries from crashes** is also critically important. Available data suggest that the number of people seriously injured is decreasing at a slower pace than the number of road deaths. Between 1990 and 2018, the number of fatalities decreased by 71%, while the number of persons seriously injured only decreased by 56%.

## Economic costs of road crashes

According to the latest research published by the Cabinet Office in Japan, the economic loss due to traffic crashes in 2009 is estimated at JPY 3 979 billion, corresponding to 0.8%

of GDP. This estimate includes medical costs, lost profit, funeral costs, compensation expenses, property costs and other costs.

## Behaviour

The behaviour of road users is an important determinant of a country's road safety performance. **Inappropriate speed** in particular is one of the main causes of road crashes. In Japan, 3.4% of all road fatalities in 2018 were caused by a violation of the speed limit.

The table below summarises the main speed limits in Japan.

**Table 1. Passenger car speed limits by road type, 2019**

	General speed limit
Urban roads	40, 50, 60 km/h
Rural roads	50, 60 km/h
Motorways	100 km/h

**Driving under the influence of alcohol** is another cause of road crashes in Japan. In 2018, it was reported that 221 people (5.3% of all road deaths) were killed in an alcohol-related crash and that 0.8% of all crashes were due to a driver under the influence of alcohol.

The share of alcohol-related crashes decreased due to more severe sanctions and more frequent controls. However, in recent years, stagnation has been observed in the number of alcohol-related crashes.

In 2002, the maximum authorised blood alcohol content (BAC) level was lowered from 0.5 g/l to 0.3 g/l.

An increasing problem for traffic safety is **distraction**, for instance through the use of mobile phones while driving or crossing a street. In 2018, inattentiveness or distraction due to the use of mobile phones was identified as the primary cause in about 0.4% of all road traffic crashes. In Japan, it is forbidden to use a mobile phone, to make calls or to look at the screen while driving, except when the vehicle is stopped.

The share of **sleepiness and fatigue** as a causal factor in crashes is especially challenging to detect. Based on national traffic crash statistics produced by the National Police Agency, in 2018, 0.1% of all injury crashes and 0.8% of all road fatalities were caused by drowsiness in drivers. The actual number could however be higher.

**Seat-belt wearing** has been compulsory in front seats since 1985 and in rear seats since 2008. Children under six years old must be seated in a dedicated child restraint system. While the seat belt wearing rate is high for front seat occupants, it is low in rear

seats. In 2018, only 38% of rear seat passengers travelling on urban and rural roads and 74% of rear seat passengers travelling on motorways wore a seatbelt.

In 2018, 537 car occupants were fatally injured in a crash while not wearing a seatbelt.

**Table 2. Seat belt wearing rate by car occupancy and road type**  
Percentages

	2002	2010	2018
<b>Front seats</b>			
Driver	88	97	99
Passenger	75	92	96
Motorways (driver)	97	99	100
<b>Rear seats</b>			
General	7	33	38
Children (use of child restraint)	52	57	66

For motorcyclists, **helmet wearing** is the most effective passive safety habit. In Japan, helmets have been compulsory for users of all powered-two-wheelers on all road types since 1986.

There is no mandatory helmet use law for cyclists.

## Road safety management and strategies

There are several **factors of influence on Japan's road safety performance** as captured by the above indicators. From the early 1950s to around 1970, Japan suffered from a significant increase in the number of road traffic crash casualties. As a result, traffic safety emerged as an important social issue. In June 1970, the government of Japan enacted the Traffic Safety Policies Act with the aim of promoting traffic safety measures nationwide in a systematic manner. Under this act, the government coordinated with local governments and relevant private organisations to implement traffic safety measures. Since 2000, the number of road fatalities has decreased every year, until a small increase was observed in 2015. The improved safety record in the past decade is related to an increase in the seat belt wearing rate, progress in the safety of vehicles and continuous improvement of the traffic environment.

**Responsibility for the organisation of road safety** in Japan primarily lies with the National Police Agency. The National Police Agency and the prefectural police are charged with traffic enforcement, traffic regulation, safety facilities management, driver licence administration, etc. The Ministry of Land, Infrastructure, Transport and Tourism is in charge of building and maintaining safe road structures and road environments, and managing safety standards for vehicles. The Ministry of Education, Culture, Sports, Science and Technology is in charge of traffic safety education in schools, and traffic safety on the way to and from school. The Cabinet Office oversees the entirety of traffic safety measures in Japan.



