



# Young Driver Safety: Solutions to an age-old problem

Elizabeth Box & Ivo Wengraf  
July 2013



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# Foreword

All parents worry about the well-being of their children during that difficult transition from adolescence to mature adulthood. They dread the thought that misadventure with drugs, alcohol or violent crime might destroy the prospects of their loved ones at the point that they strive for their independence.

What many parents do not realise is that by far the biggest risk to this age group is injury or death in a motor vehicle. But they probably know of the most appalling tragedies: a newly qualified, law-abiding driver takes three friends for an evening out and they run into a tree – often with no other vehicle involved.

Collision statistics and motor insurance records tell us very clearly that these are not isolated horror stories: this age group is heavily over-represented amongst the casualties on the roads.

This report summarises the evidence on why this might be. It notes the particular biological, psychological and social characteristics of people of this age that may be contributory factors. It discusses the arguments about the adequacy of our driver testing and the possibility that the best possible supervised skills training can only partly substitute for the realities of on-the-road experience. Throughout their development, young people discover where the boundaries are the hard way: through trial and error.

The document recounts the experience overseas with various forms of progressive driver licensing, whereby the new driver must be in the company of an experienced person for a period; or is prohibited from giving rides to peers; or is prohibited from driving in circumstances most dangerous for the inexperienced.

The good news is that, not surprisingly, we can improve on a system of young driver learning and qualification that has been subject to only a handful of changes since its introduction. The RAC Foundation hopes that this document will play a useful part in formulating reforms that will save many young lives.

Prof. Stephen Glaister



Director, RAC Foundation



# Executive Summary

## About this report

This report has been prepared by the RAC Foundation to provide a summary of the evidence on the mobility and safety needs of young people and the interventions that can be used to help encourage safe driving, in advance of the government's forthcoming green paper on young driver safety.

## Reliance on the car

In Great Britain 90% of all passenger miles are on the roads; 83% of these are by car, van or taxi. There are 35.2 million licensed drivers; this represents 72% of people old enough to acquire a licence. Some 75% of households have access to at least one car or van.

## How do young people use cars?

Is this reliance on the car true of the younger population? Yes and no. Today there are 2.9 million full licence holders aged between 17 and 24. In this age group, 59% held a licence in 1995, but this had declined to 46% by 2010. This is a much lower rate of licence holding in comparison to those aged 25 years old and over.

There is also a gender difference. Between 1995 and 2010, licence holding by young men reduced from 67% to 47%. Over the same period licence holding by women decreased from 51% to 45%.

The reason for these changes is likely to be related to a combination of: greater access to higher education; changes in employment patterns; increased costs relative to earnings (housing and motoring in particular); the rise of virtual mobility (use of technology to substitute for travel); and the shifting pattern of traditional life stages (e.g. leaving home, buying a house, childbirth).

## How do motoring-related costs affect licence-holding amongst young people?

It is now common for young drivers to be offered annual insurance policies at a price well in excess of the value of the vehicle insured, in stark contrast to most other drivers. This is largely because young drivers are a greater risk to themselves and others whilst on the road, and the accidents they are involved in produce greater numbers of expensive, 'catastrophic' insurance claims. The cost of learning to drive is also a significant consideration in licence acquisition, being cited by 54% of 17- to 20-year-old non-drivers as a reason for not driving. Against this background, undesirable activities such as

insurance fronting (getting insurance on the basis of a lower-risk 'main driver'), under-insurance and driving without insurance are all too common.

## **How will young people's car use change in the future?**

Being able to drive is important to young people. It allows for independent access to employment, shops and other services, particularly for those in rural areas. It has status value and offers a private space that may not be available elsewhere. The ability to drive can also be an important employment qualification. It is therefore important that any discussion on young drivers, particularly the road safety consequences of car use, acknowledges the mobility needs of this group, and the role of the car within this.

## **How safe are young drivers?**

One in five young drivers will have an accident within the first six months of passing their driving test, and a disproportionate number of young people are killed and seriously injured on Britain's roads.

Road deaths account for 0.5% of all deaths in Great Britain, but 25% of deaths amongst 15 to 19 year olds. Those aged 15 to 24 are four times more likely to die from a road accident than from drug, alcohol or other substance poisoning combined.

Young drivers (24 years and under) make up 25% of all those drivers killed or seriously injured on the road network, but account for only 8% of licence holders. Also they drive, on average, less than half as far as those aged 25 and over. Young drivers therefore are at significantly greater risk for every mile travelled by car.

## **When and why are young drivers at risk?**

Younger drivers tend to be most at risk when driving at night, especially over the weekend. Both urban and rural roads pose particular challenges to this group, as does driving with passengers and driving whilst impaired (by alcohol, drugs or other distractions).

Young people between the ages of 17 and 24 are undergoing significant biological change, which has psychological and behavioural implications.

Younger people have certain personality differences to their older counterparts, which makes them more susceptible to being involved in a collision. They are more prone to sensation seeking, impulsivity and aggression. They are also more likely to be influenced by external influences such as their peer group. Young people are also more likely to be affected by alcohol, drug, fatigue and distraction-based impairments.

This helps explain why the risk of crash involvement for a newly qualified 17 year old is almost twice as high as for a newly qualified 60 year old.

Experience quickly reduces crash risk for all age groups. Once a new driver has gained 1,000 miles of on-road experience their skills and safety are thought to be equivalent to drivers with three or more years' experience. Therefore the average 17.5 year old with 6 months' driving experience will be safer than a 60 year old who has just passed their driving test.

Gender is also important, with male drivers having more road crashes than female drivers at the 6-, 12-, 24- and 36month points after passing the driving test.

## **Today's young and novice driver licensing system**

Today's licensing system in Great Britain allows for independent car driving from the age of 17. There have been a number of changes made to the driving test since its introduction in 1935, including a theory and hazard perception test, a set of in-vehicle questions and an independent driving section. On average, learners take 52 hours of professional lessons before taking the practical test, and the average learning time is 14 months. The current pass rate is 47%. The collision record of new drivers indicates that the test is not working as effectively as it should, especially given that those who find it easiest to pass – young men – are more likely to have a collision.

## **Creating safer young novice drivers**

There are a number of ways in which the safety of young and novice drivers might be improved: education interventions (at school, pre-driver and post-test stages); improvements to the learning-to-drive and testing process; changes to licensing rules; and providing appropriate post-test support (e.g. telematics and technology, communications and publicity, engaging parents and adopting a safe systems approach to road development).

### **Education in schools**

Education interventions, although popular, have not generally been found to be effective at improving road safety. Attitudes to a range of public health issues are formed at a very young age. By the time a child reaches the age of 14 it is much more difficult to influence attitudes and behaviours. It starts to become more difficult after age 11. School-based education programmes have looked to address young people's attitudes and behaviours on road safety, with little demonstrable effect.

### **Pre-driver and post-test training**

Pre-driver education programmes are often short-term, small-scale and one-off, taking place as many as six years before real-world driving, making it difficult to establish how they influence future driving behaviour. Rather than improving young driver skills, there is the possibility that the programmes

preferentially involve highly motivated young people with responsible, better-off parents, who have a lower risk. Training for pre-drivers that primarily focuses on the technical aspects of driving can actually encourage speedier test passing and hence increase exposure to risk. Peer-to-peer discussion groups using active participation, personal experience and reflective thinking show some early promise for influencing attitudes and behaviours of young people.

Pre-driver education is best targeted at specific behaviours, contexts and individuals. The limited number of evaluations completed on post-test training courses has come to similar conclusions. An evaluation of the most well-known example in Great Britain – Pass Plus – found that drivers who completed the course had a marginally lower, and not statistically significant, crash rate.

### **Learning to drive and the driving test**

Today's learning-to-drive approach does not adequately address the risky behaviours that can lead to collisions. There remains a strong sense amongst those learning to drive that you only start to learn to drive once the test is passed, indicating that the test is seen as artificial by many. Increasing the amount of experience learner drivers gain under supervision has been found to be effective at reducing solo-driving licence liability, while training that focuses learning on attitudes, behaviours and hazard perception as well as physical driving skills can also reduce road safety risk. Peer-group-based discussions alongside traditional 'in-car' learning show some early promise. Minimum learning periods and logbooks to record hours of on-road experience and/or number of lessons have all been suggested as proxy mechanisms for increasing pre-solo driving experience.

### **Graduated driver licensing**

Graduated driver licensing (GDL) involves a staged exposure to risk for newly qualified drivers and is used by a growing number of driving licence jurisdictions to reduce novice driver exposure to risk, resulting in marked young driver casualty reductions. International research on a range of GDL schemes has found that fatal collisions amongst the vulnerable age groups studied have reduced 9–60%, and overall casualties for these same groups 5–32%. GDL schemes typically include rules on night-time driving, passenger restrictions, lower alcohol limits and vehicle power limits. It has been estimated that a GDL system in Great Britain would result in 81–114 fewer deaths and 538–872 fewer serious injuries annually (depending on the extent of night-time and passenger restrictions applied).

### **Supporting young people's driving**

Aside from road user education, the learning-to-drive process and licensing arrangements, there are a number of additional areas of activity that have a direct or indirect impact on younger driver action and road risk.

## Technology and information systems

These can help reduce driver risk and increase safe driving. Within this rapidly developing field, products and services including various forms of telematics (including telematics insurance products) and in-vehicle technologies (e.g. alco-locks, adaptive cruise control, lane departure warning and eCall) are either available or about to become available. Telematic systems that record key data on driving behaviour have been found to have a positive effect on high-risk groups such as teenagers and young males. Telematics is also being increasingly used by insurers to price premiums more closely to policy risk. Great Britain is considered a pioneer of 'pay-as-you-drive' telematics insurance products, but the market is in its infancy and faces major challenges, such as self-selection bias, potential adverse outcomes from curfews and public concerns about driver monitoring.

## Communication and publicity activities

Another part of the support environment, which helps to facilitate safe road use, are communication and publicity activities. Messages directed at drivers, pre-drivers and younger age groups need to be age appropriate and fit in the social environment within which young people find themselves. National communication activities have a role to play both in influencing social norms and in building up knowledge and understanding around hazard activities, particularly where there are legal consequences associated with actions (e.g. mobile phone use whilst driving and drink-driving). However, it has been suggested that rather than having a direct effect it is likely that public health campaigns may help to legitimise legislation by aiding with both public understanding and compliance. To understand fully the role of communications and publicity material, further research and evaluation are required.

## Parental influence

The influential support structures in young people's lives should not be forgotten when thinking about road safety attitudes. Parents are generally not fully aware of their affect as role models on the road. They tend to be inconsistent between what they expect of their children on the roads and their own behaviour. Parents' driving styles have an impact on teenagers' car safety behaviour and in particular the use of seat belts. Parental monitoring of the learning-to-drive and post-driving processes has also been found to influence positively their child's driving.

## Safe systems approach

In recent years there has been greater emphasis on a safe systems approach to road safety. Whilst the concept is not young-driver specific, it clearly has

benefits for this group as much as any other. The approach typically aims to develop a road system better able to accommodate human error. This is most commonly achieved through better management of crash energy, so that no individual road user is exposed to a crash force likely to result in death or serious injury. The safe systems approach sits at the heart of interaction between drivers, vehicles and roads.

## Conclusions

Having reviewed the evidence, the RAC Foundation recommends addressing the age-old problem of young driver safety through reforming driver training, the driving test and post-test licensing rules. There is a need to teach more than is currently assessed in the driving test to prepare young novice drivers for the situations and conditions that they find most hazardous or have little experience of. This should include a full range of driving conditions, night-time driving, driving in bad weather, on motorways and with passengers.

Whilst it is difficult to use the driving test on its own to ensure that younger drivers are safe, the test itself would benefit from sitting within a reformed GDL system. The RAC Foundation supports the introduction of a comprehensive package of GDL, which uses a three-stage licensing approach. This would ideally comprise a one year minimum learning period (supported by formalised syllabus, with varied experience recorded), followed by a oneyear intermediate stage, during which passenger restrictions and late night-time driving conditions were set at a level to balance mobility and safety concerns. A final full driving licence, with a two year probationary period for young drivers as is the case today, would make up the final stage. In addition the RAC Foundation would support a reduction in the general Blood Alcohol Content (BAC) limit for driving to 50mg/100ml blood for all ages. This would secure casualty reductions for both young people and the general population, providing supportive enforcement and publicity campaigns were in place to support.

The evidence to support a change in approach to driver training, the driving test and licensing rules is compelling. Change is now necessary to support the safe mobility of Britain's current and future young drivers.



# 1. Introduction

This paper has been prepared by the RAC Foundation to provide a summary of the evidence on the mobility and safety needs of young people and the interventions that can be used to help encourage safe driving.

The transport needs of young people are top of the policy agenda. A government green paper on young drivers is due to be published shortly and there has been much public and professional debate around the topic in readiness. The RAC Foundation has in this report focused on both the mobility and safety needs, and concerns of younger people.

This is a deliberate broadening of what tends to be a rather traditional road safety topic, to encourage a thorough debate on all the issues which affect younger drivers. Throughout the report young drivers is taken to mean 17- to 24-year-olds and novice drivers up to three years post-test, unless otherwise stated.



The report begins with a discussion on driving in Great Britain and how and to what extent young people use cars. The road safety record of young drivers is then provided, with research evidence summarised on why young drivers are less safe. The role of age, experience, biology, gender, personality, social norms and impairments are described. This is followed by a summary of the evidence for policy action around learning to drive, pre- and post-test learning, graduated driver licensing and the wider supporting environment (including telematics and technology, communications and publicity, the role of parents and implementing the safe systems approach). Conclusions are then drawn and recommendations made for improvements to today's learning-to-drive process and post-test support.



