

PIN Flash 21 Reducing road deaths among young people aged 15 to 30

Around **140,000** young people aged 15 to 30 were killed in road collisions in the EU27 over the past ten years. In 2010, **9,150** young people aged 15 to 30 were killed in road collisions, compared with **18,670** in 2001. Deaths among this age group decreased by **44%** between 2001 and 2009, compared with 36% reduction in total deaths over the same period. Young people aged 15 to 30 represent **20%** of the total EU population but **30%** of all road deaths and this share has been reduced only slightly since 2001. Young people, especially males, continue to have the highest number of road deaths per million population of any age group (Figs. 6, 7). Males account for **81%** of all young people aged 15 to 30 killed on the roads in the EU.

The number of young people killed has decreased since 2001 in all PIN countries except Romania. **Portugal** and **Spain** achieved the best annual average reductions in the number of young people killed between 2001 and 2010, around 12%, followed closely by **Latvia** (Fig. 1a). These three countries have also achieved impressive overall reductions in road deaths.

Despite these improvements, young people continue to experience particularly high risk on the roads, especially young males. On average, the road mortality rate for young people is **69%** higher for young people than the corresponding risk for the rest of the population (Fig. 6). For young males, mortality is **168%** higher than for the rest of the population (Fig. 7). Approximately **one in five** young people who die in the EU does so as the result of a road collision, about twice as many as die from suicide (Figs. 9 and 10).

Collisions involving a young driver or rider account for **37%** of total road traffic deaths (Figs. 11 and 12). For each young driver killed there are **1.2** passengers or other road users killed in the same collisions. Young drivers, especially males, are not just a danger to themselves; they also pose a greater risk to their passengers and other road users than other drivers do.

While young people must gain experience in order to use the roads safely, the process of gaining that experience exposes them and others to disproportionate risk. Governments and road safety actors must find the right balance between the need to tackle the overrepresentation of young people in road collisions and encouraging young people's access to experience and mobility.

Member States must make the fight against road deaths among young people a priority if they want to achieve the EU 2020 road safety target and their national targets. The share of young people's deaths among total deaths will increase as road safety of the rest of the population increases unless young people's safety is similarly improved.

The country comparison shows that the differences between countries are large. Curbing deaths among young people therefore requires general road safety measures, coupled with specific measures, for example targeting young drivers and powered two-wheeler riders, in particular males, in countries where reductions in young people's deaths on the road are lower than the EU average reduction.

1.1 Young people's deaths have fallen since 2001 in all PIN countries except Romania

Portugal and **Spain** scored the highest average annual reductions in the number of young people aged 15 to 30 killed in road collisions since 2001, and **Latvia** ranks third. A group of 12 countries composed of **Estonia, Slovenia, Luxembourg, Germany, Switzerland, Italy, The Netherlands, France, Belgium, Sweden, Czech Republic** and **Austria** follows with reductions above the EU average of 7%. Slowest progress has been made in **Poland, Greece** and **Finland**. In **Romania**, the number of young people killed on the roads has increased since 2001.

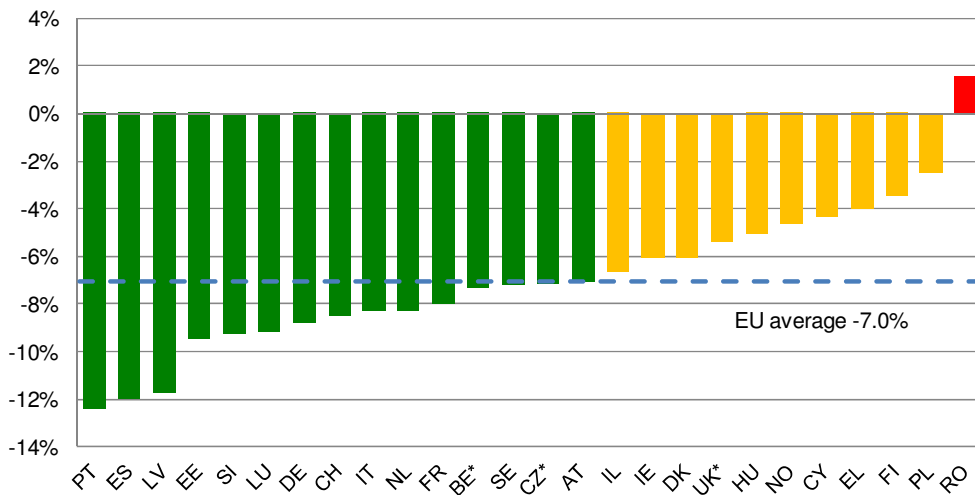


Fig. 1a: Average annual percentage change between 2001 and 2010 in the number of young people aged 15-30 killed on the roads.

*2010 data not available, 2009 figure used for 2010 in calculating the annual average percentage change.

Note: Limitations of data prevent the inclusion of Bulgaria, Lithuania, Malta and Slovakia in Fig.1.

The corresponding ranking by average annual percentage change in road mortality is shown in Fig. 1b and is broadly similar to that in Fig. 1a, indicating that differences in the changes in population in this age group have affected the ranking only slightly. The principal exception is Cyprus, where the increase in population in this age group has offset by about one third the reduction achieved in its road mortality.

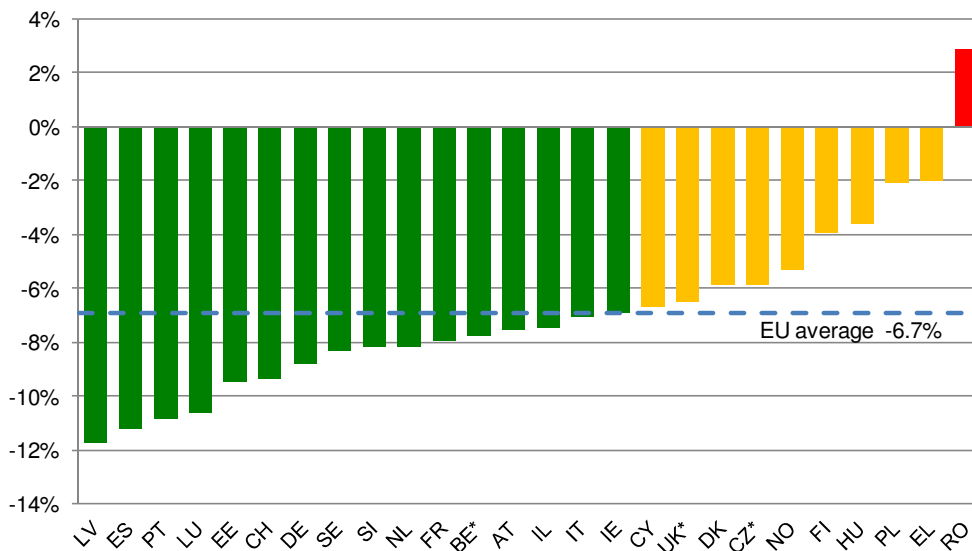


Fig. 1b: Average annual percentage change between 2001 and 2010 in the road **mortality** of young people aged 15-30 (road deaths among young people per million young inhabitants).
 *2010 data not available, 2009 figure used for 2010 in calculating the annual average percentage change.

In **Latvia**, overall road deaths were cut by 61% in 2010 compared with 2001 and road deaths among young people by 77%. These impressive reductions are the result of the implementation of a comprehensive set of measures to reduce overall road deaths and deaths among young people. *“In 2004, we introduced a penalty point system. Novice drivers lose their driving licence when they reach 10 points (16 for other drivers). Police checks of major traffic offences, in particular drink driving, have increased. Our government has also been funding three to four big road safety campaigns a year. As a result, attitudes towards road safety are slowly starting to change amongst the population, in particular amongst young drivers. Research showed that the pre-driving period is key to preparing future drivers to behave safely. Road traffic law is taught in social studies classes: children start to learn how to act as a safe pedestrian and car passenger at 8/9 years old, as a safe cyclist at 11/12 and how to act as a safe moped rider at 14/15. The test for driving a car has been improved and a test for driving a moped was introduced in 2004, to comply with the 3rd EU Driving Licence Directive. Still more needs to be done to reduce young people’s high risk of dying when riding a motorcycle or a moped or when driving a car”.* Aldis Lama, Ministry of Transport, Latvia.

“Since 1994 and the revision of the Portuguese driving code, novice drivers convicted of serious and very serious offences during their two-year probation period see their driving licence revoked (and not only suspended as is the case for older drivers). This law at first faced fierce opposition and was challenged in courts. Now it is recognised that this law has a dissuasive effect among all young drivers who are afraid of losing their driving licence. The Portuguese association of wine and spirit retailers has been running for some years an anti drink-driving campaign, promoting sober drivers as being “100% cool”. This campaign was coupled with

widespread police enforcement campaigns in key areas and at relevant periods. Local authorities in cooperation with local stakeholders have been improving public transport facilities to and from night recreation spots". João Cardoso, National Laboratory of Civil Engineer, Portugal.