**The 10<sup>th</sup> Traffic Safety Programme** was launched in March 2016 and covers the period 2016-20. It is based on two strategic objectives and eight pillars. The two strategic objectives are:

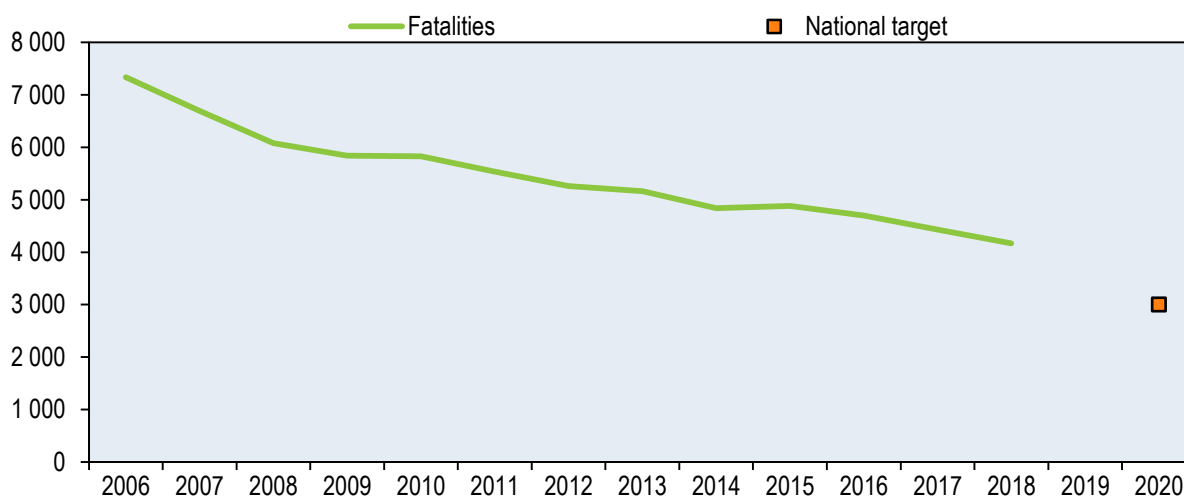
- reducing the consequences of crashes, in particular for the senior population and children, and for pedestrians and cyclists crash prevention, through the use of new technologies, in-depth analysis of traffic and crash data and the involvement of the community.

The eight pillars are:

- maintenance of the road environment
- dissemination and reinforcement of traffic safety messages
- safe driving
- vehicle safety
- enforcement
- an improved rescue and emergency medical system
- victim support, including an appropriate damage compensation system
- research and development.

The current plan includes the target of fewer than 2 500 deaths within 24 hours of a crash (equivalent to approximately 3 000 deaths within 30 days) and fewer than 500 000 casualties (people who were killed or injured in a traffic crash) by 2020. The ultimate goal is to make Japanese road traffic the safest in the world by 2020.

**Figure 7. Trends in road fatalities towards national target**



## Measures

Several measures to improve road safety management have recently been put into place.

### Road safety management

- The Public-Private ITS (Intelligent Transport Systems) Initiative/Roadmap 2019 was released in June 2019. The updated Roadmap emphasises the importance of co-operation between State Ministries, the public sector and the private sector to achieve the dual goals of building the safest traffic system in the world and maintain Japan's status as a leading innovator in the technology and automotive industries.
- The "Comprehensive Safety Plan for Business Vehicles 2020" released in June 2017 set a new goal for reducing the number of fatalities due to crashes with business vehicles to 235 or less and the number of accidents to 23 100 or less by 2032.
- The National Police Agency believes that the spread of automated driving (AD) technology will become essential in the future to reduce traffic crashes and to alleviate congestion. Therefore, the National Police Agency has established an environment for conducting public road tests for AD systems by preparing Guidelines and Criteria for public road testing of AD systems, and has newly established regulations concerning definitions of AD apparatus (SAE level 3), driver responsibilities when driving a motor vehicle employing AD apparatus, and recording by an Operation Status Recording Device (provisional name) by amending the Road Traffic Act in 2019.

### Road users

- Since March 2017, under the revised Road Traffic Act, drivers aged 75 and over who have committed certain traffic violations are required to take a cognitive test. Drivers suspected of having dementia must undergo a medical examination. Based on the results of this examination, their licence may be revoked.
- The 30 km/h zones, introduced in 2011 to ensure the safe passage of pedestrians and others using community roads in residential areas, are being continuously expanded.
- To reduce the risk of using mobile phones while driving, which is increasing due to the spread of smartphones, the National Police Agency has decided to significantly increase the fines and penalties for using mobile phones while driving since December 1st, 2019 by amending the Road Traffic Act and related government ordinances.

### Infrastructure

- Recent measure to improve infrastructure are focusing on the renewal of traffic lights, the installation of new traffic lights and the construction of roundabouts.
- The police are promoting the development and implementation of the Universal Traffic Management Systems (UTMS). UTMS is designed to create a safe, comfortable and

environmental-friendly motorised society, provide real time traffic information to road users and control traffic flow via infrared beacons (<http://www.utms.or.jp/english>). Since March 2017, traffic regulation and volume information owned by the police have been published on the website.

## Vehicles

- The government is promoting the development of “Safety Support Cars” equipped with an automatic brake and “Safety Support Car S” equipped with system to prevent sudden, unintended acceleration (which is an increased concern in Japan, especially among older drivers) in addition to an automatic brake.

## Post-crash response

- To improve post-crash response time and the application of life-saving medical treatment in the emergency site and on the way to hospital, the use of helicopters for emergency medical treatment is currently conducted based on the “Act on Special Measures Concerning Securing of Emergency Medical Care Using Helicopters for Emergency Medical Care” (Act No. 103 of 2007). As of March 2018, 42 doctor helicopters are deployed in 52 prefectures.