## 2. How Are Cars Used in Great Britain?

Transport in Great Britain is highly dependent on road transport, and thus significantly on the use of the car. Of all passenger miles travelled in Great Britain, 90% are on the roads. The bulk of those passenger miles on the road – 83% of the overall total – is by car, van or taxi.<sup>1</sup> Of all distance travelled in Great Britain by all modes, including walking, 79% is in a car, either as the driver or passenger.<sup>2</sup> There are 35.2 million licensed drivers in Great Britain, which is 72% of all people old enough to acquire a licence.<sup>3</sup> These drivers drive 28.7 million cars.<sup>4</sup> 75% of households have access to at least one car or van.<sup>5</sup>

Journey purposes for car or van travel can be broken down as follows: 29% are for leisure, 20% for business or commuting, 20% for shopping, 13% for driving someone else to different destinations, 10% are personal business, and 7% are for accessing education (either directly, or driving others).<sup>6</sup>

1 DfT (2012d), Table TSGB0101

2 DfT (2012a), Table NTS0302

3 DfT (2012a), Table NTS0201

4 DfT (2013d), Table VEH0101

5 DfT (2012a), Table NTS0205

6 DfT (2012a), Table NTS0409

The car is not simply the preserve of the better-off: even amongst the 20% of households with the lowest real incomes, 51% still have at least one car.<sup>7</sup> The importance of the car to this part of society is made clear by the high proportion of trips as a car driver or passenger compared to public transport: 64% of trips compared to 9% by bus and rail. In addition, the poorest quintile – the least likely group to have a car – make more trips by taxi/minicab as a proportion of their travel (2%) than any other income group.<sup>8</sup>

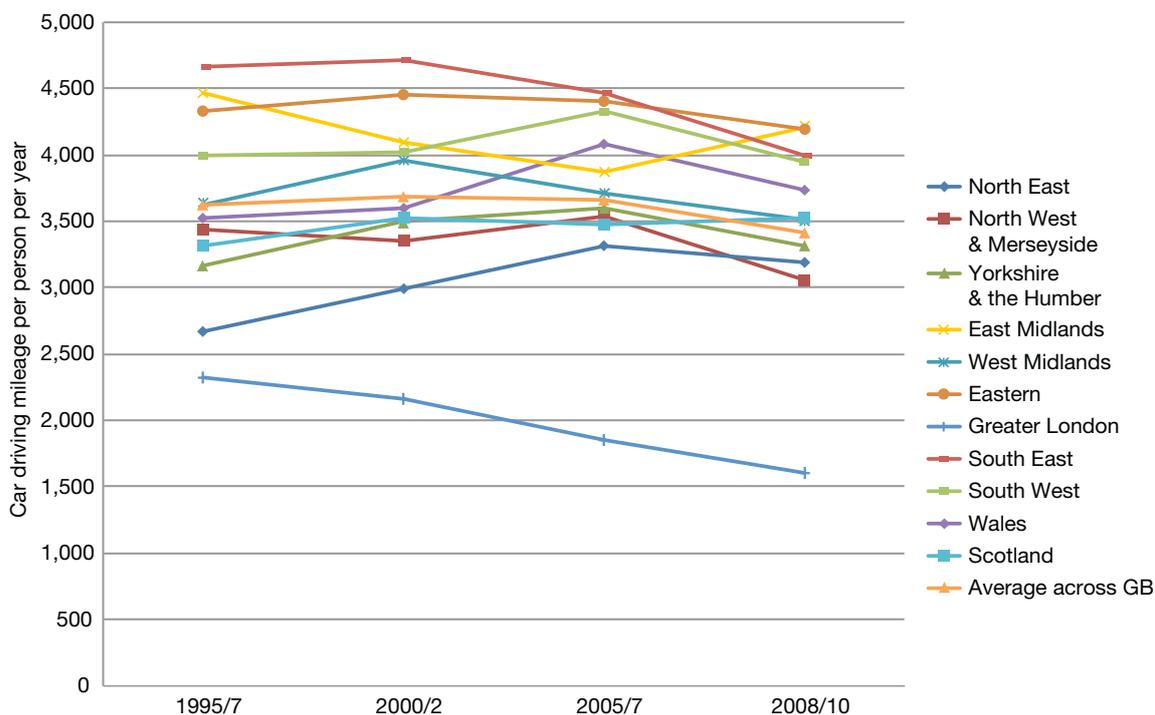
It is important to note that viewing these figures solely at a national level can mask significant regional variation. In Figure 1, car mileage per capita per year is shown on a regional basis.

7 DfT (2011a), Table NTS0703

8 DfT (2012a), Table NTS0705



**Figure 1: Car mileage per person, by region**



Source: Adapted from Le Vine & Jones (2012: 61)

The good accessibility to services in London and other urban areas conceals a higher need to travel – and travel independently – in other parts of the country. This can be seen in several ways. In licence-holding, 87% of rural dwellers old enough to hold a licence do so, compared to 62% of Londoners.<sup>9</sup> Of rural households, 91% have at least one vehicle, whereas only 57% of Londoners and 68% of those in the nation’s other large metropolitan areas do so.<sup>10</sup> The average rural inhabitant – all ages, driver or otherwise – does 8,450 miles per year as a car driver or passenger, compared to a GB average of 5,551 miles.<sup>11</sup>

The car is also relied on by many for the journey to work. According to the 2011 Census, of those aged 16 to 74 in England and Wales who work – including those who walk to work and those who work at home – 64% travel to work by car or motorcycle (as driver or passenger) (ONS, 2012). Outside London, that increases to 70%. Although other convenient modes of access to work and services exist, especially in the large urban areas, restrictions in modal choice for one particular section of the population – the young – clearly can have exclusionary outcomes (Social Exclusion Unit, 2003).

9 DfT (2011a), Table NTS9901  
 10 DfT (2011a), Table NTS9902  
 11 DfT (2009), Table NTS9904



### 3. How Do Young People Use Cars?

Great Britain has been experiencing significant shifts in how younger people travel – both in the degree to which they travel and the modes they use. Work published by the RAC Foundation has shown how Great Britain – along with certain other countries with high car use, like Germany and the USA – has seen a shift in transport behaviour (Le Vine & Jones, 2012).

This change is most apparent in the so-called 'Generation Y' cohort: the segment of the population broadly defined as those born from the early 1980s onwards. This part of society has experienced significant changes in social and economic conditions compared to previous generations, and with that, changes in its use of transport.





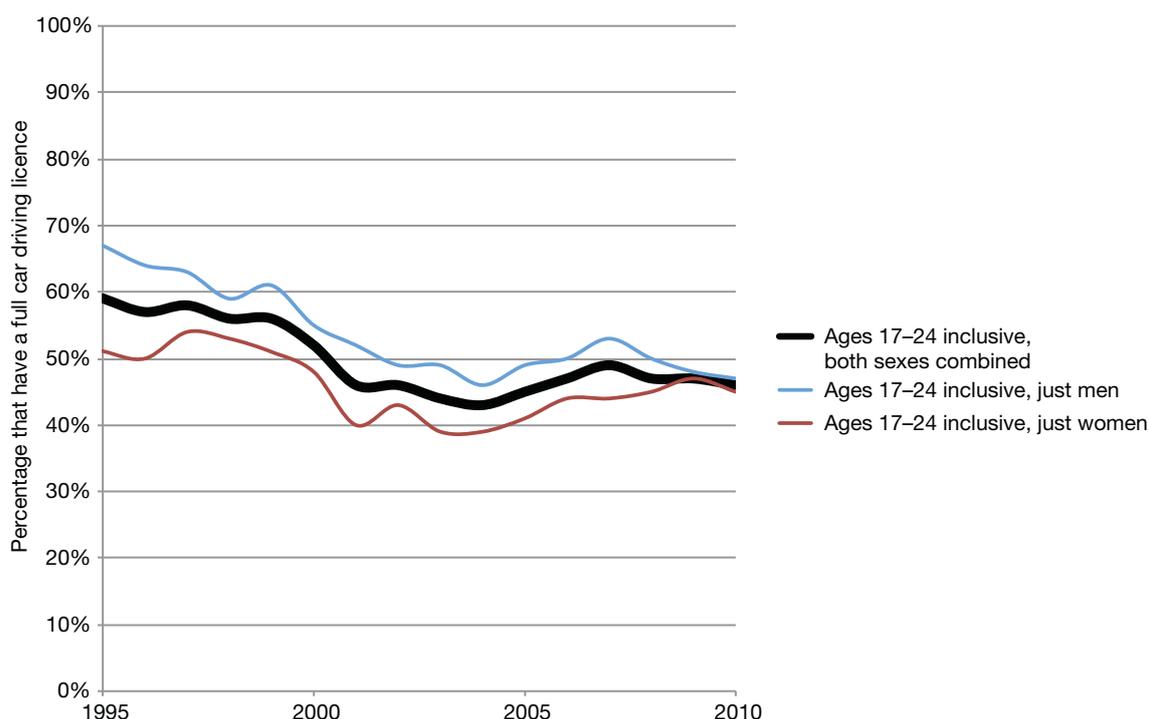
These changes have included marked declines in average car driving mileage per person for younger men since 1995, while young women have only experienced slight declines in car driving mileage per capita over the same period. About a third of the decline in private car mileage of men in their 20s between 1995/7 and 2005/7 was a reduction in visiting friends and relatives in private homes (Le Vine & Jones, 2012). These changes, amongst other shifts for young people in travel behaviour, have been attributed to a number of changes, including:

- a significant increase in experience of higher education (and often therefore increased urbanisation);
- a decline in licence acquisition;
- changes in employment patterns; and
- increased costs relative to earnings. This increase in costs is particularly apparent in housing and motoring costs.

In recent years, there has been a decline in licence-holding by younger people in Britain. According to the Driver and Vehicle Licensing Agency (DVLA), in February 2013, full car licences were held by 2.9 million 17- to 24-year-olds in Great Britain (DVLA, 2013). The National Travel Survey (NTS) shows a decline over time in young driver licence-holding, especially amongst young male drivers, who are also the highest insurance risk group.<sup>12</sup> While fewer young men are acquiring licences, a greater proportion of young women are getting full licences (Figure 2). Young women's licensing levels have reduced since the 1990s, but less sharply than those of men. Today, the gender gap in licence-holding between teenage men and women has largely disappeared.

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<sup>12</sup> DfT (2012a), Table NTS0202

**Figure 2: Proportion of 17- to 24-year-olds holding a full car licence**

Source: Le Vine et al. (forthcoming), based on NTS (DfT, 2012a)

Trends in how and how much younger people travel, especially in terms of the degree to which they choose to drive, is the subject of great debate in transport and public policy. Given the significant changes in circumstances experienced by this cohort compared to earlier ones (e.g. changes in access to higher education, higher costs of housing, poorer employment prospects), projections for the future are by no means clear. The rise of virtual mobility, social networking and smartphones has certainly altered the need for transport and how travel time is used and valued by travellers. Yet it is also clear that younger people are less independent than their forebears, often living with parents for a longer period of time – and are thus deferring certain costly activities (e.g. home ownership and licence acquisition) in comparison to past cohorts.

Furthermore, the ability to drive is very likely to remain important for many to:

- access employment;
- access services;
- perform work where this directly involves driving; and/or
- meet an employment qualification, where a licence may be used as part of the job application.

The importance for young people of being able to drive is particularly clear for those outside the large cities and for those working (or looking to work) in industries dependent in one form or another on the ability to drive (Joseph Rowntree Foundation, 1999). It is especially important for lower social groups for whom driving for a living provides access to work.



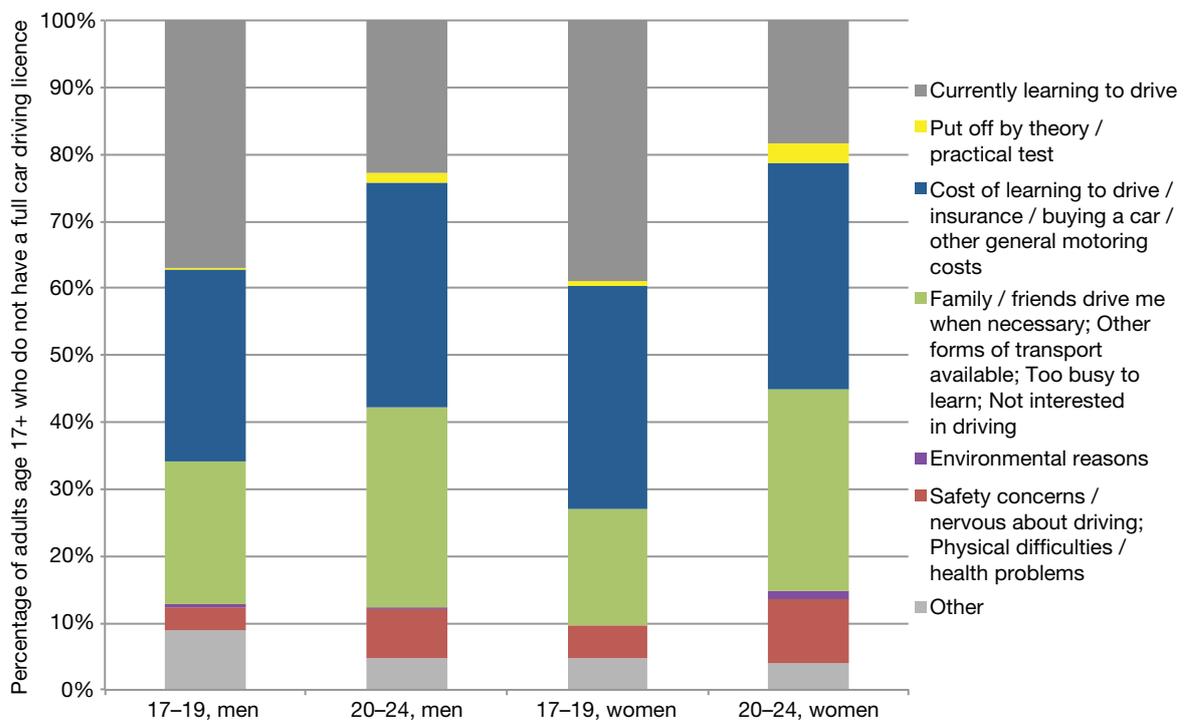
## 4. How Do Costs Affect Licence-holding Amongst Young People?

There are a number of reasons relating to costs as to why young people do not hold a driving licence. Analysis of NTS data (Figure 3) on the self-reported main reasons for not being a driver breaks down what are given as the key barriers to entry for the 17–24 age group. Costs of motoring (including insurance costs) and driver education (e.g. lessons and training costs) are given as the key barriers to entry for this group.





**Figure 3: Self-reported main reason for not driving, by sex and age**

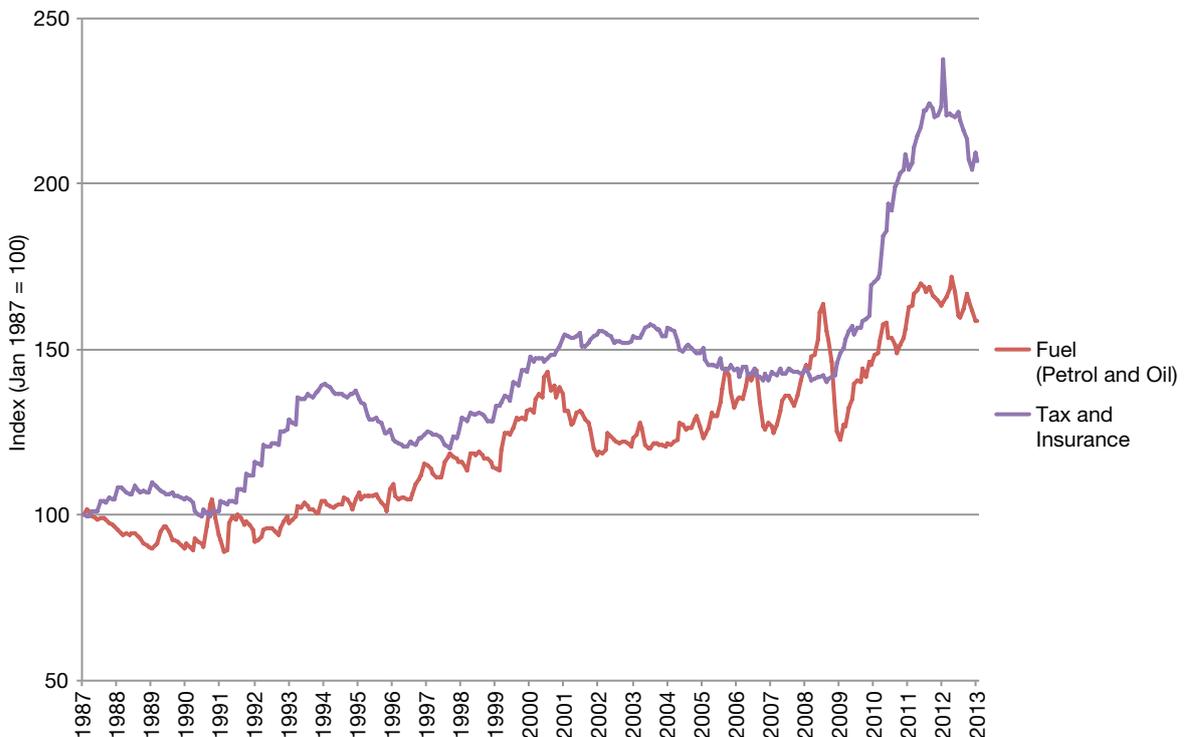


Source: Le Vine et al. (forthcoming)

The costs younger drivers face in Great Britain are some of the highest in Europe. A survey of European motoring clubs in 13 countries conducted by the FIA (Fédération Internationale de l'Automobile) (Pascotto, 2012) showed that average learning and examination costs for the UK (around €1,650 / £1400) were higher only in Germany (at around €1,700 / £1450) and the Netherlands (at around €2,300 / £1,950), with some EU countries up to approximately €1,000 / £850 less expensive.