In **Spain** too, young people benefitted from the recent general road safety progress. Deaths among young people were cut by 68% in 2010, compared with 2001, while overall road deaths were reduced by 55%. Enforcement was improved and sanctions were tightened up for all. Specific measures targeting young people are also been implemented. Novice drivers lose their driving licence when they lose 8 points (12 for other drivers). In 2010, the minimum age for riding a moped was increased from 14 to 15 and a theory and practical skills tests introduced in line with the EU Driving Licence Directive. *"Drink driving checks targeting young people are regularly carried out by the Police during weekends. The Ministry of Interior, local authorities and young people NGOs are running campaigns to encourage young people to designate a sober driver to bring them home safely. Still, every weekend nearly 40 young people die or are seriously injured in a road collision. Our Strategy for 2020 aims at reducing this number".* Pilar Zori, DGT, Spain.

Several new measures have been introduced recently in **Germany** targeting young drivers. Young people can start driver training at 16½ and pass both practical and theory tests at 17, but until their 18th birthday they can only drive accompanied by an experienced driver. Supervised and novice drivers aged 18 or below are subject to a zero alcohol limit until they reach 21 and all other novice drivers during their first two years of driving.

Heated discussions are currently dividing decision makers and road safety stakeholders in Germany about the possibility of the lowering the current limit of 16 years to 15 years old for driving a moped. These discussions follow the transposition into German law of the 3rd EU Driving Licence Directive. Whilst the EU Directive stipulates that the minimum age for driving a moped should be 16 years, Member States are allowed to lower it as far as 14 years or raise it as far as 18. The German Road Safety Council (DVR) has advised the German government not to lower the minimum age for driving a moped.

"In Austria, in 1997, the minimum age for driving a moped was lowered from 16 to 15 years. Three years after, accidents involving a 15 year-old moped rider had been multiplied by more than 5. We fear that a similar development could happen in Germany. We have to learn from the Austrian experience and avoid repeating the same mistake." Jacqueline Lacroix, DVR.

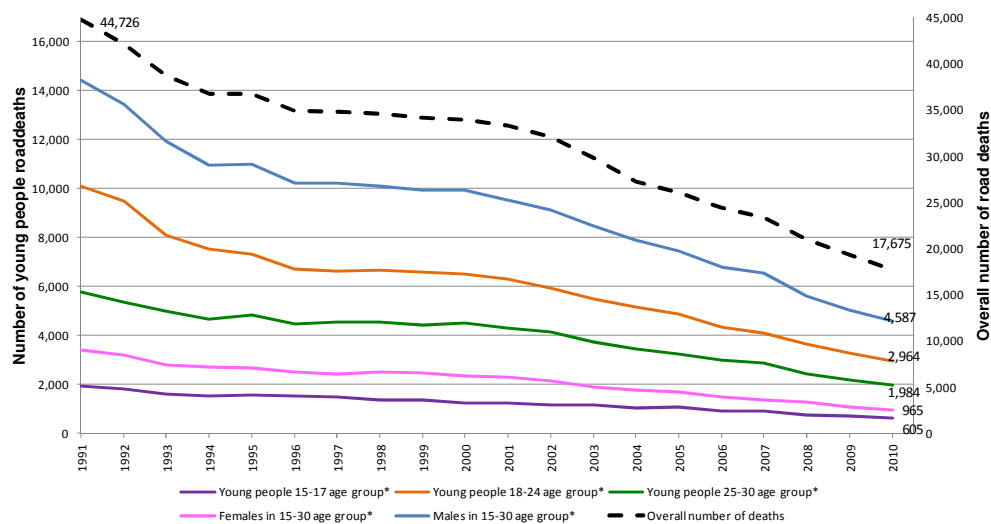


Fig. 2 Reduction in road deaths since 1991 in the EU15 (except Germany) among people aged 15-17 (purple line), 18-24 (orange line), 25-30 (green line), among males aged 15 to 30 (blue line) and females aged 15-30 (pink line) and reduction in total road deaths (black line).
 Source: CARE database (except 2010: PIN data as provided by Panellists).
 Note: Data for Germany is available in CARE only since 2000.

Why young people 15 to 30?

In this report we consider “young people” to be those aged 15 to 30 (inclusive). There is no official definition for the specific period in life when a person is considered to be “young”. While the definition 15 to 30 is somewhat arbitrary, this is the age-range covered by indicators developed in the recently published EU Youth Strategy¹. Up to 14 was used to define the category *children* for PIN Flash 12, as up to 14 the ways children travel are often dictated by the choice of parents, environment and policies in general². 15 is in many EU countries the age at which one can start driving a moped or a motorcycle and finishes compulsory school attendance. Moreover, in some countries, 15 is the age at which you are considered to be legally responsible of your acts. Road safety research has traditionally considered “young people” to be those aged 18 to 25. The path from childhood to independent adulthood is lined with a number of crucial milestones, such as leaving the parental home to study or to work. Longer studies and difficulties in securing a steady job have seen youngsters living with their parents for longer³ and acting as “young” people for longer. Young people are typically in a period of rapid maturation, during which they test boundaries and assert independence. They

¹ EC Youth Strategy, http://ec.europa.eu/youth/news/doc/sec401_en.pdf

² ETSC (2009), 3rd PIN report, Chapter 3, Reducing child deaths on European roads.

³ Eurostat, Youth in Europe, A Statistical portrait, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-78-09-920/EN/KS-78-09-920-EN.PDF

are at a stage in life that is often intensely social, including being active at night and at weekends, in groups, and sometimes involving alcohol and other recreational drugs⁴.

Drivers represent 38% of total road deaths among young people. Research on road safety of young people therefore often focuses on drivers. This report however considers all kind of road users among young people – for example increasing numbers of young people riding powered two-wheelers (PTW), cycling and walking, partly as a contribution to reducing pollution) or for economic reasons such as unemployment or costs of owning a car or of insurance..

The indicator

The annual average percentage **reduction in the number of road deaths among young people** aged 15 to 30 inclusive between 2001 and 2010 is used as main indicator in this PIN ranking (Fig. 1a). To allow for the effect of changes in the population in this age group, the corresponding annual average percentage reductions in road mortality in this age group are shown in Fig. 1b.

The data were retrieved from CARE when available and completed or updated by the PIN Panellists. The full dataset is available in the Background Tables, together with minimum age for licensing provided by Panellists. No data was received from Bulgaria. For Lithuania the data do not match the age groups used in this report. The number of young people killed in traffic is available only since 2007 in Malta and Slovakia, making the series too short for estimating the annual average percentage reduction (Fig. 1a, 1b). Population figures were retrieved from the Eurostat database.

The safety of young people on the road is expressed in terms of *mortality*, i.e. the number of young people 15 to 30 killed in road collisions divided by their population size in millions (Figs. 1b, 3, 6, 7). Road deaths divided by population give a good estimate of the overall impact of shortfalls in road safety on the age group, while taking account of changes in the young population. Unfortunately data on number of young drivers' licences are available in only a few countries in the timescale of preparation of this Flash. Road deaths among young people are compared with deaths from all causes in the same age group (Fig. 9). Data on deaths from all causes were retrieved from the Eurostat database.

The percentages of different types of young road user among those killed in traffic differ by age and gender. Young males killed in road collisions are killed as car drivers (39%), motorcycle users (22%), car passengers (18%), pedestrians (7%), moped users (7%) and cyclists (2%) (Fig. 8a). Young females killed in road collisions are mainly killed as car passengers (38%), car drivers (34%), pedestrians (11%), motorcycle users (6%), moped users (3%) and cyclists (3%) (Fig. 8b). Unfortunately an estimation of time spent in traffic or the amount of travel by young people is available in only a few countries. Exposure in traffic is therefore not taken into consideration when comparing countries. Yet data available in Sweden, The Netherlands and the UK have shown that large differences in male and female mortality rates remain even after taking into consideration the fact that men drive more than women.

⁴ OECD (2006), Young drivers, The road to safety.
<http://www.internationaltransportforum.org/jtrc/safety/YoungDrivers.html>

This report does not discuss the causes of collisions involving young people. From the existing research on the topic we know that collisions involving young people often combine aggravating factors such as driving at night or at weekends, carrying passengers of similar age, speeding, drink driving, driving without seat belts. Drug-driving, especially involving cannabis, is increasing and becomes especially dangerous when the drugs are taken along with alcohol⁵. Young people are also overrepresented in single-car and loss-of-control collisions⁶.

1.2 Road safety of young people has improved faster than overall road safety

On average in the EU27, road safety of young people has improved faster than road safety of the rest of the population since 2001 (Fig. 3). In **Luxembourg, Switzerland and Slovenia**, the annual average reduction in road deaths among young people is more than 3 percentage points higher than the corresponding reduction for the rest of the population. In **Hungary, Greece, Poland, Ireland, Finland and Romania** the opposite is true and road safety of other age groups has improved more than one percentage point faster than road safety of young people.