## Definition, methodology, data collection

- Road fatality: a person who dies within 24 hours of a crash or within 30 days of a crash. Two sets of records are kept. The data in this report and included in the International Road Traffic and Accident Database (IRTAD) use the 30-day definition.
- Serious injury: injury which requires medical treatment for 30 days or more.
- Slight injury: injury which requires medical treatment for less than 30 days.

There is no plan to adopt a definition of serious injuries based on the Abbreviated Injury Scale.

In Japan, road crash data are collected by the police. The National Police Agency has been collecting crash data since 1948. In 1966, an online database system was created and in 1993 the 30 day definition for a crash fatality was added.

Hospital data are not used to complete police data. They may be used on an ad hoc basis for research.

## Resources

### Websites

National Police Agency: <http://www.npa.go.jp/>

Institute for Traffic Accident Research and Analysis (ITARDA): <http://www.itarda.or.jp/>

National Research Institute of Police Science (NRIPS):  
<http://www.npa.go.jp/nrips/en/index.html>

White Paper on Traffic Safety in Japan 2018:  
[https://www8.cao.go.jp/koutu/taisaku/h30kou\\_haku/english/wp2018-pdf.html](https://www8.cao.go.jp/koutu/taisaku/h30kou_haku/english/wp2018-pdf.html)

Public-Private ITS Initiative/Roadmaps 2018:  
[https://japan.kantei.go.jp/policy/it/2018/2018\\_roadmaps.pdf](https://japan.kantei.go.jp/policy/it/2018/2018_roadmaps.pdf)

## References

OECD (2019a), *Elderly population (indicator)*, doi: <https://doi.org/10.1787/8d805ea1-en>

OECD (2019b), *Fertility rate (indicator)*, doi: <https://doi.org/10.1787/8272fb01-en>

## Road safety and traffic data

	1990	2000	2010	2016	2017	2018	2018 % change over			
							2017	2010	2000	1990
Reported safety data										
Fatalities	14 595	10 410	5 828	4 698	4 431	4 166	-6.0%	-28.5%	-60.0%	-71.5%
Injury crashes	643 097	931 950	725 924	499 201	472 165	430 601	-8.8%	-40.7%	-53.8%	-33.0%
Deaths per 100,000 population	11.8	8.2	4.6	3.7	3.5	..	..	..	..	
Deaths per 10,000 registered vehicles	1.9	1.2	0.6	0.5	0.5	..	..	..	..	..
Deaths per billion vehicle kilometres	23.2	13.4	8.0	6.4	6.0	..	..	..	..	..
Fatalities by road user										
Pedestrians	3 955	2 955	2 016	1 644	1 637	1 482	-9.5%	-26.5%	-49.8%	-62.5%
Cyclists	1 509	1 278	938	712	676	636	-5.9%	-32.2%	-50.2%	-57.9%
Moped riders	1 320	944	459	294	227	261	15.0%	-43.1%	-72.4%	-80.2%
Motorcyclists	1 920	903	570	516	494	438	-11.3%	-23.2%	-51.5%	-77.2%
Passenger car occupants	3 887	2 903	1 201	1 046	928	894	-3.7%	-25.6%	-69.2%	-77.0%
Other road users	2 005	1 427	644	486	469	455	-3.0%	-29.3%	-68.1%	-77.3%
Fatalities by age group										
0-14 years	653	239	124	82	71	77	8.5%	-37.9%	-67.8%	-88.2%
15-17 years	1 006	327	124	79	54	66	22.2%	-46.8%	-79.8%	-93.4%
18-20 years	1 820	690	221	154	107	134	25.2%	-39.4%	-80.6%	-92.6%
21-24 years	1 381	772	226	163	158	118	-25.3%	-47.8%	-84.7%	-91.5%
25-64 years	6 261	4 641	2 123	1 575	1 535	1 385	-9.8%	-34.8%	-70.2%	-77.9%
65-74 years	..	1 744	1 135	908	856	816	-4.7%	-28.1%	-53.2%	..
≥ 75 years	..	1 997	1 875	1 737	1 650	1 570	-4.8%	-16.3%	-21.4%	..
Fatalities by road type										
Urban roads	6 921	5 174	3 174	2 611	2 542	2 437	-4.1%	-23.2%	-52.9%	-64.8%
Rural roads	7 189	4 950	2 501	1 941	1 759	1 604	-8.8%	-35.9%	-67.6%	-77.7%
Motorways	485	286	153	146	130	125	-3.8%	-18.3%	-56.3%	-74.2%
Traffic data										
Registered vehicles (thousands)	75 960	88 602	90 464	91 326	91 404	..	..	..	..	..
Vehicle kilometres (millions)	628 581	775 723	726 256	729 906	739 898	..	..	..	..	..
Registered vehicles per 1,000 population	614.5	698.1	706.4	719.5	721.4	..	..	..	..	..