Insurance costs, relative to other motoring expenditure, and relative the basket of 'all items' which make up the Retail Price Index (RPI), have increased. Figure 4 shows how fuel costs and tax and insurance have increased above the rate of inflation. This increase is especially prominent in the premiums available to those under the age of 25. Before European equality legislation came into effect in December 2012, young men paid more for their insurance premiums given their higher road safety risk. Six months on from the introduction of gender-neutral pricing, the average comprehensive motor insurance premium for 17- to 20-year-old women has risen by 32% – more than £500 (Confused.com/Towers Watson, 2013). The effects this will have on female car access and licensing rates remains to be seen.

**Figure 4: 'Fuel' and 'Tax & Insurance' price indices relative to 'Prices of All Items', RPI, 1987 to 2013 (Jan 1987 = 100)**



Source: ONS (2013)

It is now common for young drivers to be offered annual insurance policies well in excess of the value of the vehicle to be insured, in marked contrast to most drivers in other age groups.

High and increasingly expensive insurance premiums for younger drivers have been the subject of much debate. Premiums are generally high because young drivers are of significantly greater risk to themselves and others compared to drivers of other ages, and, as road vehicle safety and emergency medicine has

improved, there has been an increase in road collisions involving young drivers where people, very often young, have been seriously injured and have therefore required long-term care after a collision. A result of this is an increase in expensive, ‘catastrophic claims’ (i.e. in excess of £500,000), which has raised insurance costs in this age group in particular (ABI, 2012).

This high and increasing cost of insurance for young people has a number of implications. These include:

- **Barrier to entry:** Recently, there has been a decline in young driver licence-holding, and according to the NTS, cost-related factors are the main barrier to learning to drive for the young. Of those aged 19–24, 32% gave costs (learning to drive, insurance, purchase and other motoring costs) as the main reason for not driving. By comparison, a further 29% explained that they were currently learning to drive, and 24% either had others to drive them, alternative modes available, were too busy to learn or not interested. Given the available evidence, insurance costs (along with other motoring costs) look to be a significant barrier to young people learning to drive (Le Vine et al., forthcoming).
- **‘Fronting’:** Unaffordable insurance costs are used by many young motorists to justify being inappropriately insured. Fronting insurance describes the situation in which a young driver – who plans to drive a vehicle as the main driver – will get insurance on the basis of the name of a lower-risk driver (usually a parent) given to the insurer as the ‘main driver’. It is clear that this fraudulent activity is common and often thought of as normal: 53% of the public think that it is acceptable or ‘borderline’ acceptable behaviour to engage in this form of deception (ABI, 2011).
- **‘Under-insurance’:** High insurance costs may encourage drivers to minimise up-front costs by choosing a less expensive third party policy only, when they would otherwise have a more extensive insurance policy.
- **Driving without insurance:** According to the DVLA, about 7,500 drivers with up to three years of driving experience – novice drivers – lose their licence each year for driving without insurance. These figures only include novice drivers who have been caught and convicted. Only about half of the drivers who have their licence revoked ever properly become re-licensed (House of Commons Transport Committee, 2007). Uninsured driving has a clear impact on the cost of motor insurance for the insured driver population. The Motor Insurance Bureau (MIB)<sup>13</sup> estimates the annual cost of uninsured driving to be £400 million, adding between £15–£30 annually to each motor insurance policy (MIB, 2013a; 2013b). In addition, being an unlicensed driver is also a predictor of increased crash risk (Clarke et al., 2008; Knox et al. 2003). Knox et al. (2003) estimate that unlicensed driver crash risk is between 2.7 and 9 times greater than the risk for all drivers.

13 The MIB was established in 1946 as a central fund to provide a means of compensating the victims of road accidents by negligent, uninsured and untraced drivers. The MIB is funded by all UK motor insurers. Motor insurers are only allowed to operate if they belong to the Bureau and pay a share of its costs. The ultimate cost falls to law-abiding motorists via their insurance premiums (MIB, 2013a).

There is a real lack of understanding amongst young people on why insurance costs are high. Recent work commissioned by the Department for Transport (DfT) established that uninsured drivers are anxious about being caught by the police rather than being concerned about the implications of any crash, stating that they drive more cautiously for essential journeys only (Watt et al., 2013).

The bulk of younger non-licence-holders do intend to acquire a licence at some point in the future. According to the NTS, 90% of 17- to 20-year-olds think it likely that they will have a licence within the next year or within the next five years (DfT, 2012a: NTS0204). Given this, it may well be that as costs have risen for this cohort and wealth and need for travel has declined, younger people are coping by deferring the age at which they begin driving. It is worth noting the risk of an increase of unlicensed and/or uninsured drivers in an environment of very high costs and few practical alternatives.



## 5. How Safe Are Young Drivers?

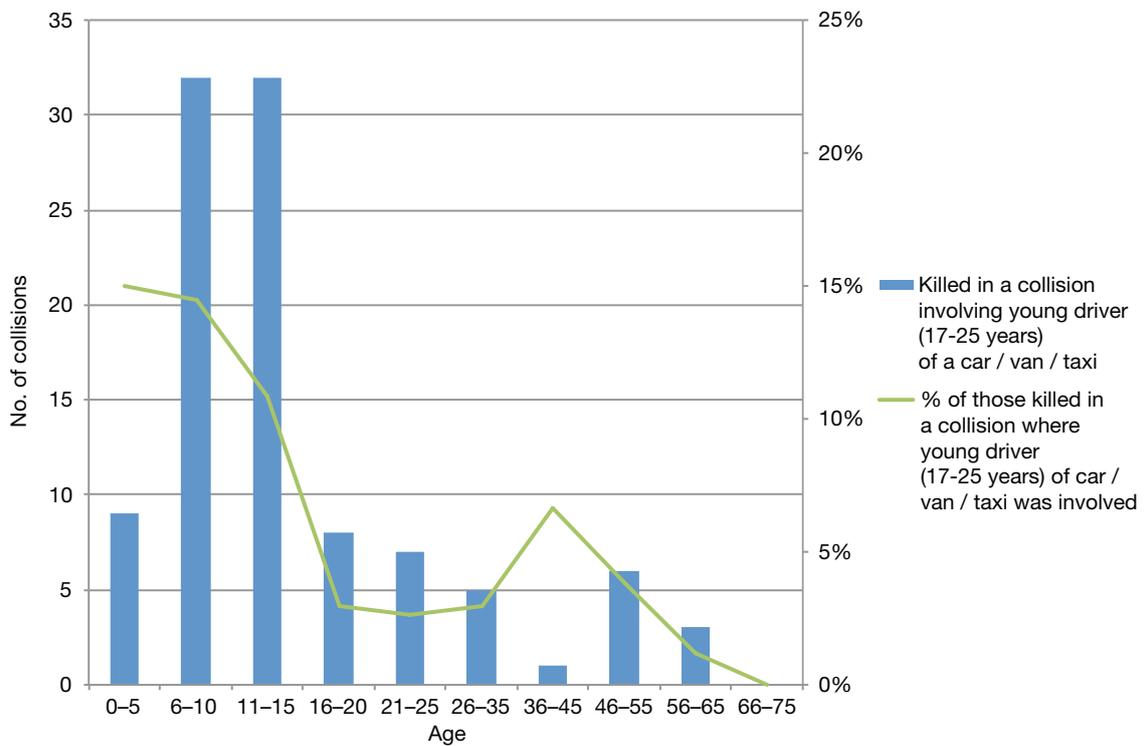
Road casualties are largely preventable. Road deaths account for 0.5% of all deaths in Great Britain, but 25% of deaths amongst 15- to 19-year-olds. Those in the 15–24 age category are also four times more likely to die from a road traffic collision than from drug, alcohol or other substance poisoning (Box, 2011).

Young drivers, and those involved in collisions with young drivers, are significantly over-represented in the road safety figures in Great Britain. In 2011 young drivers made up 25% of all those drivers killed or seriously injured. Young drivers are only 8% of the full-licence-holding population, and drive, on average, less than half as far as those aged 25 and over (Figures 5 and 6).





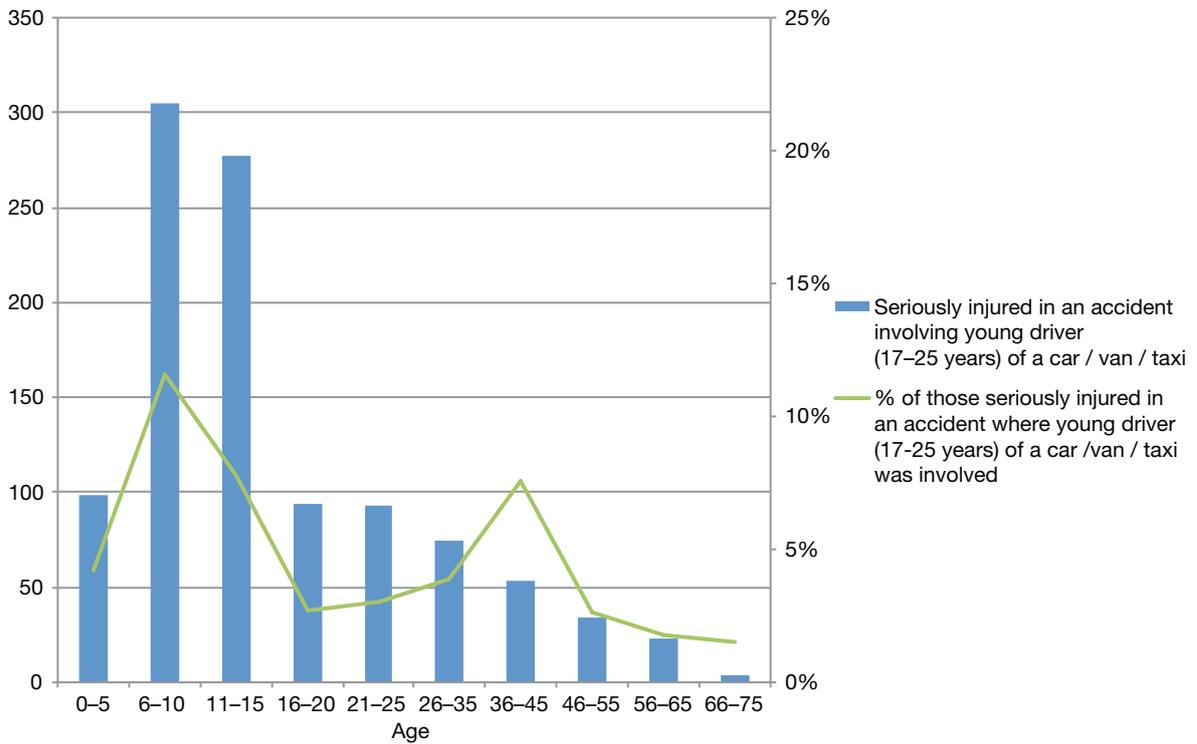
**Figure 5: Fatalities in collisions involving a young driver (17-25 years) of a car/van/taxi, 2011**



Source: STATS19 (DfT, 2013b)



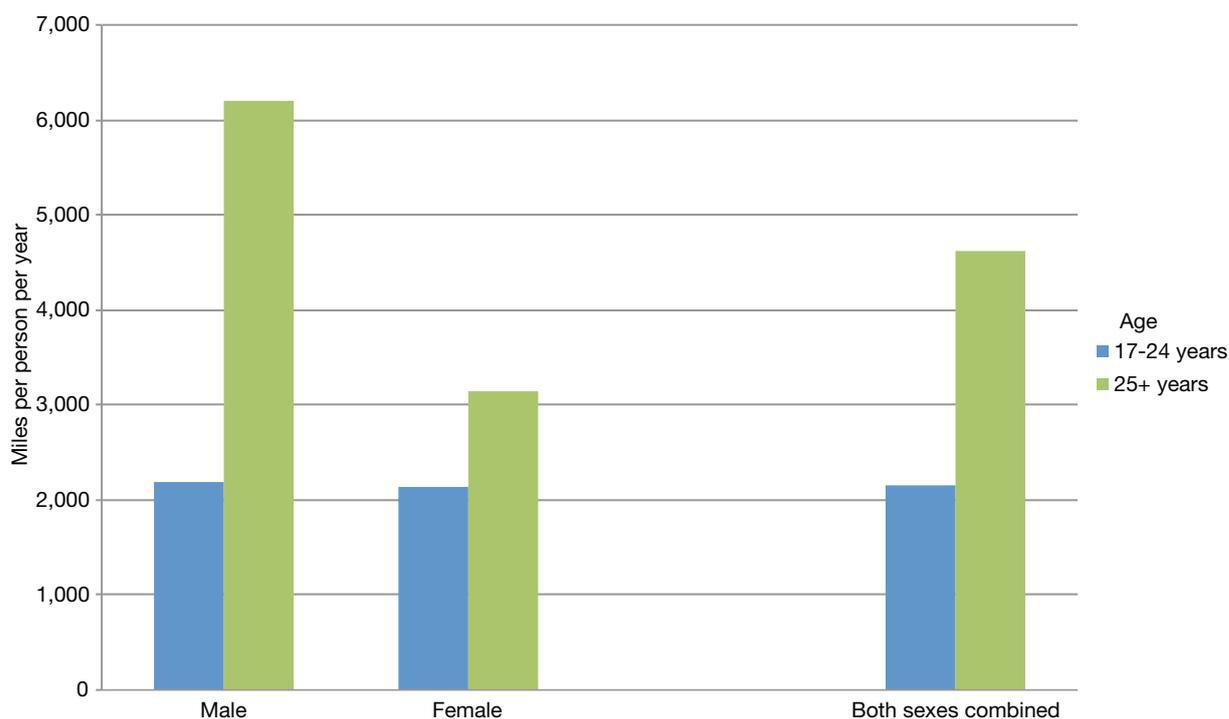
**Figure 6: Seriously injured<sup>14</sup> in collisions involving a young driver of a car/van/taxi, 2011**



Source: STATS19 (DfT, 2013b)

<sup>14</sup> Seriously injured defined as 'in-patient' injury or any of the following injuries regardless of hospitalisation: fractures, concussion, internal injuries, crush injuries, burns (excluding friction), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident (DfT, 2013b).