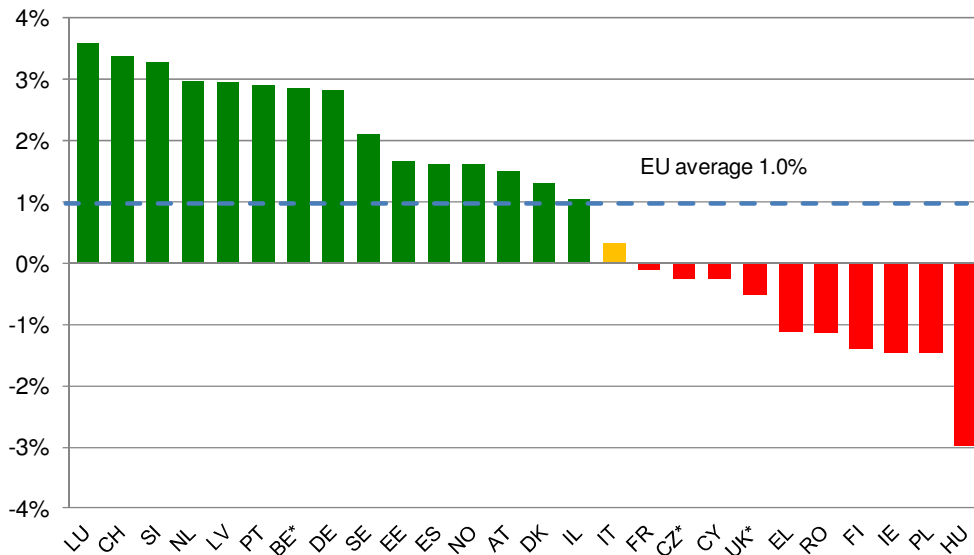


Fig. 3 Amount by which the average annual percentage reduction in mortality among young people aged 15-30 exceeds the average annual percentage reduction for the rest of the population over the period 2001-2010.

*2010 data not available, 2009 figure used for 2010 in calculating the annual average percentage change.

Note: Limitations of date have prevented the inclusion of Bulgaria, Lithuania, Malta and Slovakia in Fig. 3 (see indicator box).

⁵ OECD (2006), Young drivers, The road to safety. DRUID, Driving under the Influence of Drugs, Alcohol and Medicines, www.druid-project.eu.

⁶ SafetyNet, Novice drivers, retrieved 25.11.2011, http://ec.europa.eu/transport/road_safety/specialist/knowledge/pdf/novice_drivers.pdf

“Road safety of young people has improved faster in Portugal than road safety of the rest of the population since 2001. This is quite logical as young drivers benefited most from overall road safety improvements implemented over this period, in particular infrastructure safety improvement schemes. Young drivers also seem to have been more receptive to recent road safety awareness campaigns than older drivers”. João Cardoso, LNEC, Portugal.

“In Hungary, young drivers are not yet subjected to probational period, nor graduated driving licensing. We need to explore those solutions to avoid young people being left out of our recent progress in improving overall road safety”. Peter Hollo, Institute for Transport Science, Hungary.

“Our adverse performance in Fig. 3 is really disappointing. Many collisions involving young people take place at night on isolated rural roads which makes enforcement difficult. The Police have to set targets for enforcement action targeting young people’s high risks, speeding, drink driving, and non use of seat belts. In-depth analysis showed that more than half of the drivers aged 15 to 30 who caused a fatal road accident had been caught by the police at least once during the last five years before the accident. Those young people ‘at risk’ should be identified and offered additional training in order to prevent them from engaging in risky behavior in the future”. Esa Rätty, Finnish Motor Insurance Center.

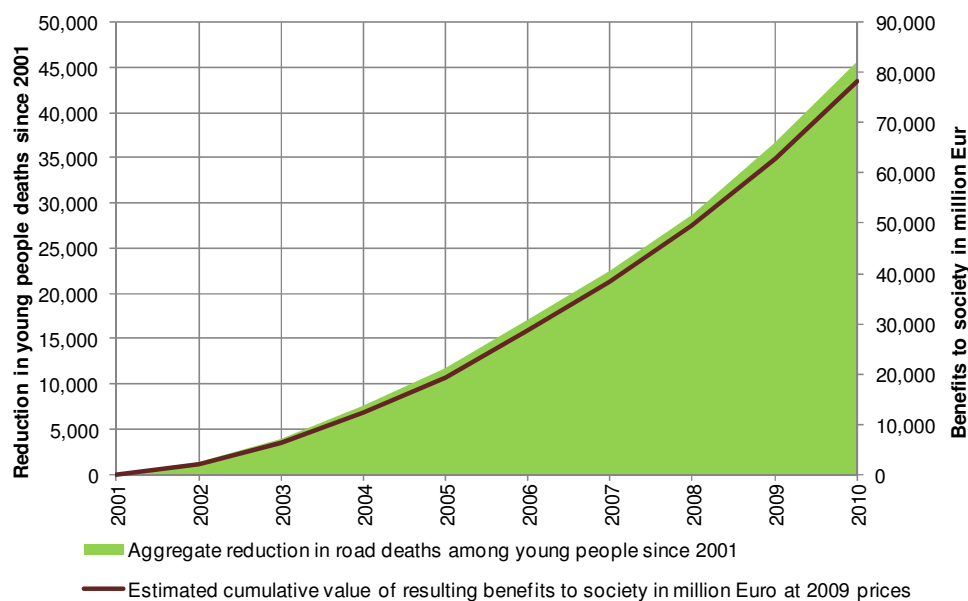


Fig. 4 Cumulative reduction to 2010 in the number of road deaths among young people compared with 2001 and estimated valuation of benefit to society at 2009 prices.

There have been **45,500** fewer road deaths among young people aged 15-30 since the adoption of the EU target in 2001 than if the 2001 numbers had continued. The total benefit to society

from the reductions in road deaths among young people in the EU over the year 2002-2010 compared with 2001 is valued at approximately **78 billion Euro**⁷ (Fig. 4).

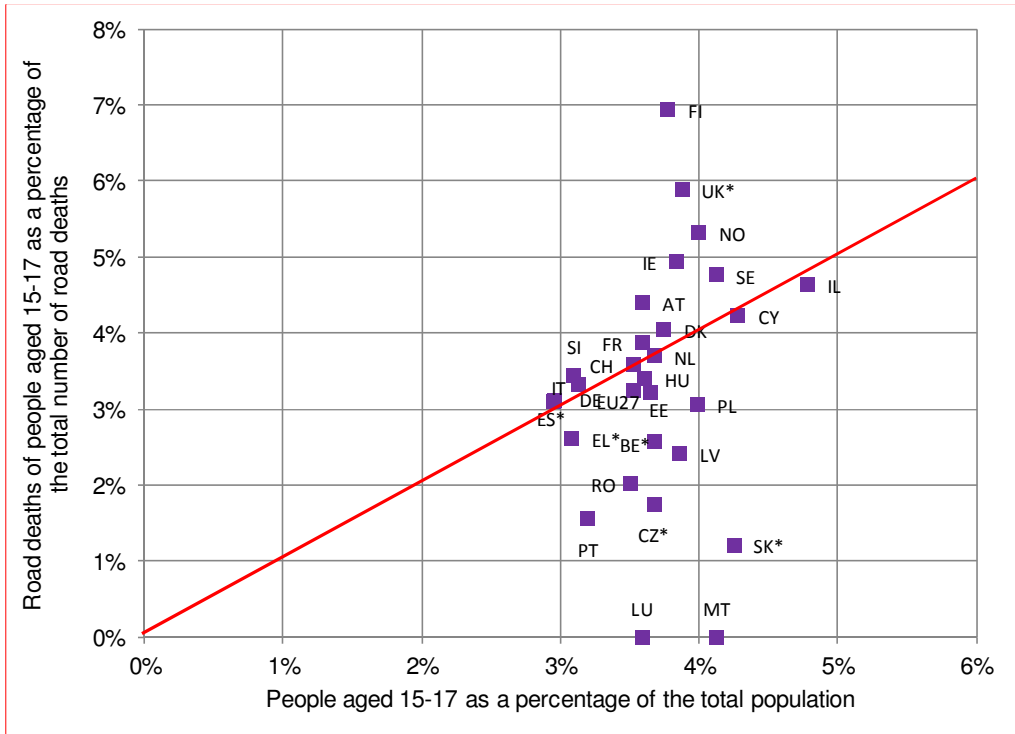
The potential for reduction is far from being exhausted. The EU has adopted a new target of a further 50% reduction in road deaths. If a 50% reduction in young people deaths from their number in 2010 were achieved in 2020 by equal annual percentage reduction, **29,500** young people's deaths would be avoided over the years 2011-2020 compared with 2010. The benefit to society from these further reductions is valued at about **57 billion Euro** at 2009 prices.

1.3 The scale of the problem: young people deaths account for 30% of all road deaths across the EU

Young people aged 15 to 30 represent **20%** of the total EU population but **30%** of all road deaths and this share has been reduced since 2001 by only about 4 percentage points. Fig. 5a, 5b and 5c illustrate how the overrepresentation differs between the age group 15-17, 18-24 and 25-30 and is concentrated in the 18-24 age group. These Figures also illustrate how the overrepresentation differs between countries.

Comment [G1]: Anna and Ylva (SE), Rob Foss (OECD) suggested cutting Fig. 5 and just keep the text.

⁷ 2009 prices. The monetary valuation of the reductions in young people deaths since 2001 is based on the method developed in ETSC (2010) 5th PIN Report, Chapter 1, p. 14. Based on updated values in use in ten European countries, we have taken the monetary value of the human losses avoided by preventing one fatality (VPF) to be 1.70 million Euro.