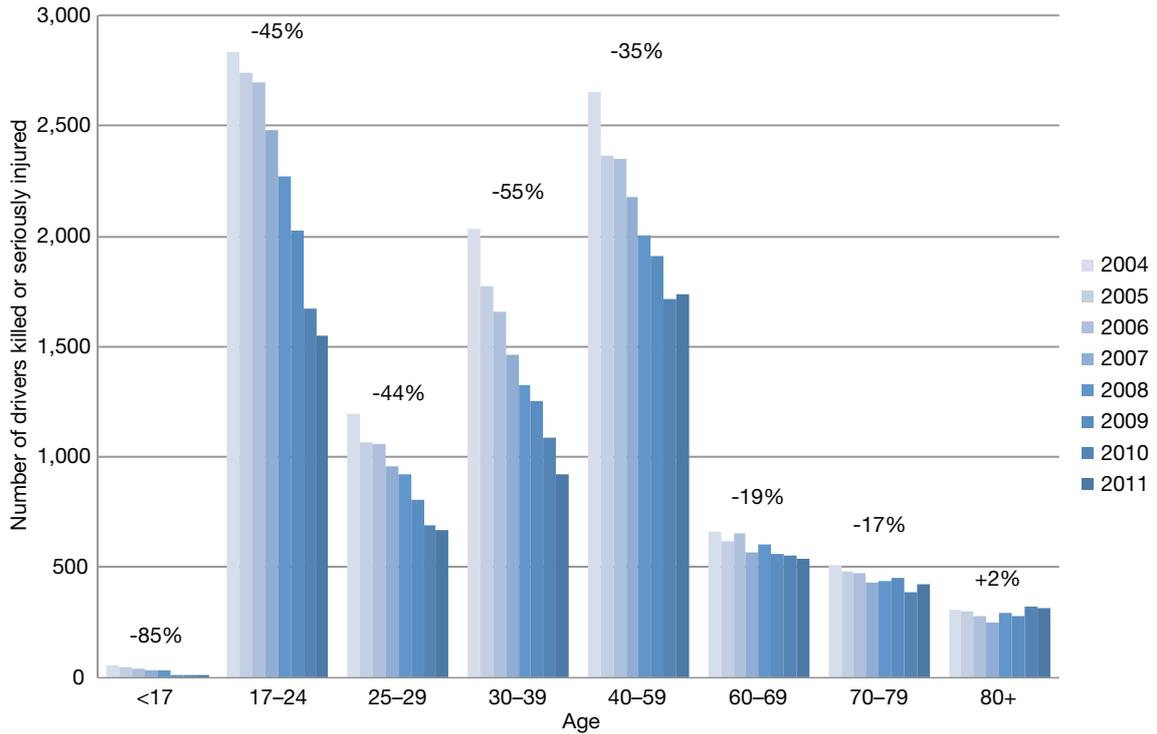


**Figure 7: Average miles travelled annually by age in car/van, GB 2011**

Source: DfT (2012a), Table NTS0605

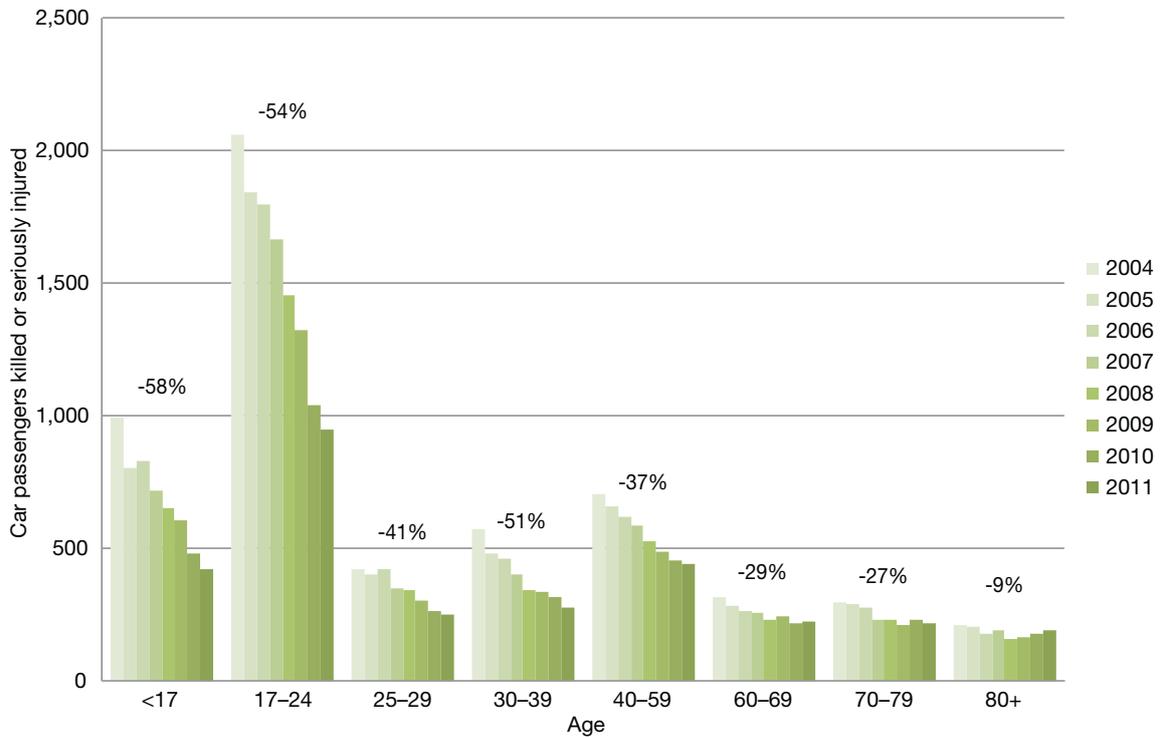
Despite the high number of fatalities associated with young drivers, there has been a substantial downward trend in the number of killed and serious injuries since 2004 (Figures 8 and 9). The number of young drivers (aged 17–24) killed in road traffic collisions has decreased by 48% from the 2005–9 average, and fatalities of younger drivers' passengers went down by 54% (DfT, 2012b). The number of casualties killed in young driver collisions (other vehicles and pedestrians) fell by 39%. To some extent, the driving factor in this decline is unknown, although recent work by the Transport Research Laboratory (TRL) (Lloyd et al., 2013) suggests that death reductions are largely due to decreases in road traffic (especially heavy goods vehicles) and a decline in young male drivers.

**Figure 8: Reported car drivers killed or seriously injured by age, GB 2004–11**



Source: DfT (2012b)

**Figure 9: Reported car passengers killed or seriously injured by age of passenger, GB, 2004–11**



Source: DfT (2012b)



## 6. In What Circumstances Are Young Drivers At Risk?

Young drivers have been found to be more at risk in the following circumstances.

- **Driving at night, over the weekend:** The timing of crashes involving young people mirrors the patterns of all drivers, with crashes more likely on Fridays, during the morning and evening rush hours, and at the weekend. However, there is an increased likelihood of young driver collisions happening on Friday and Saturday nights between 8 p.m. and 4 a.m. (DfT, 2011b).
- **Negotiating bends (rather than junctions):** In 2011, negotiating a road bend accounted for 15% of young car driver manoeuvres immediately prior to a collision compared to 10% of older car drivers (STATS19 – DfT, 2013b), which may in part be due to the nature of the road the collision occurs on (i.e. road bends occurring more often on rural roads).
- **Travelling on urban roads:** The majority of young driver collisions happen in urban areas (54%) (STATS19 – DfT, 2013b), though (as noted below) they tend to be less serious collisions than on rural roads.
- **Driving on rural roads:** Whilst the majority of collisions involving young drivers take place in urban areas, fewer but more serious crashes occur on rural roads (DfT, 2011b). Of casualties in urban areas, 8% are killed and seriously injured, compared to 12% in rural areas. Young drivers from rural areas are at greater risk, due to a combination of inexperience and increased exposure to risk, through higher mileage and the types of road on which they drive (Fosdick, 2012).



- **Driving with passengers:** On average, a higher number of casualties result from a collision involving at least one young driver. Passengers of young drivers are more likely to be killed or seriously injured than car passengers travelling with older car drivers. Passengers involved in collisions with young drivers tend to be of a similar age (DfT, 2011b). Young driver collisions are five times more likely when carrying one passenger than collisions involving older drivers (Jones et al., 2012).
- **Impaired by alcohol:** Being impaired by alcohol was attributed to 4% of collisions involving young drivers, in comparison to 2% for older drivers. In 2008, young car drivers had more drink–drive collisions per licence-holder and per mile driven than older age groups in 2008. Of young drivers assigned ‘impaired by alcohol’ as a contributory factor in their collision, 66% were male (DfT, 2011b).
- **Impaired by drugs:** Illicit drugs are, in general, mainly detected among young male drivers, during all times of the day but predominantly at weekends (Wolff et al., 2013).



# 7. Why Are Young Drivers Unsafe?

The literature suggests a number of reasons why young novice drivers present a safety concern. These can be summarised as being associated with:

- the biological characteristics of younger people;
- norms, values and competencies;
- impairments;
- hazard anticipation on the road; and
- task demands and exposure.





These categories are described in more detail in Table 1 below (cf. Vlakveld, 2011), which shows how individuals behave in a sociotechnical environment. In taking a safe systems approach to road safety, the regulatory framework, vehicle and environmental design as well as enforcement also features in addition to the issues raised in Table 1.

**Table 1: Factors influencing the crash rate of young novice drivers**

Biological aspects (Nature)	Age brain development	Gender	Personality	Physical and mental constitution
↓				
Norms, values/ Competencies (Nurture)	Youth cultures Lifestyles	Peer group influences	Education Driver training	Socioeconomic and cultural background
↕				
Capabilities/ Acute impairments	Alcohol/drugs	Fatigue	Distraction/ inattention	Emotions
↕				
Hazard anticipation in traffic	Scanning	Detecting	Recognising	Predicting
	Self-assessment	Risk assessment Risk acceptance	Decision-making/ Action selection	Task execution
↑				
Task demands/ Exposure	Speed/vehicle	Other road users	Road and road environment	(Weather) conditions

Source: reproduced from Vlakveld (2011: 22)

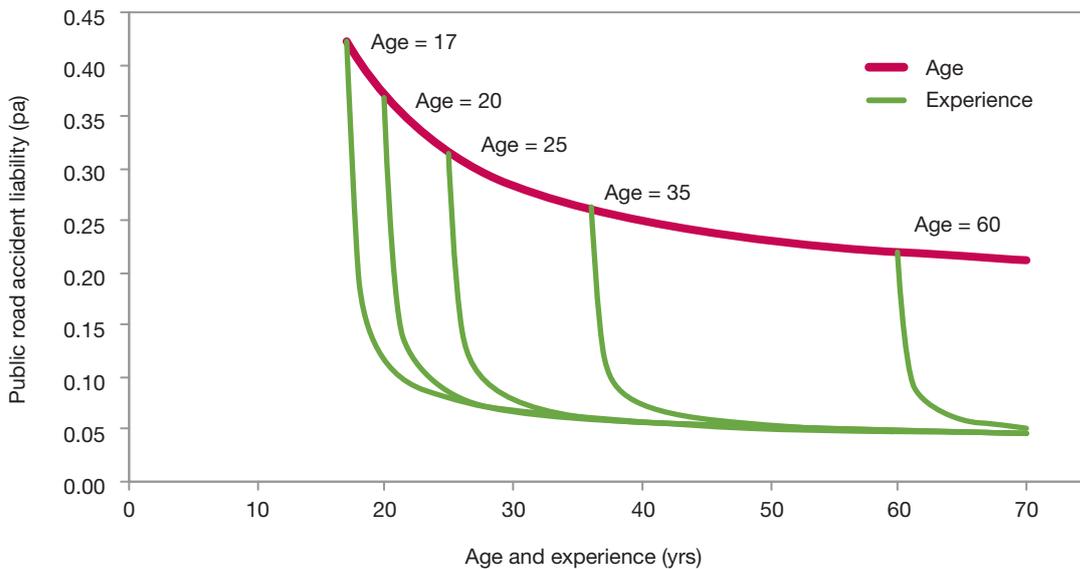
Of all the factors, it is well documented that young drivers are at greater risk on the road due to:

- experience;
- age; and
- gender.

## 7.1 Age vs experience

The universal problem with young and novice drivers is that of experience (OECD, 2006). Inexperience explains much of the high levels of young driver risk, and as demonstrated in Figure 10, it has a greater effect on collision liability than age of licence-holding alone. The risk of crash involvement is far greater for newly qualified young drivers than for newly qualified older drivers.

**Figure 10: The affect of age (at passing test) and experience on collision involvement**



Note: This data is presented for respondents with an average of 7,500 miles per year. On the graph, 'age' relates to the age of licence acquisition.

Source: Emmerson (2008)

The green lines show how the risk declines with increasing age and experience for those obtaining a licence at age 17, 20, 25, 35 and 60 years. Those learning to drive at age 17 have a crash involvement rate which is almost 50% higher than those learning at age 25, and around double the level of those learning to drive at age 60.

Regardless of age at licence acquisition, accident rates decrease sharply during the first six months of post-test independent driving (Wells et al., 2008). This is supported by statistics which show that a higher proportion of young drivers have cited 'learner' or 'inexperienced' or 'loss of control' as contributory factors in their collisions (DfT, 2011b). Being involved in a collision has been found to modify driving behaviours and attitudes (Sexton & Grayson, 2009), which also supports the notion of experience being an important predictor of collision involvement. A number of studies have found that the first 1,000 miles driven by a new driver maybe the most important for reducing collision risk (Helman et al., 2010). After novice drivers gain 1,000 miles of post-licence experience, they begin to show similar physiological responses to developing road hazards in video clips to those shown by experienced drivers who have three or more years of post-licence driving (Kinnear et al., 2009, in Helman et al., 2010).

In the following sections, each area of risk for young drivers is taken in turn and discussed.

## **7.2** Biology

Younger people's biology is different to that of older people, and this can have an impact on road safety. The period of 17 to 24 years covers a time of significant biological change. Young drivers begin to learn to drive while still in adolescence. The neuroendocrine process in adolescence that causes physiological changes also leads to behavioural change. The changes brought about by adolescence alter attitudes to risk-taking (Vermeersch et al., 2008; Spear, 2000). For males, this can lead to riskier behaviour, and for females, to socialising with higher-risk peers.

It is worth noting that adolescence occurs at different ages for males and females, with males maturing later. This might go some way to explain the increased risk for young males over young females. Adolescence is a period of sociobehavioural transition where certain riskier behaviours are more prominent than during other stages of life. These include susceptibility to the influence of friends (peer pressure), optimism bias (bias towards believing one is less likely to experience a negative event than others), sharp changes of mood, novelty-seeking and attention-seeking. Evidence of these tendencies appears at age 11 (Deighton & Luther, 2007), peaks at 17 and decreases towards 25.

Along with changing bodies, adolescence is a period of brain development. Longitudinal studies of the development and composition of the brain have shown that the brain may not be fully developed until about 25, and that certain skills one might associate with safer driver are not fully developed by the legal driving age, including planning and impulse control (Giedd, 2004; 2008). This area of research is new and developing; further work is required to ascertain the link between these differences and increased safety risk. However, it is clear that determining what age constitutes being an adult in terms of driving

is a complex issue. The emotional appraisal of driving hazards and how this changes with age is demonstrated by the following case study.

### **Young novice drivers and the development of somatic markers for risk on the road**

**Aim:** To establish what drivers are learning.

**Method:** Literature review of decision-making literature and neurological theory and two studies to investigate novice and experienced drivers' emotional appraisal of hazards by measuring skin conductance.

**Findings:** The results suggest that novice drivers fail to emotionally appraise developing hazards when compared to experienced drivers. It was demonstrated that novice drivers who had driven less than 1,000 miles had physiological anticipatory scores similar to learner drivers, whereas novices who had driven more than 1,000 miles had scores approaching those of experienced drivers. This results in an emotional learning curve mediated by driving experience.

Source: Kinnear & Stradling (2011)

## **7.3 Gender**

The gender of the driver is an important factor in young driver safety. Wells et al. (2008) found that male respondents self-reported more road collisions than female respondents at 6, 12, 24 and 36 months after passing the test. The incident of collisions change more sharply with the age of passing the test for male drivers than for female drivers – after controlling for the effects of differences in driving exposure (Emmerson, 2008).

Young male drivers are more likely to be described in collision statistics collected by police as 'careless, reckless', 'in a hurry' or 'exceeding the speed limit' when involved in a crash than female drivers in STATS19 contributory factors data. Young female drivers are slightly more frequently assigned factors such as 'nervous', 'uncertain', 'panicked' or 'failed to judge other person's path or speed', although the percentage difference is small (DfT, 2011b).

## **7.4 Personality**

Younger people show certain differences in personality to older people. They are more prone to sensation-seeking, impulsivity and aggression. They are also more likely to be influenced by thinking that outcomes are determined

by factors beyond their control. Vlakveld (2011) examines personality traits by applying a model of personality using five characteristics: (1) openness to experience, (2) conscientiousness, (3) extroversion, (4) agreeableness, and (5) neuroticism. Low levels of agreeableness and conscientiousness were correlated with collision involvement, and these characteristics improved as people moved into their mid-20s.

The personality characteristics of young drivers have been researched extensively, examples of which are included in the following report case studies.

### **Feeling safe, itching to drive: Pre-driver and learner perspectives on driving and learning**

**Aim:** To understand young pre-drivers' and learners' definitions of good driving and their expectations and/or experiences of the learning process.

**Method:** Series of workshops with young pre-drivers and learners (aged 17-25), parents and approved driving instructors (ADIs). 120 participants across 16 workshops.

**Previous research findings for testing:** Being a good driver seen as mastering three different and parallel kinds of activity; namely driving as a physical, social and emotional activity (Christmas, 2007).

**Workshop findings:** Good driving and good learning discussed with groups. Learning to drive was described as having two basic elements: mastering the activity of driving and getting the right attitude. The different personality characteristics of young drivers were summarised into five segments:

- rule observers: good driving is about following rules and standards;
- risk minimisers: good driving is risk-free driving;
- good neighbours: good driving is sociable driving;
- God's gifts: good driving is confident driving; and
- nightmare drivers: good driving is entirely irrelevant.

Source: Christmas, 2008

### **Relationships between young drivers' personality characteristics, risk perceptions, and driving behaviour**

**Aim:** To investigate the strength of relation between personality facts, risk perceptions, and driving behaviour among young, mainly inexperienced drivers.

**Method:** Online questionnaire completed by 159 students aged 17-20 assessing five facets of personality, four components of risk perceptions, and on measure of driving behaviour.

**Findings:** Using structural equation modelling as a means of assessing the overall fit of each model, 39% of the variance in young drivers' speeding was accounted for by Excitement-Seeking, Altruism, their Aversion to Risk Taking, and their own likelihood of having an accident, with Altruism and Aversion to Risk Taking both showing moderate negative relationships. The study recommended that road safety interventions should examine whether they strengthen young drivers' appreciation of the impact of their actions on others through positive reinforcement of altruistic norms.

Source: Machin & Sankey (2008)

#### **7.4.1 Social norms**

The social environment around individual young drivers has an important impact on their safety on the road. The car is more than a mode of transport, especially for the young. It constitutes a symbol of adulthood, an opportunity for independent mobility. It has status value and offers a private space that may not be available elsewhere. However, there is also mounting evidence that the car is less of a status symbol for younger than older people. A study, conducted in December 2012 by KRC Research (2013), reveals that mobile devices and on-demand transportation apps are more important to 'Millennials' (18- to 34-year-olds) than car ownership, with nearly two in three (65%) of this group saying losing their phone (30%) or computer (35%) would have a greater negative impact on their daily routine than losing their car (28%).

Research also indicates that youth cultures and lifestyles may not be conducive to safer driving, especially when there is peer pressure to drive recklessly (Watt et al., 2013). It has, for instance, been noted that "some young people feel that driving interferes with texting and other electronic communication" (UMTRI, 2011). Reckless behaviour of young people is very often influenced by their peers. Particularly in adolescence, this tends to encourage actions that may increase safety risk on the road. This occurs either through group dynamics or through a self-selection process of social circles, so that potentially reckless drivers associate with people with similar attitudes. Whilst peer groups can be

influential, so can parents, who have a vital role to play through teaching and setting a good example from the early years onwards (OECD, 2004).

In vehicle, passengers can have a significant impact on the safety of a vehicle driven by a young driver. This can be through distraction, encouraging certain behaviours and/or because they may not know how to behave in a way that does not distract a young novice driver. Although additional passengers increase safety risks for young drivers, it has also been shown that certain types of passengers, such as parents, may encourage more responsible driving.

## 7.5 Impairments

Driver impairments have a number of causes. The most relevant to young drivers are alcohol and illicit drug use as well as fatigue and driver distraction.

### 7.5.1 Alcohol

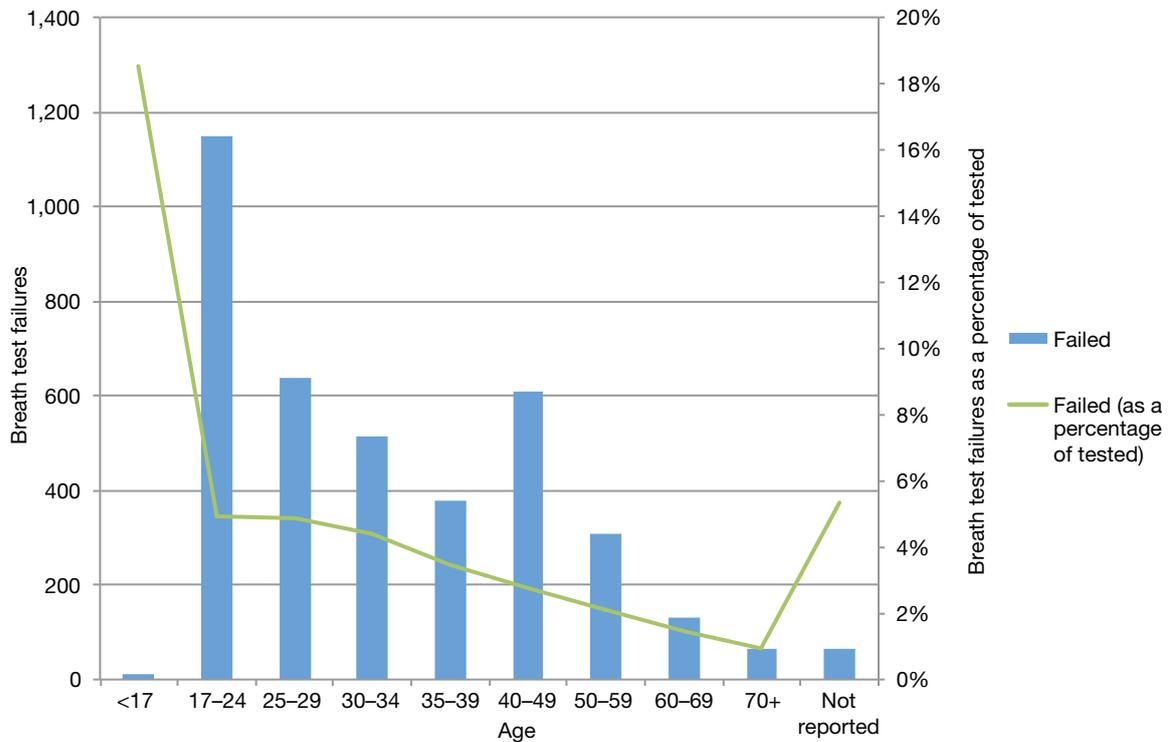
The increase in risk in driving presented by the consumption of alcohol is well known. According to DfT (2012c) digital test records of those found to be over the limit between 2009–11:

- 20% were young drivers (16–24) (compared to the 8% of full-licence-holders who are aged 16–24; DVLA, 2013);
- 16% were young male drivers (16–24) (compared to the 7% of male full-licence-holders who are aged 16–24; DVLA, 2013); and
- 70% were found to be so between 8 p.m. and 4 a.m., with 55% over the weekend.



Figure 11 (below) provides a comparison of breath test failures between older and younger drivers.

**Figure 11: Breath test failures, for random tests and those involved in a collision, by age, 2011**



Source: DfT (2012c), Table RAS51004

According to Peck et al. (2008), the crash rate of drivers aged 21 or younger with a blood alcohol level of 0.5 g/l was more than twice that of drivers with the same blood alcohol level over the age of 21.

There are several possible reasons for alcohol having a greater impact on young people's driving abilities. First, younger drivers may be less accustomed to the effects of consuming alcohol. Second, older drivers will have more experience, and therefore certain driving tasks will become more ingrained and require less conscious thought. Less experienced drivers have more to actively consider at any given time whilst driving, meaning that alcohol consumed by less experienced drivers can impair mental resources already under greater strain. Third, as younger people's brains are not yet fully developed, the effect of alcohol in terms of encouraging risk-taking behaviour, especially when young passengers are present, may be greater. Data from digital breath tests in 2011 shows that the proportion of over-the-limit drivers aged 16–24 who have twice the legal blood alcohol level or more is greater than that of drivers above the age of 25.

Younger drink drivers are a considerably greater risk than average drink drivers, both to themselves and to others, and this elevated risk extends to drivers up to the

age of 30 (North, 2010). Driving the morning after drinking is also an issue. It can take up to 12 hours to be safe to drive after drinking one bottle of wine, or drinking four pints of lager or ale; a Scottish study found that half of all young drivers admit to driving in the morning despite excessive drinking the night before (Road Safety Scotland, n.d.). The North report (North, 2010) argues that there is a strong case for a lower limit for the first five years of driving. Singling out novice drivers is difficult because the most problematic group is actually young drivers in their mid-20s.

International evidence suggests that the young, and young men in particular, are likely to be the demographic group that sees the largest safety benefits from any tightening of the general blood alcohol limit (North, 2010). A reduction of the general alcohol limit in Great Britain to 0.5 mg/100 ml blood from the existing 0.8 mg/100 ml blood would be of greatest safety benefit to younger drivers, with knock-on benefits for the rest of the driving population.

### 7.5.2 Drugs

In 2011, driver impairment due to drugs was listed as a contributory factor in 49 fatal road collisions in Great Britain; this accounted for 3% of all fatal road collisions that year (DfT, 2011b). Illicit drugs are, in general, mainly detected among young male drivers, during all times of the day but predominantly at weekends (Wolff et al., 2013).

Different drugs bring varying side effects on driving performance. Depressant drugs (e.g. cannabis) can cause slowed response time, slower neural processing, slower recall, greater error rates in complex tasks, balance and orientation changes, lowered alertness and sedation. Likewise, hallucinogens, and drugs with sedation as their main effect or side effect, can have a similar effect on driving performance. Stimulants (e.g. amphetamines and cocaine), often thought of as performance-enhancing drugs, might improve reaction time but can also affect critical judgement, increase impulsiveness, increase error rate, and interrupt normal sleep patterns (North, 2010).

### 7.5.3 Fatigue

Driver fatigue may be a contributory factor in up to 20% of road collisions, and up to one-quarter of fatal and serious crashes (RoSPA, 2011). These types of crashes are about 50% more likely to result in death or serious injury as they tend to be high speed impacts, because a driver who has fallen asleep cannot brake or swerve to avoid or reduce the impact (ibid.).

Fatigue reduces a driver's reaction time, vigilance, alertness and concentration and impairs the ability of performing important decision-making tasks (Jackson et al., 2011). Young male drivers are most commonly involved in sleep-related road collisions, but this may be because they are more likely to drive in situations which are likely to lead to fatigue (e.g. driving late at night) rather than because they are more susceptible to falling asleep at the wheel (RoSPA, 2011).

Fatigue-related collisions tend to be caused by younger drivers, male drivers and drivers with poor sleep tendencies (Jackson et al., 2011). As drivers get older they are generally better equipped to resist the onset of tiredness. Younger adults can accumulate sleep deprivation, given that they often require 9–10 hours per night, and this can affect driving ability. Younger male drivers may recognise their fatigue, but often continue to drive regardless. However, it should be noted that there is a variation in the effect of fatigue on road safety depending on the data source used.

#### 7.5.4 Distraction

Distraction comes from a variety of sources, from both inside and outside vehicle. A driver is distracted when they pay attention to an activity other than the driving task. It is generally not possible for people to multi-task whilst driving, especially if the second activity is time consuming or complex (RoSPA, 2007).

It is hard to make an accurate assessment of the contribution of distraction towards collisions as reporting mechanisms often rely on driver self-reporting or estimates of the activity undertaken at the time of the collision. In the US-100 Naturalistic Car Study, it was found that 78% of the crashes and 65% of near crashes had one form of inattention or distraction as a contributing factor – including inattention due to fatigue (Neale et al., 2005).

An Australian study, which recorded driver activities on video, found that all of the 1,347 drivers in the study took part in at least one distracting activity, and that altogether they spent 15% of the time involved in a distracting activity. They engaged in a distracting activity once every six minutes on average (McEvoy et al., 2006). In this study, younger drivers (aged 18–30) were found to be significantly more likely to report distracting activities, to perceive distracting activities as less dangerous, and to have crashed as a result (ibid.).

One particular form of distraction whilst driving that is common amongst young people is using a mobile phone. Research indicates that drivers are four times more likely to crash if using a mobile phone while driving (THINK!, 2013) and young people (18- to 29-year-olds) are more likely than other age groups to know someone who uses a mobile phone whilst driving, with 69% knowing someone who uses a phone hands free and 56% knowing someone who uses a phone without a hands free kit (TNS-BMRB, 2012). Amongst UK drivers aged 18–24, 48% admit to texting whilst driving (RAC Foundation, 2008); when this activity takes place behind the wheel, reaction times deteriorate by over one third (Reed et al., 2008). This is a larger risk factor than alcohol at the legal limit (12% slower) and driving under the influence of cannabis (21% slower) (ibid.).

More recently, with the increased popularity and availability of smartphones, surfing the internet and engaging in social networking presents further risks to drivers on the move. Among 18- to 29-year-olds, 55% know someone who texts whilst driving (TNS-BMRB, 2012), and those who use Facebook whilst

driving have been found to spend between 40–60% of their time using their phone, compared with about 10% of their time normally. Reaction times have been found to be around 38% slower, which is similar to texting whilst driving (Basacik et al., 2012).