Comment [G2]: From Richard:
 For the final print and web versions Figs 5a,b,c need further adjustment in height and width so that the number of mm per percentage point vertically is the same in all 3, and the same is true horizontally – though of course the number of mm horizontally will be larger than the number vertically

Fig. 5a: Road deaths among the 15-17-year-olds in the last three years available as a percentage of the total number of road deaths, plotted against the corresponding percentage of the population represented by the 15-17-year-olds.

The 15-17-year-olds represent between about 3 and 4% (5% in the case of **Israel**) of the population in each of the countries represented in Fig. 5a. Their shares of the total number of road deaths are on average similar to the percentages of the population in that age group but they range between about 1 and 7% (except for **Luxembourg** and **Malta** where no young people aged 15 to 17 were killed in the last three years). Analysis shows that variation between countries in the 15-17-year old share of the population contributes little to the variation between countries in their share of road deaths. It should be borne in mind that the shares of road deaths in the smaller countries are subject to considerable statistical variation. Differences between countries might be explained by differences in motorisation or in the minimum ages for moped riding and solo car driving.



Fig. 5b: Road deaths among the 18-24-year-olds in the last three years available as a percentage of the total number of road deaths, plotted against the corresponding percentage of the population represented by the 18-24 age group.

The 18-24 year-olds are over represented in road deaths in all PIN countries compared to their share of the population, on average by a factor of about 2 (Fig.5b). In **Ireland**, this age group represents 9% of the population but more than 25% of overall road deaths. In **Luxembourg, Cyprus, Norway, Malta, France** and the **UK**, they represent between 8 and 11% of the population but between 20 and 24% of road deaths in their countries. In **Portugal, Hungary, Italy, Switzerland, Romania, Slovakia, Spain** and **Latvia**, their shares of the road deaths are less than 15%. Analysis shows that variation between countries in the 18-24-year old share of the population contributes little to the variation between countries in their share of road deaths.



Fig. 5c: Road deaths among the 25-30-year-olds in the last three years available as a percentage of the total number of road deaths, plotted against the corresponding percentage of the population represented by the 25-30 age group.

Young people aged 25 to 30 are also overrepresented in road deaths compared to their share of the population, but on average by only about one-quarter (Fig. 5c), and for this age group the differences between the countries in their share of the population account for about one-quarter of the variation between countries in their share of road deaths. In the extreme case of **Cyprus**, the 25-30-year-olds represent 10.5% of the population but 18% of road deaths. In **Malta**, **Hungary** and **Greece**, they represent 9% of the population but between 12 and 14% of road deaths in their respective countries. In Estonia, Luxembourg, Romania, Slovakia, Slovenia, Austria, Norway and the Netherlands, this age group does not appear to be overrepresented among road deaths.

As seen in Fig. 5b, in **Ireland** deaths among 18-24 year old road users are particularly problematic. The Road Safety Authority (RSA) has therefore implemented a comprehensive integrated road safety education programme which is custom designed for 18-24 year olds including specific programmes for 3rd level students and also includes an educational resource for young people not in formal education called www.wrecked.ie.

The RSA has also reformed the way people are learning to drive and every driving instructor must meet strict competencies which are reviewed and assessed every two years. The RSA has just begun the implementation of a Graduated Driving Licence programme with the introduction of mandatory lessons for learner motorcyclists and drivers, as well as lower BAC limits for learners and novice drivers. These training programmes are designed to protect inexperienced learner drivers while they are learning to drive and to support them as they develop the skills, confidence and appropriate behaviour to share the road safely with others.

“The Road Safety Authority has an ongoing research programme looking at the psychology of risky driving behaviour of young people which continues to inform our interventions. We might consider the introduction of a Hazard Perception Test, the introduction of R Plates for novice drivers, faster accumulation of penalty points for specified driving offences, and the enhancement of the role of the accompanying driver in the learning to drive phase”. Michael Rowland, Road Safety Authority, Ireland.

1.4 The safety of young people compared to the rest of the population

On average, the road mortality rate for young people is **69%** higher for young people than the corresponding risk for the rest of the population (Fig. 6). For young males, mortality is **168%** higher than for the rest of the population (Figs 6 and 7).

However, death rates over the last three years of available data vary greatly between Member States. Young people are safest in **Sweden**, the **Netherlands** and **Switzerland** - countries with good road safety records. In Sweden, the safest country for both young people and the rest of the population, 53 young people were killed on the roads each year per million young inhabitants, compared with 31 for the rest of the population. Young people in **Greece** have approximately 4 times the corresponding risk of being killed than their Swedish counterparts.

The ranking in Fig. 6 of countries by road mortality among young people (brown bars) is mostly fairly similar to the ranking by road mortality in the rest of the population (orange bars). **Greece**, **Poland** and **Romania** are also among the countries with higher overall road mortality rates. Notable exceptions are that **Slovakia** is ranked 11th (out of 28) for young people but only 24th for the rest of the population, and **France** is ranked only 21st for young people compared with 11th for the rest of the population.

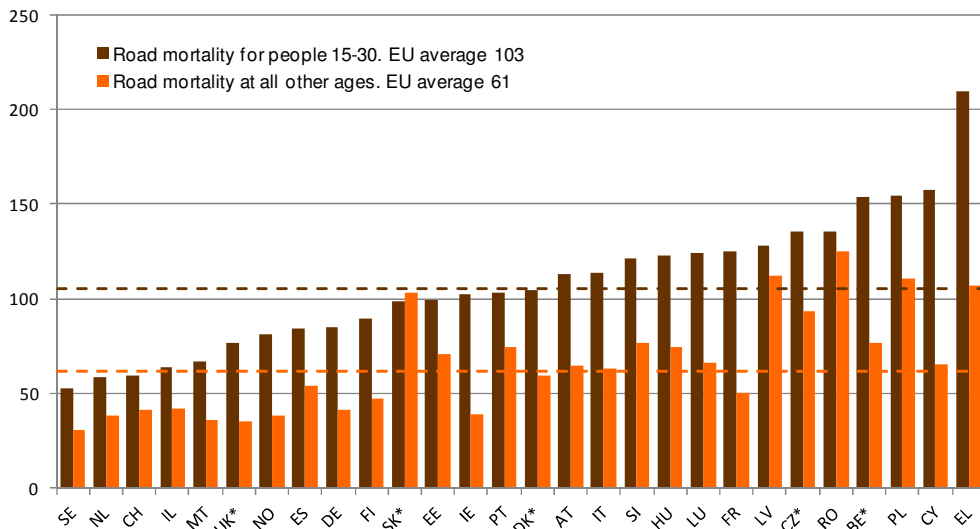


Fig. 6 Young people deaths per million young inhabitants (with road deaths per million inhabitants at all other ages for comparison). Average values for years 2008, 2009 and 2010.

* last three years available: 2007, 2008 and 2009

The general road safety improvements recorded in **Sweden** since 2001 are benefiting young people as well (Fig. 6). General road safety measures implemented in the spirit of the Vision Zero have also improved the safety of 15-30-year-olds; among them the introduction of separated rural roads (so called 2+1 lane-highways with a median barrier) and safety cameras, the reassessment of speed limits to adjust them to road safety standards, improvement in the infrastructure (separating pedestrian and cycling from motorised traffic), the increase in 30km/h zones in areas where there are many vulnerable road users and improvement in pedestrian and occupant protection in cars.

While low car licensing rates for 18 to 22 year olds have lessened impacts of inexperience and risk taking, there is still substantial over representation in casualty collisions among young people. The levels of collision involvement by 15 year old moped riders are high⁸. *"We advised the Swedish government to raise the minimum age for riding a moped to 15 to fall in line with the EU Driving Licence Directive and the practice in the most EU countries"*. Nils Petter Gregersen, Swedish National Society for Road Safety (NTF), Sweden.

"We are concerned by the high number of young people killed per million young inhabitants in Belgium. This is why we recently conducted a new research on young drivers. As in other countries, collisions involving young people often combine aggravating factors such as driving at night or at weekends, carrying passengers, loss of control and drink driving. Findings from the EU project DRUID revealed that Belgian car drivers are among those who drive more under the influence of alcohol in Europe. Drink driving is particularly dangerous for youngsters. This is why

⁸ Breen, J. et al (2008), An independent review of road safety in Sweden.

volunteers are touring nightclubs and music festivals all year round to raise awareness among young drivers of the risk they pose to themselves and others if they speed, drink or take drugs before taking the wheel". Yvan Casteels, Belgian Road Safety Institute." Yvan Casteels, Belgian Road Safety Institute.

1.5 Safety is a greater challenge for young males than for young females

The indicator for all young people hides big differences in mortality rates between young males and young females (Fig. 7). Males account for **81%** of all young people aged 15 to 30 killed on the roads in the EU. Young male death rates exceed young female death rates by a factor of more than 4. On average over the last 3 years **164** young males were killed on the road each year per million young male population, compared with **40** young females per million young female population. Across Europe, young females have a lower road mortality rate than the population as a whole. Fig. 7 shows that there is relatively little variation in young female mortality between countries other than Cyprus, Israel, Sweden, Switzerland and The Netherlands so most of the variation in both sexes mortality comes from the variation in young male mortality.