The figures associated with mobile phone distraction are persuasive. It is important that text devotees, particularly young and more vulnerable young drivers, understand that using a mobile phone is one of the most hazardous things that can be done whilst driving.



## 8. Today's Young and Novice Driver Licensing System

Today's licensing system in Great Britain allows independent car driving from the age of 17. To acquire a full driving licence, a provisional licence must be obtained. This allows instruction and practice under supervision (either a professional instructor or an experienced driver over the age of 21 who has held a licence for a minimum of three years). This allows for driving with L-plates on all roads except motorways.

There is no requirement for professional instruction to pass the test, although professional instructors are common, nor a minimum requirement for number of lessons or hours of practice. A multiple-choice theory and computerised hazard perception test must be passed before a practical test can be booked.

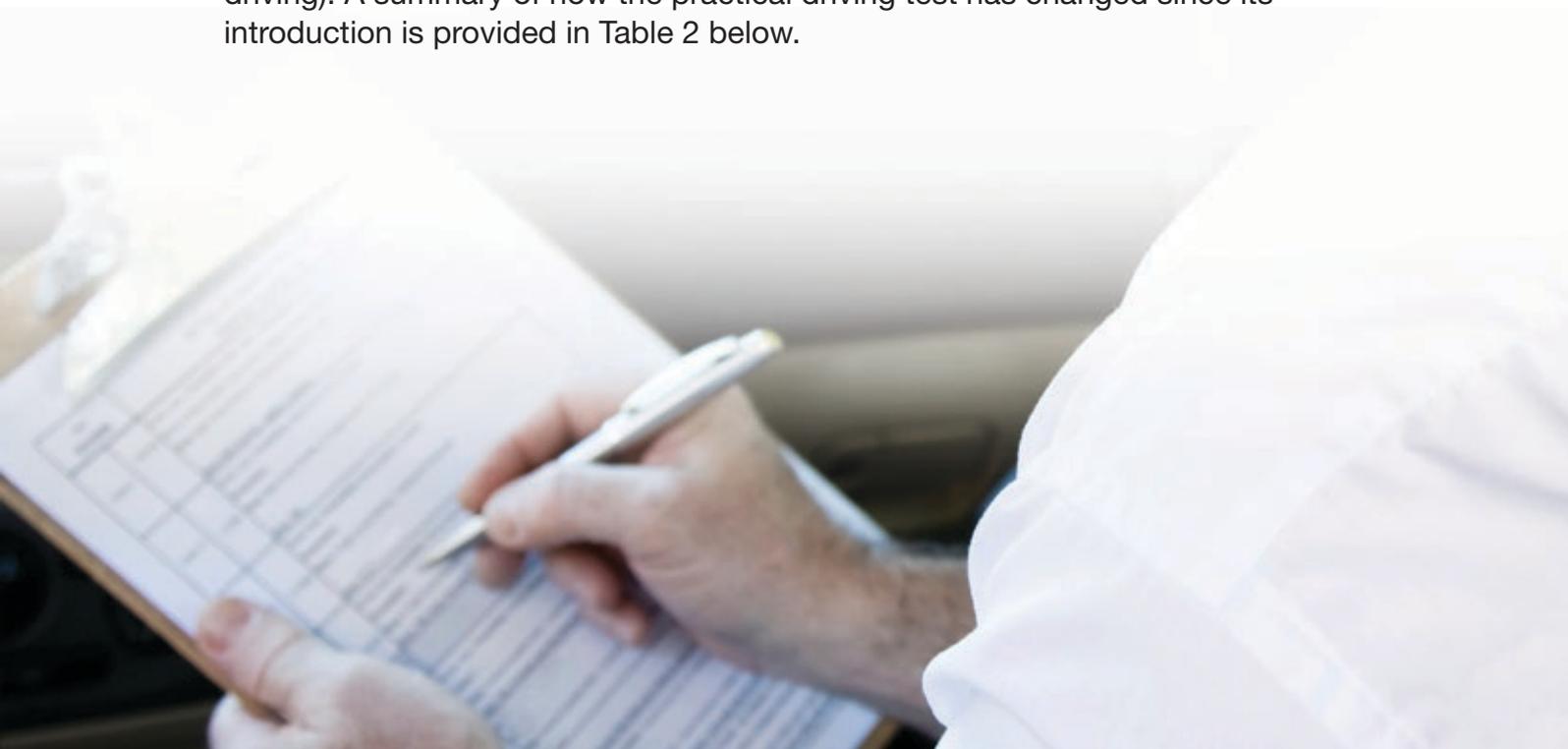


The practical test includes a basic eye test, some practical/mechanical questions and approximately 40 minutes of driving under observation, including 10 minutes of independent driving on a range of road types, requiring different speeds and manoeuvres.

Upon passing the test, the awarded driving licence is valid until the age of 70, after which it must be renewed every three years through a process of self-certification. Drivers are disqualified from driving if they acquire more than 12 penalty points. For certain offences, a retest, with the possibility of extended duration, may be required. The first two years of full-licence-holding is a probationary period – at this stage, licences are revoked at six penalty points. A full retest (including theory) must be taken to reacquire a licence after this.

## **8.1** The driving test

The practical test today is broadly similar to the practical test as introduced in 1935 (i.e. including a turn in the road, reverse left, emergency stop and general driving). A summary of how the practical driving test has changed since its introduction is provided in Table 2 below.



**Table 2: Changes to the driving test**

Date	Changes
1935	Driving test introduced
1975	Hand signals phased out
1990	Feedback provided to candidates who do not pass the practical test
1991	Reverse parking included as a manoeuvre within the test
1996	Theory test introduced, with 35 questions, to replace questions asked on the Highway Code at the end of the practical test
1999	Test duration increased by about 7 minutes to c.40 minutes of driving Coverage of test routes expanded to include higher speed dual and single carriageway roads Changes made to testing emergency stop and reversing manoeuvres – i.e. not all manoeuvres were necessarily tested in every test Less serious driver faults recorded to an upper limit of 15 for test pass Candidates given a written explanation of the test report at the end of the test
2002	Hazard perception component of the theory test introduced to test learners' anticipation and scanning for potential hazards
2003	New minimum standard for driver testing (Commission Directive 2000/56/EC) including vehicle safety checks via brief oral examination at the start of the driving test. Two questions asked from a possible 24
2007	Number of theory test questions increased to 50 (43 correct answers required to pass)
2010	10 minutes of independent driving introduced into the practical driving test
2012	Multiple-choice questions in theory test no longer published in advance in their exact form in books and other learning materials

Source: Authors' own, adapted from DSA (2013a)

In March 2013, the Driving Standards Agency (DSA) published an update of the National Driving Standard which will help guide future improvements in the way people learn and their ability to drive is assessed.

**Table 3: Summary of DSA National Driving Standard**

Role	Unit	Element
1. Prepare vehicle and its occupants for a journey	1.1 Prepare occupants of vehicle for a journey	1.1.1 Choose a suitable mode of transport 1.1.2 Make sure you are fit to drive 1.1.3 Control the risks associated with carrying passengers, loads and animals
	1.2 Make sure the vehicle is roadworthy	1.2.1 Make routine checks of vehicle roadworthiness 1.2.2 Check the vehicle is fit for the journey 1.2.3 Make sure vehicle documentation meets legal requirements
	1.3 Plan a journey	1.3.1 Plan a journey
2. Guide and control the vehicle	2.1 Start, move off, stop and leave the vehicle safely and responsibly	2.1.1 Start the vehicle 2.1.2 Move off safely and smoothly 2.1.3 Decelerate and bring the vehicle to stop safely 2.1.4 Park the vehicle safely and responsibly
	2.2 Drive the vehicle safely and responsibly	2.2.1 Monitor and respond to information from instrumentation, driving aids and the environment 2.2.2 Control the acceleration of the vehicle effectively 2.2.3 Use gears correctly 2.2.4 Steer the vehicle safely 2.2.5 Manoeuvre the vehicle
	2.3 Drive the vehicle while towing a trailer or caravan	
3. Use the road in accordance with the Highway Code	3.1 Negotiate the road correctly	3.1.1 Maintain a suitable position on the road 3.1.2 Negotiate bends 3.1.3 Negotiate all types of junctions, including roundabouts, and all types of crossing 3.1.4 Drive on motorways and dual carriageways
	3.2 Comply with signals, signs and road markings	
4. Drive safely and responsibly in the traffic system	4.1 Interact correctly with other road users	4.1.1 Communicate intentions to other road users 4.1.2 Cooperate with other road users
	4.2 Minimise risk when driving	4.2.1 Identify and respond to hazards 4.2.2 Drive defensively 4.2.3 Drive in an ecologically responsible way
	4.3 Manage incidents effectively	4.3.1 Take suitable action if your vehicle breaks down 4.3.2 Take suitable action when involved in, or witness to, a collision
5. Review and adjust driving behaviour over lifetime	5.1 Learn from experience	

Source: Reproduced from DSA (2012)

The DSA has two supplementary guidance documents based on the National Driving Standard:

- **National driver and rider training standard** (DSA, 2012a): This was first introduced in 2011, and describes the skills, knowledge and understanding needed to be a safe and responsible driving or riding instructor or instructor trainer.
- **Safe and responsible driving syllabus (category B)** (DSA, 2013b): This sets out an approach to training drivers in the skills, knowledge and understanding required to be a safe and responsible driver.

## 8.2 How do people learn to drive?

The most comprehensive study of licensed drivers completed to date in Great Britain (Wells et al., 2008) has found that:

- virtually all learners (99%) took some form of professional instruction. On average, learners took 52 hours of professional lessons prior to their practical test, although this varied by age and sex;
- approximately half of learners (55%) had practice sessions with friends or relatives, for an average of 24 hours;
- nearly all learners (99%) used some kind of written material to prepare for the multiple-choice part of the theory test; 96% used material to prepare for the hazard perception test, but a fifth of respondents (22%) did not use any form of learning material to prepare for the practical test; and
- the average learning time to taking the practical test was 14 months; generally males learnt to drive in less time than females, and younger people learnt in less time than older people.

### 8.2.1 Is the current system of learning to drive working?

The driving test is the main tool for encouraging learner drivers to build up training and experience before passing the test and driving independently. It can also act as a barrier to entry for some. The test influences how people learn to drive and there is good evidence that learners are not engaging effectively with the current training and testing system. This is partly because there is an unstructured approach to learning to drive which divorces theory from practice (Emmerson, 2008). Some learners have been found to over-rely on their instructors and it is not routine for drivers to complement professional training with informal practice to increase their total driving experience (*ibid.*).

The current pass rate for the practical test is 47% (DfT, 2013a), and tends to be lower in urban areas. This low pass rate indicates that many learners are arriving at the practical test both poorly prepared and lacking the skills necessary to be considered a safe and competent driver. When drivers do not pass, few recognise their own role in the outcome. They are more likely, for

instance, to look to external circumstances as a reason why they failed the test (Emmerson, 2008). Despite modifications to the testing regime in both the practical and theory tests, existing evidence suggests changes have not been sufficient in reducing the collision risk of young drivers (ibid.).



## 9. Creating Safer Young Novice Drivers

Whilst significant improvements have been made to the learning-to-drive process in recent years, with the introduction of hazard perception, independent driving, and formalised syllabuses, one in five of those who pass their test still go on to have a collision within the first six months of driving (Wells et al., 2008). Whilst it is not possible to eliminate all risk for novice drivers, there are a number of areas where action can be taken.





These include:

- education in schools;
- pre-driver education;
- learning to drive and the driving test;
- graduated driver licensing;
- post-test training;
- telematics;
- communications and support; and
- a safe system approach to road safety.

The evidence for the effectiveness of each of these approaches is provided in the following sections.

## 9.1 Education in schools

In advance of the formal learning-to-drive process, pre-school and school-age children are engaged in discussions about road safety. There are no formal requirements to include road safety education within the curriculum, but road safety teaching is one way in which schools can meet statutory Personal, Social and Health Education (PSHE) and Citizenship requirements and to promote development and well-being. Road safety education can also help schools meet their health and environmental targets and awards.

There is also scope for the development of cross-curricular linkages between other subjects such as geography, science and maths and road safety, which enable key road safety skills and knowledge to be reinforced. Given that attitudes and behaviours are developed at a very young age, and in the main fixed before age 11 (Deighton & Luther, 2007), early education in schools about safe road usage, as pedestrians, cyclists and drivers, is a relevant activity.

The DfT's THINK! campaign has an extensive suite of resources for road safety education designed for early years, primary school and secondary

school levels (DfT, 2013c). A number of other national organisations provide curriculum-linked resources for schools, such as the Royal Society for the Prevention of Accidents (RoSPA) and Brake. Resources are also developed at a local level by local authorities, road safety officers, schools and other interested bodies such as the police and fire and rescue services.

In 2009, the DfT published a study on improving the delivery of road safety, training and publicity across England (MVA, 2009). The research found widely varying approaches to road safety education across the country, and low levels of engagement by some of those working in the educational sector. Recommendations were made for greater transparency in funding and resource allocation, broadening the role of road safety officers to facilitate closer working between the DfT and the Department for Children, Schools and Families (now the Department for Education).

It was also found that whilst many health and education professionals recognised that road safety had an important role to play in improving the nation's health and well-being, this was seen as secondary to many other social issues which have a higher profile, including sex and relationships education, drug and alcohol awareness and healthy eating education. This seems peculiar given that the real risk presented by road collisions for young people, accounting for a quarter of all deaths amongst 15- to 19-year-olds (Box, 2011), is much higher than other factors.

The transition from primary to secondary schools is a major life change for children, which is characterised by increasing independence. Traditionally, there has been little education targeted specifically at this group (Platt et al., 2003), although there has been an increasing number of resources developed for this age band in recent years.

This demographic group is hard to reach, and innovative approaches are needed to engage it effectively. Using computer-based games is one approach taken by the THINK! campaign with Code of Everand, a fantasy game for 9- to 13-year-olds that encouraged looking for dangers. A large number of children within this age group have played the game and given positive feedback. Given the self-reported nature of the evaluation completed, it has not been possible to establish the game's effectiveness, but this is clearly an initiative that secured the interest of this hard-to-reach group (Dunwell et al., 2011)

The effectiveness of available education resources tend to be poorly understood or mixed. As McKenna (2010) noted "Educational interventions are often designed in the absence of theory or any formal body of evidence"; and "In some circumstances they may inadvertently increase exposure to risk".

It follows that too much faith in the concept of education and lack of analysis of its actual effectiveness has led to some well-meaning programmes not delivering expected casualty reductions.

There is, however, reasonable evidence which suggests that education measures aimed at the child or parent are effective at changing behaviour and reducing pedestrian injuries in the road environment. Pedestrian skills training programmes have been found to improve children's skills (i.e. timing and finding a safe place to cross), provided that they are specifically targeted and age-paced (Towner et al., 2005), with some evidence suggesting that age-based materials to promote parental teaching are more effective in securing behaviour change than school-based traffic clubs (Cattan et al., 2008; Towner et al., 2005).