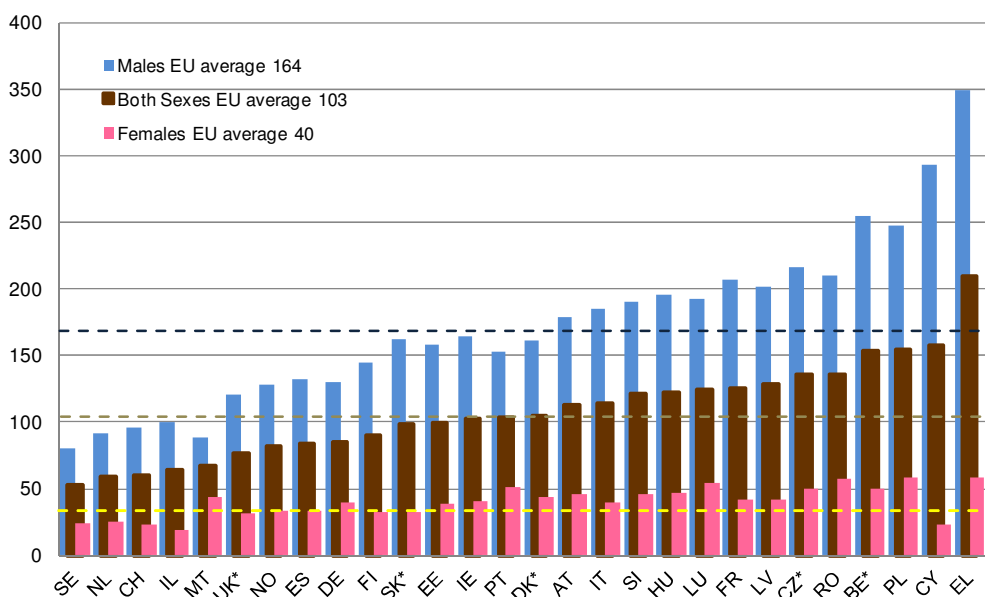


Fig. 7 Young people's road mortality per million young people, in total and by gender – average of the last three years, ranked by the mortality of both sexes.
 * last three years available: 2007, 2008, 2009

Figures 8a and 8b show the percentages of different types of road user among young males and females respectively who were killed on the roads in the last three years.

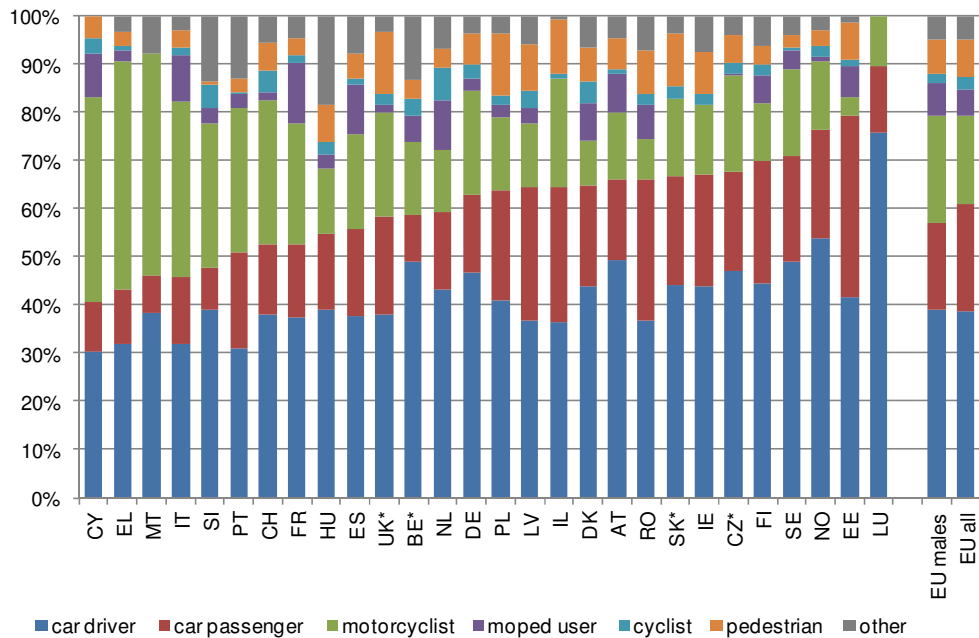


Fig. 8a Percentage share of different types of road user, among **male** road deaths for the 15-30 age group. Average of the last three years available, with countries ranked by percentage of car users (driver or passenger)

Unfortunately an estimation of time spent in traffic or the amount of travel by young people is available only for a very few countries. Exposure in traffic is therefore not taken into consideration here in comparing countries. Yet data available in Sweden, The Netherlands and the UK has shown that large differences in male and female mortality rates remain even after taking into consideration the fact that men drive more than women.

Based on research findings showing that seven out of ten female passengers killed at ages between 17 and 24 were killed in cars driven by men in the same age group, the Road Safety Authority in **Ireland** launched a campaign called **'He Drives, She Dies'** aimed at young women, designed to empower them to say no to getting into a car with a man who drives dangerously⁹. Research shows eight out of 10 passengers have felt unsafe in a car. Speeding was the most common factor described as causing fear, with many passengers saying they feared the driver would accelerate if they commented on the vehicle's speed. More than half of those interviewed said they would accept a lift from someone who had been drinking.

"New EU legislation coming in soon means that insurers will not be able to charge different amounts based on gender. It is not good news if you are a female. It is likely that their insurance costs will go up by maybe 25 or 30% while accident statistics are showing that their driving is significantly safer". Simon Douglas, AA, UK

⁹ www.rsa.ie/RSA/Road-Safety/Campaigns/Archived-Campaigns/He-drives-she-dies

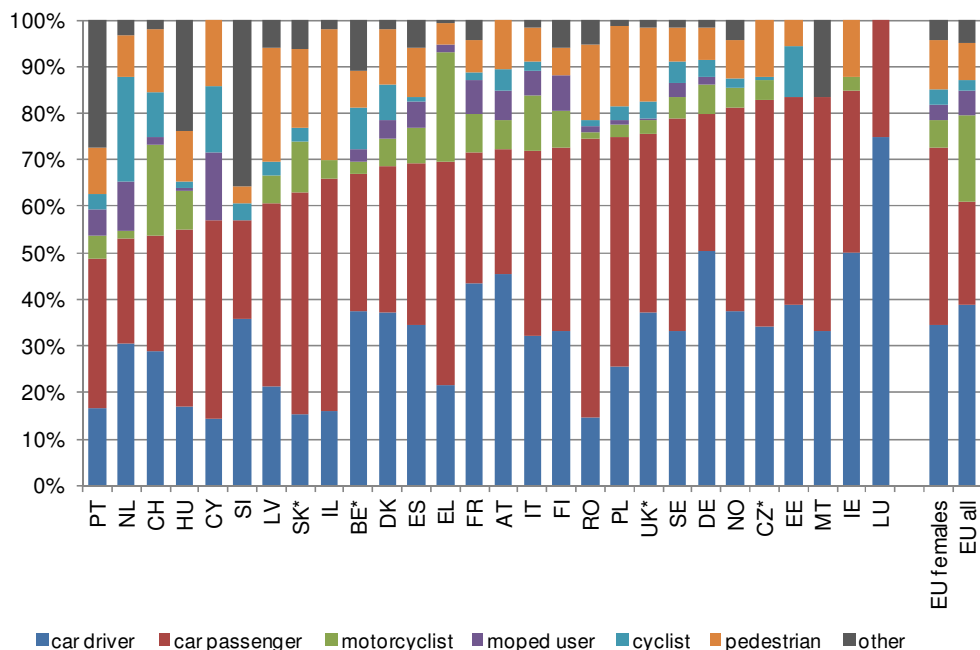


Fig. 8b Percentage share of different types of road user, among **female** road deaths in the 15-30 age group. Average of the last three years available, with countries ranked by percentage of car users (driver or passenger).

Deaths among users of **Powered-two-wheelers (PTW)** represent between 30% and 50% of all young people killed in road collisions in Cyprus, Greece, Italy, France and Malta. Male motorcyclists account for 47% of the total number of young males killed in **Greece** – one of the highest shares, together with Cyprus. The more widespread use of motorcycles only explains part of this. Unfortunately only 75% of riders and 46% of passengers wear a helmet. Cities must adopt ambitious action plans to improve PTW safety as a matter of urgency as most of the fatal collisions involving motorcyclists happen in cities.

“Since 2008, overall road deaths have decreased in Greece, partly due to the economic crisis. This decrease has not been witnessed among PTW users as some car users shift to PTW as a cheaper mode of transport and as levels of enforcement could not be sustained following a cut in police budget, and helmet wearing checks are going down”. George Yannis, Technical University of Athens, Greece

1.6 One young person’s death in four results from a road collision

On average, in the EU, one young person’s death in four results from a road collision. Road deaths among young people aged 15 to 30 represent **21%** of deaths from all causes in the

same age group but these percentages vary markedly between countries (Fig. 9), and with age and between genders within this age group (Fig.10).