Road safety education for pre-school and school-age children is prevalent and widespread. The evidence suggests that there is potential to instil safe attitudes and behaviours to multi-modal road use at an early age, before attitudes become too rigid. Communicating a developmentally relevant message to young people as pedestrians, cyclists and future drivers is part of this. There is scope to learn lessons from past initiatives that have failed, and ensure that future programmes are mindful of potential unintended consequences (e.g. cycle training, leading to more unsupervised child/teenager trips and hence an increased exposure to risk) (McKenna, 2010).

McKenna (2010) suggests that education will play a direct or indirect/facilitative role in improving public health, and that legislative change will most probably have a greater impact on collisions. This indicates that school-age education on road dangers can help create an environment where policy change, such as graduated driver licensing, is seen as appropriate and acceptable.



## 9.2 Pre-driver training

Beyond the school-based curriculum, various schemes exist that enable drivers under the age of 17 to learn about or practise driving. Pre-driver training is administered by a range of individuals and organisations, occasionally within a school setting, but more commonly on a private basis.

There are commercial programmes, such as [youngdriver.eu](http://youngdriver.eu) and the British School of Motoring's Ignition and Signal programmes, as well as local authority and government-approved/administered programmes, and charity-based training programmes like the Under 17 Car Club Charitable Trust.

The full extent and spread of pre-driver training is unknown. In a 2007 survey of all road safety units, seven non-government providers and four international organisations, it was found that out of 173 UK road safety teams, 122 (71%) had a pre-driver initiative in place (Launchbury et al., 2007), indicating that there is a reasonable spread of courses across the country.

As these programmes do not use public roads, there is no requirement for them to meet set standards of instruction. There are no set programmes of assessment, nor are there agreed curricula by which schemes must abide.

Schemes are often short-term, small-scale and one-off interventions that take place many years before real-world driving, which makes it difficult to establish how a pre-driver training programme has influenced future driving behaviour. The problem that these schemes have in verifying and justifying that they reduce safety risk is twofold: firstly, the sample sizes of individual one-off



studies are too small to verify their merit statistically and, secondly, they may improve instruction in the physical skills of driving, rather than encouraging improved judgement and awareness of safety risks. As some of these schemes are costly in comparison to post-17 driving instruction, there may be self-selection bias in the study group as well. There is a strong possibility that rather than improving young driver skills, the programmes isolate highly motivated young people with responsible, better-off parents, who have a lower risk overall and do not provide the benefit that at first glance they appear to.

A 2008 systematic review by the Cochrane Collaboration of pre-driver training courses (Roberts & Kwan, 2008) concluded that while school based driver education has been promoted as a strategy to reduce the number of road crashes involving teenagers, there is no evidence that it reduces road crash involvement, and some suggestion that it may lead to a modest increase in the proportion of teenagers involved in traffic crashes, as well leading to early licensing. Despite being published in 2008, the review only included three research studies of interventions that were conducted in the 1980s. It also recognises that the three trials of driver education were conducted in Australia, the USA and New Zealand between 1982 and 1984, and so their results may not be relevant to contemporary driver education programmes in the UK. There has been relatively little evaluation of recent and current pre-driver road safety interventions (McKenna, 2010), which means it is not possible to support or disprove the findings presented in this 2008 review.

A number of concerns have been raised about pre-driver schemes, including whether the courses increase young drivers' risk by enabling them to pass the driving test when they are old enough, with fewer professional lessons or less private practice. It is also argued that schemes could encourage young drivers to drive before they are legally able to do so (RoSPA, 2002).

There is some evidence that pre-driver training can improve aspects of young people's attitudes to driving if designed appropriately (The Under 17 Car Club Charitable Trust, 2012), although it is not clear that well-designed and well-run schemes would be possible to implement for the mass market. Driver behaviour, judgement and risk need to be addressed alongside the more basic technical skills of driving, as it is these that are lacking in young drivers who have collisions. Whether interventions have an effect over time will be influenced by an individual's personality, identity and contextual influences, such as peers and parents. Refresher courses are necessary for short-lived interventions to sustain influence over the many and seemingly more acute pressures in young people's lives.

Developing peer-to-peer interventions may hold promise (Lang et al., 2010), in particular sharing information on actual peer behaviour to help influence social norms. Attitude change initiatives are more successful when they include active participation and discussion, use of personal experiences and reflective thinking. Education sessions focused on reducing overall risk

taking and building resilience over a number of sessions, have been found to be more effective at reducing crash risk than one-off, day-long education programmes focusing on driving risk (Senserrick et al., 2009), although further large-scale work is needed to validate these findings. The best programmes are created with an understanding of the broader developmental changes in social reasoning which shift throughout childhood. Interventions are generally best targeted at specific behaviours, in specific contexts for specific individuals (Durkin & Tolmie, 2010).

In 2012, a RoSPA policy paper on pre-driver initiatives indicated that pre-driving education and training has a greater chance of being effective if it:

- **is part of the wider road safety curriculum**, started early in the child's development;
- **has realistic aims and objectives**, such as improving knowledge and attitudes and effecting intended behaviour;
- **is specific**, targeting specific behaviours in circumstances in which they are likely to occur and encouraging positive habits;
- **is positive**; pre-driver interventions should highlight the benefits of safe driving and promote the positive behaviour of adolescents and young drivers – peer norms need to be 'pro-road safety';
- **focuses on high-level factors, not vehicle-handling skills**, such as traffic awareness, hazard perception and consideration towards other road users;
- **is refreshed periodically**, to sustain attitude improvements which are affected by other influences;
- **involves parents**, and encourages them to reflect on the messages they give their children and their own habits; and
- **is evaluated** to establish effectiveness.



Overall the evidence suggests that whilst pre-driver training and education more broadly is unlikely to play a decisive role in keeping young people safe on the road, it can have a positive effect in certain circumstances. Poorly designed interventions may in the worst case do harm, making it important that pre-driver training programmes are subject to rigorous design and evaluation.

### **9.3 Learning to drive and the driving test**

One in five young drivers who pass the driving test go on to have a collision within the first six months of independent driving. This indicates that risky behaviours that can lead to collisions are not being sufficiently addressed by the learning-to-drive and driving-test regime. Emmerson (2008) describes this as both a ‘learning’ and a ‘testing’ challenge:

#### **Learning**

- the right quantity and type of driving experience;
- systematic learning around goals and ownership of these goals; and
- creating a culture of lifelong learning and driver development.

#### **Testing**

- creating an overall driving test that gives a more realistic and rounded assessment of whether someone is fit to drive alone.

#### **9.3.1 Learning**

There is a need to learn more than is currently assessed in the driving test to prepare young novice drivers for the situations and conditions that they find most hazardous or have little experience in. This should include a full range of driving conditions, night-time driving, driving in bad weather, on motorways, and with passengers.

Gaining experience of both the right quantity and quality leads to an effective learning process, but this is difficult to mandate. Today’s average pre-licence-acquisition learning time is 14 months (Wells et al., 2008). Specifying the hours of on-road experience or number of lessons needed before taking a test is one way in which to mandate or provide a guide of the optimal level of pre-test experience needed, but there are a number of practical difficulties associated with implementing this idea (e.g. recording experience, signing off experience, whether there is a requirement for demonstrable experience pre-test and so forth). Logbooks for use between pupil and teacher (and parents/guardians as appropriate) pose a number of challenges: the format the logbook should take (paper-based, online), the status of the logbook (formal evidence of test readiness versus optional use), and how logbooks would fit with the varied learning routes in place in Great Britain (formal instruction from

driving instructor versus tuition from parents, friends and relatives). Results from Sweden indicate that increasing the amount of experience gained by learner drivers (to 118 hours on average due to a reduced learning age) while being supervised by another driver has been effective at reducing solo driving accident liability (Baughan & Simpson, 2002).

High-risk behaviours, which can lead to collisions, are not being sufficiently addressed through existing driver training options. Training that focuses on attitudes and behaviours, as well as physical driving skills, is needed, but this is difficult to do within traditional 'in-car' learning. Peer-group-based discussions may form a useful extension (Lang et al., 2010). This approach is taken in Luxemburg where a new driver is required to take a young driver course within two years of passing their driving test.<sup>15</sup> Whilst it has been difficult to establish the effectiveness of this particular course (volumes of course participants being a particular issue), in the UK context the popularity of speed awareness courses and the growing science base behind the value of reflective peer-based discussions indicates that group-based learning would be a worthwhile addition to the learning to drive process. Learning to drive is currently a 'solo' activity. The formal (and informal) system that supports the learning-to-drive process would need to change significantly to accommodate such a change towards peer-based learning.

Mandating a minimum learning period for provisional licence-holders can help ensure that all important learning-to-drive experience is gained across a 12-month period. A minimum learning period of one year, from the current licensing age, would bring the UK in line with much of the rest of Europe, where the minimum age for solo driving was set at 18 years by the Second European Driving Licence Directive 91/439/EEC in 1991 (now updated to Third Directive, 2006/126/EC), with derogation for a lower UK age limit. Global reviews of licensing age indicate that a higher licensing age is associated with safety benefits (Begg et al., 2009; Williams, 2009), which would support keeping the provisional driving-licence age in Great Britain as 17, with a minimum learning period. There is little research or public support for reducing the provisional licensing age from 17. For young people in particular, the evidence suggests that GCSEs, rather than learning to drive, are the main priority before 17 (Watt et al., 2013). A one-year minimum learning period, based on a provisional licensing age of 17, would principally reduce deaths and injuries by reducing exposure to risk. In the US, a study found that a minimum learning period of at least 6 months, and a restricted period lasting until age 17 that either restricts night-time driving or allows no more than one teen passenger, reduced fatalities amongst 15- to 17-year-old drivers by 19.4% (Morrisey et al., 2006).

### 9.3.2 Driver testing

Those who currently find it easier to pass the driving test then go on to have a higher number of crashes (Emmerson, 2008). Given that post-test experience

<sup>15</sup> Article 83 of the Code de la Route: [www.mt.public.lu/transports/circulation/code/index.html](http://www.mt.public.lu/transports/circulation/code/index.html).

reduces the collision liability of drivers, this leaves a lot to be desired of the test itself. Adding independent driving skills to the driving test has been a useful step forward in encouraging all important self-evaluation in driving (ibid.), and the introduction of the hazard perception component in the theory test appears to have been associated with some reduction in subsequent collision liability, although the size of the estimated effect varies with the type of collision. For reported non-low-speed collisions on a public road where the driver accepted some blame, the size of the accident reduction in the first year of driving for those who had taken the hazard perception test (controlling for age, sex, experience and exposure) compared with those who had not was at least 3% (Wells et al., 2008).

The driving test as it stands today is largely similar to the driving test originally established in 1935 and mainly focuses on testing the mechanics of driving a car safely within the road environment. This is an important function. However, there remains a strong sense amongst those learning to drive that you only start to learn to drive once the test is passed, indicating that the test is regarded as artificial by many (Watt et al., 2013), indicating that wholesale change is likely to be needed.



### 9.3.3 Graduated driver licensing

Graduated driver licensing (GDL) involves a staged introduction of driving privileges for newly qualified drivers. It is used by a growing number of countries across the globe to reduce novice driver exposure to risk, and the countries who have introduced GDL have experienced significant casualty reductions as a result, as shown below. There are various aspects to the initial restrictions applied, based on risk factors for young and novice drivers. These include rules on night-time driving, passenger restrictions, lower alcohol limits and vehicle power limits.

GDL typically involves three main stages, although in practice there is much variation in the system's application. Based on recent research, Foss (2012) describes the following approach as an effective combination:

#### **Stage 1: Learner (typically 12 months)**

- supervised driving only; and
- variety and amount for learning.

#### **Stage 2: Intermediate (around 6 months)**

- night driving restriction (9 p.m.–5a.m.); and
- passenger restriction (< or = one teen passenger).

#### **Stage 3: Full licence**

- certain age-based limits continue (e.g. effective zero drink-drive limit).

The effect of introducing a GDL system in Great Britain was recently estimated by Jones et al. (2012), who concluded that a 'strict' form of GDL (night-time restriction 9 p.m.–6 a.m., no 15- to 24-year-old passengers) with 50% compliance would prevent 114 deaths and 872 serious casualties each year. The estimated value of prevention was £424 million per year. A 'less strict' form of GDL (night-time restriction 10 p.m.–5 a.m. and maximum of one 15- to 19-year-old passenger) with 50% compliance would prevent 81 deaths and 538 serious injuries. The estimated value of prevention is £273 million per year. Even though there are a number of assumptions made with these findings, such as compliance rates, the work argues that implementing GDL in Great Britain could save a significant number of lives, and that public health organisations should encourage a change in legislation.

Internationally, the impact of introducing GDL is also persuasive. A recent Cochrane review (Russell et al., 2011) found that reductions in crash rates were seen in all jurisdictions and for all crash types that had GDL licensing. The authors concluded that GDL is effective in reducing crash rates among young drivers, although the magnitude of the effect varies, and stricter restrictions in GDL systems appear to result in greater fatality reduction.

In the USA where GDL is common, Foss (2012) describes the learner period as too short in 38 states (6 months is common, but insufficient), and the night-time limit is thought to begin too late in 39 states (where 11 p.m. or later is common, but insufficient). The best GDL schemes are comprehensive and look to maximise experience and minimise risks for all novice drivers (ibid.). GDL is often misunderstood and incorrectly described by policymakers, the media and parents, and the terminology used (e.g. curfew, restrictions, 'getting tough') also causes problems for implementation (ibid.). Examples from the RAC Foundation's own review of the effect of international GDL schemes are provided below, which shows a reduction in overall collisions/fatalities in the range of 9–60%.



Table 4: Examples of international GDL experience – programmes and their effect

Jurisdiction	Minimum learner age	Minimum full licence age	Night curfew	Night curfew hours	Passenger restrictions	Example effects			
						Age band	Type of risk	Effect on risk	Effect size
California	15.5	17	Y	12 a.m.– 5 a.m. to 16.5 yrs	No U20s for 6m or 17 yrs	15–17	Overall	Decrease	16%, 5yr study
Delaware	15.83	17.33	Y	10 p.m.– 6 a.m.	2 passengers max	16	Fatal	Decrease	50%, 3yr study
Georgia	15	17	Y	12 a.m.– 5 a.m.	Only family for first 6m	16–19	Fatal	Decrease	16%, 5.5yr study
Iowa	14	17	Y	12.30 a.m.– 5 a.m.	All passengers with seatbelts	14–17	Overall	Decrease	32%, 4yr study
Kentucky	16	18	N	N	N	16–19	Fatal	Decrease	19%, 3yr study
Maryland	15.75	17.58	Y	12 a.m.– 5 a.m.	No U18s for 5m	16	Fatal	Decrease	9%, 3yr study
Massachusetts	16	17	Y	12 a.m.– 5 a.m.	No U18s for 12m	16	Overall	Decrease	21%, 5yr study
Michigan	14.75	17	Y	12 a.m.– 5 a.m.	N	16	Fatal	Decrease	32%, 2yr study
North Carolina	15	16.5	Y	9 p.m.– 5 a.m.	N	16	Fatal	Decrease	60%, 1yr study
Nova Scotia	16	18.25	Y	12 a.m.– 5 a.m.	N	16–19	Overall	Decrease	28%, 1yr study

**Table 4: Examples of international GDL experience – programmes and their effect (cont.)**

Jurisdiction	Minimum learner age	Minimum full licence age	Night curfew	Night curfew hours	Passenger restrictions	Example effects			
						Age band	Type of risk	Effect on risk	Effect size
Ontario	16	17.66	N	N	N	16–19	Fatal	Decrease	39%, 2yr study
Québec	16	18.66	N	N	N	Learner & Provisional	Fatal	Decrease	26%, 1yr study
Utah	NK	NK	Y	12 a.m.– 5 a.m. if U17	No U21s for first 6m	16	Overall	Decrease	5%, 2yr study
Victoria	16	22	N	N	Only 1 passenger 16-21 for 1st 12m	18–20	KSI	Decrease	31%, 1yr study
Virginia	15.5	NK	Y	12 a.m.– 4 a.m.	Only 1 U18 for 12m	16	Overall	Decrease	27%, 5yr study
Wisconsin	15.5	16.25	Y	12 a.m.– 5 a.m.	Only 1 U21	16–18	Overall	Decrease	13%, 2yr study

Source: Adapted from Jones et al. (2012) and Russell et al. (2011)

Despite the apparent success of GDL schemes at reducing collisions and/or fatalities amongst young driver, questions still remain about the system's implementation and effect (Foss, 2012). These include questions such as:

- Does GDL increase crash rates at age 18?
- Are there other unintended consequences, positive or negative?
- Does GDL increase unlicensed driving?
- How does GDL affect economically disadvantaged teenagers?