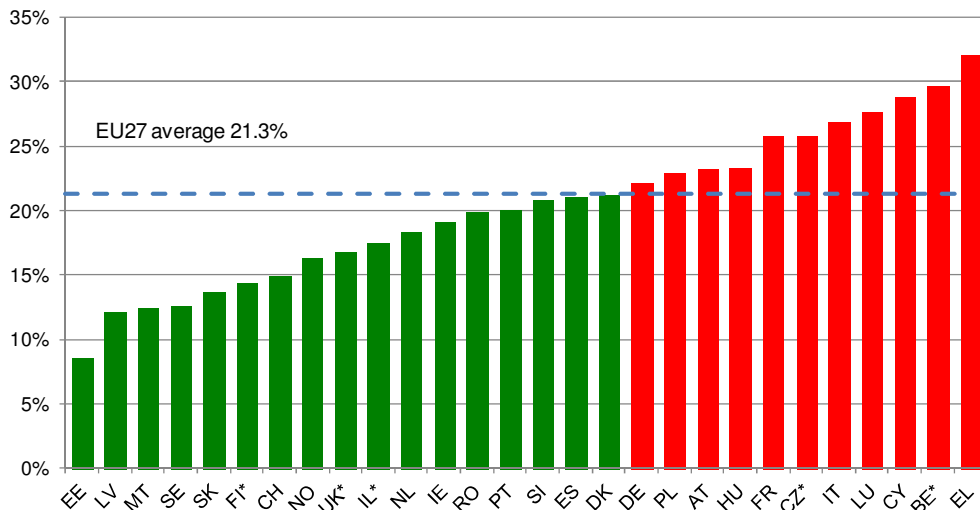


Fig. 9 Road deaths among those aged 15 to 30 as a percentage of deaths **from all causes** in the same age group in last three years available

Road collisions are by far the leading cause of young people’s deaths in Greece. “Road deaths account for 32% of deaths from all causes among the 15-30-year-olds, which is significantly higher than in other EU countries. This can be explained by particularly low road safety levels in Greece and a higher moped and motorcycle use than in other EU countries. When adjusted for exposure, accident risk for the 18-24-year-old motorcycle riders (202 deaths per million vehicle-km driven) is 8 times higher than the risk for young car drivers (25 deaths per million vehicle-km travelled) and 25 times higher than the risk for older car drivers (8 deaths per million vehicle-km travelled)”. George Yannis, Greece.

On average in the EU, road deaths among **males** aged 15 represent more than 20% of deaths from all causes among males of that age (Fig. 9). This percentage is successively greater among males aged 16 and 17, and is more than 30% for males aged 18 to 24. It is only 20% for males aged 25-30. The corresponding percentages are lower for **females** than for males across the age groups considered, especially for the 25 to 30 age group, but show a broadly similar pattern of variation by age.

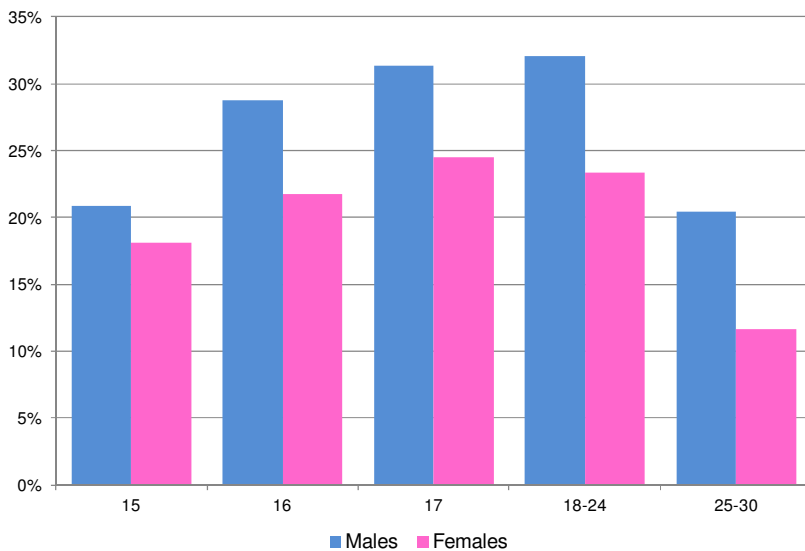


Fig. 10: Road deaths in EU27, by gender and age group as a percentage of deaths from **all causes** for that particular age group and gender in the last three years available.

1.7 Deaths in collisions involving a young driver or rider

Collisions involving a young driver or rider account for **37%** of total road traffic deaths (Fig. 11). For each young driver or rider killed there are **1.2** other road users killed in the same collisions. Young drivers – especially males – are not just a danger to themselves, they also pose a greater risk to their passengers and other road users than other drivers do.

While young people must gain experience in order to use the roads safely, the process of gaining that experience exposes them, and others, to risk. Governments and road safety actors must find the right balance between the need to tackle the overrepresentation of young people in road collisions and encouraging young people’s access to experience and mobility.

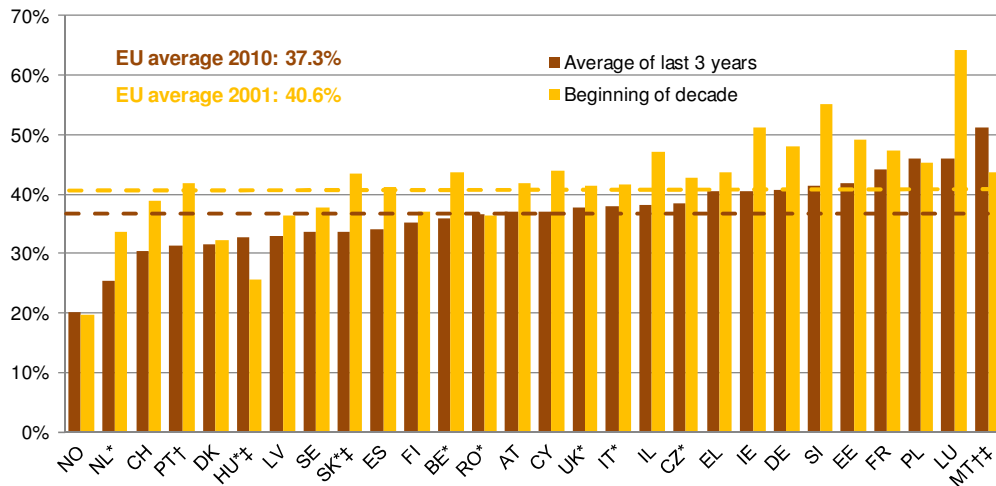


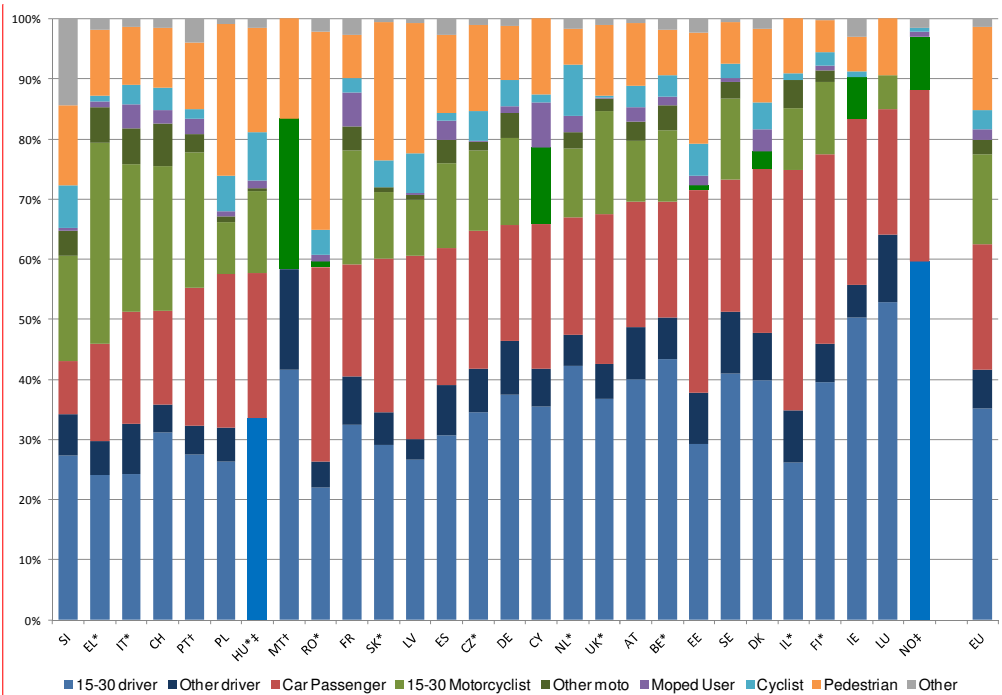
Fig. 11 Road deaths in collisions involving at least one young driver or rider (in latest three years available and in 2001) as a percentage of the total number of road deaths

* Latest 3 years available 2007, 2008, 2009

† Latest 3 years available 2006, 2007, 2008

‡ First year available: HU 2003; MT, SK 2005

“Requirements for driver training are very extensive in Norway but research has not shown a direct link with the low percentage of young driver and motorcycle rider involvement in fatal collisions. There are reasons to believe that some of the training schemes have adverse impacts on safety as they increase drivers’ overconfidence”. Rune Elvik, TOI, Norway.



Comment [G3]: From Richard: To get the legend entries for 15-30 motorcyclists and other motorcyclist to match within available space try 15-30 mcyclst Other mcyclst (but give other driver a capital O)

Fig. 12 Road deaths following collisions involving at least one car or motorcycle driven by a young person ranked by the share of car users (drivers or passengers) killed in those collisions.

In the EU27 the young drivers and riders themselves (represented in light blue and light green in Fig.12) account for less than half of the deaths in the collisions in which they are involved, and Fig.12 shows how the other deaths are distributed among different kinds of road user

While young people are a high risk group in themselves, most young people are not deliberately unsafe. The high levels of young drivers' and riders' risks result in large measure from factors of inexperience, immaturity and lifestyles associated with their age and gender (OECD 2006). Because of lack of experience, novice drivers' and riders' attention is easily overloaded, and their ability to combine simultaneous actions is relatively poor. At the same time, because serious crashes are relatively rare events, new drivers are not provided with the sort of negative feedback that might induce them to drive more carefully. They might also be motivated to arrive at a destination as quickly as possible, by peer pressure or a desire to 'show off'. Novice driver collision involvement is lower where the licensing age for solo driving is higher, indicating that age of starting to drive affects the level of risk during the early years of driving. Research indicates that the parts of the brain responsible for inhibiting impulses and weighing the consequences of decisions may still be developing until well after the teenage years, limiting some skills needed for safe driving. To keep down costs, young people may also drive older vehicles with fewer safety features.

2.1 Experience from fast progressing and best performing countries

Experience from fast progressing countries suggests that improving road safety of young people is most likely to be achieved through combining measures aimed at improving road safety for all road users and dedicated measures aimed at reducing the high risk of involvement in collisions of young drivers and riders.

a. Enforcement, in particular against the three main killers, will also prevent road deaths among young people...

Many of the countermeasures targeting young people will be ineffective without related enforcement, which may focus on areas where young people – especially young men – are particularly over-represented, such as speeding, drink- and drug-driving and non-use of seat belts, and at times and locations where young people are particularly active. Special plates identifying novice drivers can also help the police targeting young people¹⁰. Special attention should also be paid to unlicensed driving.

Deaths among young people in France were cut by 40% between 2002 and 2006 following changes in enforcement practices and the introduction of a fully automated speed management system. Novice drivers there are submitted to stricter penalty points systems leading them to check their speed to avoid losing their licence. *“Unfortunately, preliminary results for 2011 show a stagnation of deaths among young people compared to 2010 following the devastating effect of making it easier for drivers to regain penalty points that were withdrawn from their driving licence.”* Jean Chapelon, road safety expert, France.

b. ... if coupled with stricter sanctions: penalty points and rehabilitation

Enforcement should be coupled with serious repercussions that act as disincentives for unsafe behaviour. Novices should thus be subject to a probationary period, during which they could lose their licence or have to undergo additional training if they break the law. This can be accompanied by special demerit point scales for novice drivers, who either receive more points per infraction, or are subject to a lower point threshold for losing their licences than more experienced drivers. Point systems can be employed under Graduated Driving Licence (see below) or probationary systems, meaning that traffic violations during an intermediate stage of licensing could delay the novice in attaining a full licence.

c. Safer infrastructure and safer vehicles

Because of lack of experience, young drivers are easily overloaded by the driving tasks. Safer infrastructure and safer vehicles will benefit young people as the environment will accommodate more of their mistakes and mitigate their consequences.

The environment should be¹¹:

¹⁰ In some jurisdictions, special plates are employed for identifying novice drivers. These include “L (learner) Plates” and “P (probationary) Plates”, among others. Special plates help older drivers take greater precautions in circumstances involving young drivers and also make it easier for the enforcement of protective measures imposed as part of licensing for solo driving, such as night driving or passenger restrictions.

¹¹ ETSC (2008), *Managing Speed, Toward Safe and Sustainable Road Transport*.

- Self-explaining: the infrastructure should inform the road user what behaviour is expected (clear designing, marking, signing, constant speed limit information, functional classification...)
- Self-enforcing: the design and features of the road should encourage drivers to maintain safe operating speeds (Traffic calming devices, road markings...)
- Forgiving: the road is designed as to take into account human limitations and avoid driving errors resulting in fatal collisions (traffic separation, forgiving roadsides). Forgivingness in the Sustainable Safety approach developed in the Netherlands also has a social meaning. The more experienced drivers should, by displaying anticipatory behaviour, offer room to the less experienced drivers. This prevents mistakes by the inexperienced from being 'sanctioned' by a collision.

d. Licensing

Minimum age

Driving a moped with no driving licence as used to be permitted in many Member States until recently will no longer be possible after 2013. **EU Directive 2006/126/EEC on Driving Licences** (replacing Directive 91/439) introduces a new category AM and a mandatory theory driving test for moped riders. Minimum age for category AM will be 16 years but Member States may lower as far as 14 years or raise it as far as 18. The Directive also reinforces the principle of progressive access to the most powerful motorcycles. Direct access to A2 should be forbidden before 18 and to the most powerful motorcycles (category A) before 24, while riders can upgrade to a more powerful motorcycle after two year experience on a lighter machine. Minimum age for driving a car will be 18 but Member States may lower it to 17 years. Road safety professionals urge Member States not to lower the minimum age for moped driving nor for solo car driving to avoid an increase in young rider and car driver deaths when the EU Directive is transposed into national laws.

Recent research on human brain development indicates that adolescents may be inherently less prepared for the responsibilities of solo driving than older people¹². Raising, or not lowering, the minimum age for solo driving, will save lives, by virtue of the fact that it prevents young and inexperienced drivers from solo driving until they are older (OECD 2006).

Graduated Driving Licence (GDL) or 'multiphase' training systems

Graduated Driving Licence (GDL) systems are primarily designed to address the inexperience component of young drivers' collision risk but target also risk-taking behaviour, which can result from age-related factors (OECD 2006). GDL systems are usually divided into three stages: *learner*, *probationer*, and *fully licensed*. Support and restrictions are reduced from stage to stage. With growing experience, more driving privileges are phased in. GDL systems are currently being successfully used and implemented in more and more EU countries (see Background Tables) and other parts of the world (America, Australia, New Zealand). Most evaluations of the impact of GDL systems have shown that these systems report significant reductions in collisions and road deaths (ERSO 2006b).

Large scale evaluations stress the characteristics of a 'good' GDL program¹³:

¹² OECD (2006), Young people.

¹³ i.e. EU projects GADGET & DAN, Sagberg (2002b)

- A mandatory learner period of accompanied driving of at least six months or a minimum of 5000km.
- A probatory licence phase that includes:
 - Night-time driving restriction that begin before midnight or Passenger restrictions on carrying persons under 21.
 - Stricter sanctions coupled with rehabilitation courses to educate offenders
 - A zero Blood Alcohol Concentration (BAC) limit for both learner and provisional drivers.
- A second phase course during or at the end of the probatory licence phase focusing on risk perception and self-awareness and not enhancing driving skills.
- A high level of enforcement and adequate levels of sanctions are also key.

Accompanied driving implies that a candidate driver is allowed to practice under the supervision of an experienced driver, often the parents, without requiring the presence of a qualified driving instructor, in order to increase driving experience prior to solo driving. Young drivers often have significantly less than 25-40 hours of driving experience when they are licensed for solo driving. Post-licensing driving risks would be greatly reduced if all learner drivers were to acquire much higher levels of pre-licensing driving experience. This could be achieved by way of targets for minimum hours or kilometres of accompanied practice, as well as minimum periods during which this practice should take place. A lower level of accompanied practice may actually be counterproductive, as it might raise collision risk as a result of an increase of 'perceived' driving skills without a proportional increase of 'actual' driving skills. Allowing accompanied driving at 16 or 17 might also discourage young people from choosing less safe modes of transport, such as motorcycles¹⁴.

Probationary driving licence coupled with restrictions such as lower alcohol limits

Drink driving is particularly dangerous for youngsters for several reasons (ERSO 2006b):

- Their tolerance of alcohol is lower, as their body is not used to dealing with it.
- Driving is more demanding for young novice drivers than for other drivers; thus, as they need to pay more attention to their driving task, the disrupting effect of alcohol is greater than for drivers with more experience.
- Alcohol reduces inhibition. As young people possess less developed self-control mechanisms, they suffer a stronger euphoric and emotional impact from alcohol.
- Studies have shown that youngsters tend to underestimate their actual level of intoxication.

Austria, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, and Spain have introduced lower alcohol limits for novice drivers and riders (see Background Table: BAC limits in the EU27). In the **Czech Republic, Estonia** and **Hungary** there is a zero tolerance for alcohol for all drivers. Only in **Belgium, Bulgaria, Denmark, Finland, Malta, Portugal** and **the UK** are novice drivers allowed to have as high a BAC as other older drivers, namely up to 0.8g/l in Malta and the UK and up to 0.5 g/l in the rest of these countries.

¹⁴ Several evaluation studies on accompanied driving are presented in the OECD (2006) report on young people, in particular of the Swedish and French systems, showing mixed results depending on the quality of the systems.

The measures targeting young people in the EU Policy Orientations on Road Safety

In its Policy Orientations on Road Safety 2011-2020, the European Commission identifies the need to improve the quality of the licensing and training systems, with a focus on young novice drivers (Objective 1). The Commission proposes to view education and training as an overall process, a lifelong 'educational continuum' which should encourage interactive methods and the acquisition of autonomy, while keeping the cost of the licence at a reasonable level. It will examine the possibility of including accompanied driving in the requirement to obtain a driving licence and the introduction of harmonised minimum requirements for accompanying persons and instructors. It will consider how to include broader driving skills within the curricula of the theoretical and practical tests, such as defensive or eco-driving skills.

The International Commission for Driver Testing Authorities (CIECA) encourages the development of high, common standards for driving licences throughout its member countries. It participated to several EU funded projects, among them the NovEV project (2002-2004) which aimed to implement second phase driver training pilot projects, according to the guidelines laid down in a previous EU project Advanced. www.cieca.be

e. Technologies to support enforcement

Young people might well benefit most from technologies that assist with the driving task as they may be overloaded by the driving tasks. Yet as they are more likely to drive second hand or cheaper cars, young people benefit less from those technologies. Information concerning the safety benefit of purchasing cars equipped with Intelligent Speed Assistance, Seat Belt Reminders, alcolocks or Electronic Stability Control – among other safety technologies – should also be included in the theory training provided by driving schools and questions about safety technologies included in the theory test. Employers could also support the take up of safety technologies by their young employees.

f. Training and education

The goal of driving training should be to create drivers that are safe, and not just technically competent. Driver training should engage novice drivers personally and emotionally, increasing their awareness of their own limitations and of the dangers inherent to driving. This would be a new development compared to the current situation, in which most driver training basically concentrates on vehicle control and the application of traffic rules.

In order to provide an overview of what the licensing process should cover, the Goals for Driver Education (GDE) Matrix was developed in the context of the EU's GADGET (Guarding Automobile Drivers through Guidance, Education and Technology) project¹⁵. The GDE Matrix provides a hierarchical schematisation of the driver's task, outlining the personal situation within

¹⁵ Christ, R; Delhomme, P.; Kaba, A.; Mäkinen, T.; Sagberg, F.; Schulze, H; Siegrist, S. (1999). GADGET, Final report
http://www.kfv.at/fileadmin/webcontent/Publikationen_englisch/GADGET-FinalReport.pdf

which all drivers undertake driving, including preconditions, attitudes, abilities, demands, decisions and behaviour. These have been categorised into four levels. Driver training traditionally focuses on the two lowest levels (vehicle control and driving in traffic condition), particularly with regard to teaching traffic rules, practising driving in traffic and identifying hazards. However, the proponents of the GDE Matrix propose that, in order to create safer drivers, it is essential to focus on the higher levels as well (Goals for, and context of driving and Goals for life and skills for living), as these have the greatest influence on the sort of driving situations that the driver will most likely find him- or herself in. This would also reduce the male bias in many current instruction and examination techniques. Females take more lessons than males before the driving test and still find it more difficult to pass both the theoretical and practical tests¹⁶ whereas they are less involved in road collisions.

Courses concentrating on advanced vehicle control skills like skidding and manoeuvring should not be included in driver training for novices, as this leads to overconfidence. This conclusion is supported by, among others, the Norwegian experience with a second phase practical training course, in which novice drivers were taught how to control a skid (Glad, 1988). After this course was introduced, young drivers had more collisions on slippery roads than before. A possible explanation is that, as a result of the course, young drivers were more confident about their abilities to handle a car in such dangerous conditions, which they previously would have avoided.

Peer to peer education

The idea is taken from drug and AIDS prevention programmes and has become known as the "peer-education" method in which "equals relate to equals".¹⁷ A team of young offenders (in some cases helpers or victims) is integrated in the theory part of the driving training programme to share with learner drivers their own experience and the dramatic consequences of a collision on their lives. Young offenders are offered lower sanctions and an opportunity to be rehabilitated.

Campaigns and awareness raising

Numerous campaigns are run across Europe to raise awareness among young people¹⁸. For example, the European Night Without Accident (NESA) is an awareness campaign organised each year in nightclubs across Europe on the 3rd Saturday of October to encourage clubbers to designate a driver (BOB) who will not drink and will drive his friends home¹⁹.

Since 2006 ETSC is touring universities around Europe giving lectures on road safety, infrastructure and speed management. ETSC visited 77 universities in 24 countries to strengthen knowledge on road safety among students and encourage them to apply to take part in road safety competitions. 150 students were invited and 22 more will be to a week of integrated training in Brussels (the Camp) to discuss and develop their knowledge on speed, road infrastructure and road safety in general. Following the Camp, students work to implement

¹⁶ (Maycock and Forsyth, 1997) in OECD 2006

¹⁷ The MODULE CLOSE TO involved eleven EU countries which implemented the recommendations developed by the CLOSE TO project.

¹⁸ <http://www.cast-eu.org/> The EU funded project CAST developed a manual to design and implement a successful road safety media campaign

¹⁹ <http://www.europeannightwithoutaccident.eu/>

their road safety projects in their home countries. Through these projects, participants are invited to be road safety ambassadors and to pass their new knowledge on to their peers. Within **R2R**, "Roads to Respect" students were asked to treat a high risk site. Within ShLOW (completed in 2010) and **STARS**, "STudents Acting to Reduce Speed", students run a local speed management project with the support of ETSC and its partners across Europe was completed in 2010. Students have to conduct before and after speed measurements and all demonstrated marked speed reductions thanks to their actions. ETSC just started **BIKE PAL**. BIKE PAL will go on tour around Europe, reaching out to university students who will attend lectures on cycling safety and receive copies of a cycling manual. The students will have the opportunity to design and implement their project to improve cycling safety in their respective communities.
www.etsc.eu/R2R.php, www.etsc.eu/stars.php, <http://www.shlow.eu/>

Recommendations

The large numbers of young people killed or injured in road collisions constitutes a serious public health problem. Addressing this risk will be essential to efforts to meet the EU2020 and national road safety targets.

Member States should:

- Continue to research the causes of young, novice driver risk with a view to designing more effective countermeasures. Areas of particular focus should include the psychological competencies needed to drive safely; brain development in the prefrontal cortex; gender, including the role of testosterone, and whether young women's risk patterns are increasingly resembling those of young men; emotions; drugs; fatigue.
- Achieve high levels of overall road safety. Important road safety benefits for young, novice drivers will result from measures aimed at improving overall road safety. Safer cars and safer road infrastructure will reduce the risk of driving errors that might result in fatal collisions.
- Achieve effective legislation and enforcement in particular against the three main killers speed, drink driving and non use of protective equipment (seat belts and helmets).
- Improve training and licensing systems. The fundamental goal of pre-licence training and the licensing process should be to create drivers who are safe, and not just technically competent, by the time they are permitted to drive unsupervised. This will involve instilling novices with an appropriate cognitive skill level and safety-oriented motives. The primary goal of training should not be to help novices pass their driving tests. Based on existing knowledge, driving tests are currently unable to discriminate accurately between those drivers who will be safe and unsafe once they start solo driving, although they remain essential as a means of ensuring that novice drivers have essential, basic competencies.
- Seek improvements to formal training processes: expand the traditional method of skills-based instruction; ensure that professional driving instructors have the knowledge and

pedagogical skills necessary to guide and assist the candidate towards becoming a safe driver.

- Ensure high levels of experience, via accompanied driving, prior to licensing for solo driving.
- Reduce exposure to risk immediately following licensing for solo driving. Novice drivers should be subject to probationary periods in conjunction with stricter demerit points which make novice drivers subject to penalties (e.g. loss of licence) or rehabilitative measures (e.g. mandatory traffic risk awareness training) if they lose a certain number of points. Under any system, young, novice drivers should be subject to a specific BAC limit of at most 0.2 g/l. Limits on driving with peer passengers and/or at night have also shown themselves to be beneficial.
- Provide appropriate incentives and disincentives. I. e. support other countermeasures with stricter demerit point systems for young, novice drivers that provide a concrete disincentive to inappropriate driving behaviour and noncompliance with driving laws and licensing regulations; working with the insurance industry, conduct more research into the potential benefits of economic incentives by way of automobile insurance.
- Exploit the benefits of new technologies. I.e. young people would benefit the most from Intelligent Speed Assistance, alcolocks, seat belt reminders, black boxes and other intelligent protective systems, but because of limited resources they often drive older cars. Support the take up of intelligent technologies by young drivers.
- Recognise the benefit of improving public transport (buses, trains), support the introduction of reduced ticket prices for young people, offer alternatives to car driving at places and times when young people are partying.
- Engage parents and other role models. I.e. proactively inform parents about the degree of risk associated with their children's first driving experience, reinforcing the message that their behaviour will have an important impact on their children's future driving and safety.
- Understand the impact of popular media on road safety attitudes, in particular on young people's risk, including advertising, films, television and video games, and understand the impact of voluntary codes of practice for advertising.

EU institutions should

- Consider proposing a Directive for a maximum 0.2g/l BAC limit for novice drivers.
- Encourage Member States to introduce Graduated Driving Licence systems to address the high risks faced by new drivers thus allowing them to gain initial driving experience under lower-risk conditions between gaining the learner permit and fully licensed status.

- Encourage Member States to introduce special demerit point systems which make novice drivers subject to penalties (e.g. loss of licence) or rehabilitative measures (e.g. mandatory traffic risk awareness training) if they lose a certain number of points.
- Support integrating road safety into its youth and education policy giving this a high priority.

OECD (2006), Young Drivers, The Road to Safety.
ETSC (2008) Blueprint