There are also wider questions about the cost-effectiveness of any such system, the impact it would have on mobility, the enforceability of any initiative, the transferability of scheme components and their success across different jurisdictions, and whether exemptions are required so as not to disadvantage young people in particular circumstances (e.g. shift workers). Whether a staged licensing system will penalise the responsible majority of young drivers is also much discussed (Senserrick & Whelan, 2003).

These are legitimate concerns, but given that one in five young people go on to have a collision in the first six months of passing their test (Wells et al., 2008), many of whom have no criminal record to date, it is possibly not appropriate to talk about the 'responsible majority' when so many young novice drivers are affected. With regard to compliance, a study of young people in New Zealand found that while only 26% supported all three GDL conditions (night-time, passengers and alcohol), 78% stated that they would not breach the licensing conditions (Begg & Stephenson, 2003, in PACTS, 2013) indicating that GDL is expected to be largely self-enforcing, with parents and the police supporting this process. It is also worth noting that the majority of legal driving behaviour



(e.g. speed limits, drink drive limits) relies on self-enforcement as the first line of defence, which sets the precedent for a scheme of this nature. Foss (2012) asserts that GDL is designed to maximise learning and not to control misbehaviour, which provides a useful frame of reference for any scheme.

Traditionally, there has been a reluctance to change driving licence policy in Great Britain to a GDL system, for many of the reasons discussed. There is now gathering interest, with licensing changes set to feature in the forthcoming Government Green Paper on Young Drivers. Northern Ireland is set to introduce a form of GDL (DOENI, 2013), the Scottish Government has recently asked the DfT to consider a UK-wide GDL (Transport Scotland, 2013), and the Welsh Assembly Government has 'young drivers' as an explicit target group for action (although GDL is not mentioned) (Welsh Government, 2012). Momentum looks to be gathering on this side of the issue.

The balance of public opinion is also generally in support of a package of GDL measures as "both parents and teens are generally much more accepting of the kinds of restrictions that have long been recommended for high-quality GDL systems than is generally assumed" (Foss & Goodwin, 2003, in PACTS, 2013). Recent research for the DfT (Watt et al., 2013) found that whilst 'graduated licensing' was not used as a phrase amongst the public, the concept of a phased driving licence system was generally received positively by young people, including the notion of starting with a smaller engine. The research also found a widespread perception amongst young people that the Government does not want young drivers on the road (ibid.). Night-time driving rules were universally rejected as an unfair curfew for both practical and social reasons by the groups consulted, mainly because the rules were seen as limiting their freedom. Many parents were also unsupportive, believing that driving at night is a safer option than public transport, illustrating a misunderstanding of comparative safety facts. In 2011, rates for all passenger casualties (per billion passenger kilometres travelled) were 195 for car, but only 139 and 27 for bus/coach and rail respectively. In other words, perception of risk and risk are not the same, especially when personal security concerns also shape peoples' views (DfT, 2012d: TSGB0107).

If GDL were introduced in the UK, it has been mooted that the age at which a young person can apply for a provisional licence; maybe reduced from 17 to 16½, to provide a concession for those who are effected by the changes. The problem is that this change could negate the safety benefits achieved by a GDL package, as some young drivers would gain their full driver's licence at a younger age and hence increase their level of exposure to risk (Figure 10). There is good evidence for increasing the minimum age for acquiring a provisional driver's licence and ensuring that drivers get appropriately broad and frequent experience before passing the driving test (Begg et al., 2009; Williams, 2009). This can be achieved with a minimum learning period and a structured syllabus of learning-to-drive requirements as discussed above.

In jurisdictions throughout the world where GDL has been introduced, the provisional licensing phase has, in some circumstances, included a lower drink drive limit and vehicle power restrictions, in addition to more common passenger and night-time driving conditions. Whilst lower drink-drive limit conditions may well have a safety effect, there is a wider question as to what extent they are practical and appropriate. In the UK the current drink drive limit is 0.8mg/100ml blood. There is good evidence for reducing the general blood alcohol drink drive limit to 0.5mg/100ml blood, as it has been suggesting that during the first year of implementation, at least 43 to around 168 lives would be saved – as well as avoiding a larger number of serious injuries – a conservative estimate indicating 280 (North, 2010). Evidence has also been presented for a restricted novice driver limit of 0.2mg/100ml blood (*ibid.*), although the practicalities and fairness of this approach have been much disputed, especially given that singling out novice drivers fails to address the issue that the most problematic group of young drivers are in their mid-20s. Given the high risk for drink-driving extends up until age 30, if a lower limit were to be applied for young or novice drivers there is a strong case for a lower limit for the first five years of driving (*ibid.*).

Regulations on the power of vehicles are problematic for two main reasons. Firstly, such a move may well preclude young people from driving their parents' vehicle. This has been seen in Croatia,<sup>16</sup> where the power restriction was increased from 75 kW to 80 kW, after complaints that the household car was illegal for young driver training. Secondly, the insurance market does a good job at pricing higher-powered vehicles accordingly. This uses a well-understood and publicly available system of insurance groups. Higher-risk vehicles are generally discouraged amongst young drivers through higher insurance groups and higher insurance costs. Specific lists of approved or restricted vehicles (as seen in some Australian jurisdictions) are more complicated and would involve additional maintenance. Although regulation in this area might assist, it is not a necessity.

## 9.4 Post-test driver training

After completing the driving test, there are a number of voluntary post-qualification novice driver training schemes. These include motorway driving, which is not part of the current training and testing scheme. The best known of these schemes is Pass Plus, which is aimed at newly qualified drivers looking to improve their skills and increase their range of experience in various driving conditions. There is a possibility of reduced insurance from certain providers after completing such a scheme, but these offers are now relatively uncommon. Pass Plus drivers have been found to have a marginally lower collision rate, but the difference is very small and not statistically significant

<sup>16</sup> The amendment to the Law on Road Safety that took it from 75 kW to 80 kW was published in the Official Gazette of the Republic of Croatia (Narodne Novine – NN) no. 74 on 1.07.2011. ([http://narodne-novine.nn.hr/clanci/sluzbeni/2011\\_07\\_74\\_1575.html](http://narodne-novine.nn.hr/clanci/sluzbeni/2011_07_74_1575.html)).

(Elliott, 2006; ABI, n.d.). As with pre-driver activities and learning to drive, there is little evidence to suggest that post-test driver training improves safety. If post-test driver training is to make a worthwhile contribution in future, it will need to address cognitive and attitudinal aspects of driving.

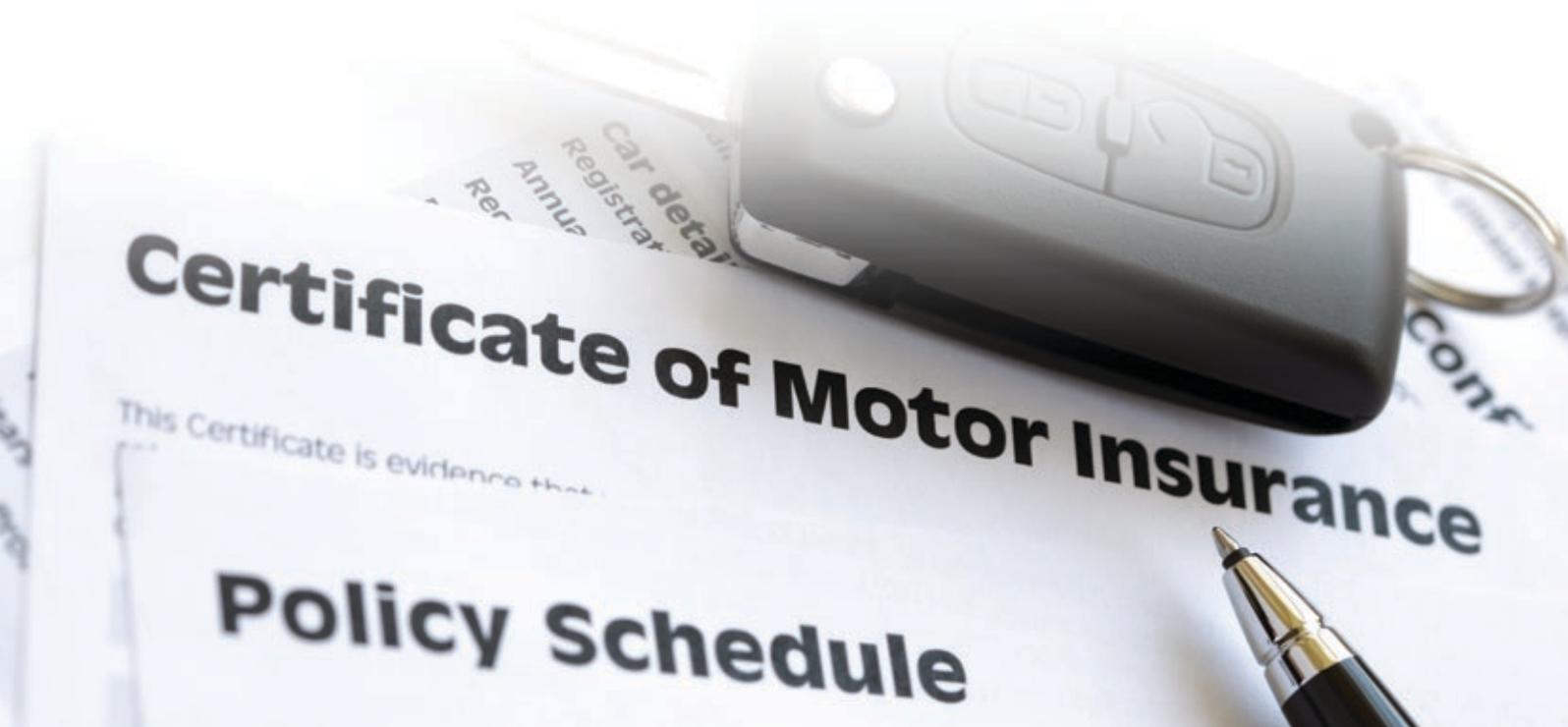
The importance of lifelong learning for the whole driving population, and life-course learning for young people, has been discussed at great length over a number of years. DSA syllabuses for drivers (DSA, 2012; 2013b) talk in terms of the lifelong learning-to-drive process and highlight how fitness to drive can change over the course of a driver's lifetime. There are, however, very few initiatives in place to support this process – either governmental or commercial – which is why there is such a weak evidence base for intervention. If the right intervention could be found, this could prove to be a significant growth area in future.

## 9.5 Supportive environment

Aside from road user education, the learning-to-drive process and its associated pre- and post-training options there are number of additional areas of activity that have a direct or indirect impact on younger driver action and road risk. The role of telematics, communications, publicity and parents are discussed in the following sections.

### 9.5.1 Telematics and technology

Technology and information systems can offer potential ways of reducing driver risk and increasing safe driving. There are a number of technologies currently available and this is an emerging and rapidly developing field. These products and services include various forms of telematics (including telematics insurance products) and various in-vehicle technologies (e.g. alco-locks, adaptive cruise control, lane departure warning, eCall).



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Telematics systems record key data on driving behaviour (e.g. speed, acceleration, location, braking). These systems can be used to advise and inform drivers about making safer driving decisions. Telematics can also passively record driver behaviour, with the aim of improving safety (Road Safety Observatory, 2013). Telematic systems in road safety range from Intelligent Speed Adaption technology (mandatory and/or voluntary) to in-vehicle data recorders (IVDRs). IVDRs have been found to significantly influence driver behaviour and have a positive effect on high-risk groups such as teenagers and young males (Baugh et al., 2012; McGehee et al., 2007).

One of the most discussed potential methods of reducing young driver risk is telematics insurance. These 'black box insurance' systems are increasingly being used by car insurers as a way to price premiums more closely to the risk that is covered in the policy. High insurance premiums for young people are largely a reflection of their increased risk of injury, both to themselves and others. In a recent study where young drivers were asked about their views on insurance-based telematics, it was clear that there was an awareness of the technology in general terms (Watt et al., 2013). When it was discussed in the context of motor insurance, the young drivers involved were more likely to perceive it negatively, equating the technology to 'big brother' and 'restricted driving', which would be predicated on the idea of 'punishment before the crime'.

There were also clear concerns about privacy, the misuse and unfair use of data, the infallibility of technology, and restrictions of driving experience. Many of those questioned thought that the savings would not be enough to make it financially worthwhile, and there were concerns about penalties and rigidity. There was also a lack of clear understanding of how it would work in practice. Many said that they did not want to be in a regular dialogue with an insurance company (Watt et al., 2013). However, positives were also recognised. These focused around the assessment being based on actual driving, which should help to encourage safer and cheaper driving. The opportunity for the car to be tracked if it were stolen was also seen as a benefit (ibid.).

The UK is considered a pioneer of 'pay-as-you-drive' telematics insurance products, with approximately 116,000 existing users of insurance-based products (SBD, 2012). By 2017, it is forecast that up to 19 million drivers worldwide will use some form of insurance-based telematics system, with 75% of subscribers expected to come from Italy and the UK alone (ibid.). Today, however, the market for telematics-based insurance is in its infancy and faces major challenges, such as self-selection bias, potential adverse outcomes from curfews and penalties, and public concerns about driver monitoring. Although there is significant potential for telematics to offer premiums more accurately matched to driver risk (i.e. lower insurance costs for safe young drivers) and help drivers to improve and develop their driving style, it is important to remember that the people choosing telematics-based insurance products are very likely to be self-selecting and therefore unlikely to represent the young driver population. In addition, this is a new and developing field, where

commercial development and take-up will make for innovative developments in the years to come.

There are number of other new technologies that can improve road safety. These include:

- **eCall:** A Europe-wide initiative to install devices in vehicles that alert local emergency services with information (e.g. location, airbag deployment) in the event of an accident. This could improve emergency response times by 40–50% (Bailey, 2011).
- **Alco-locks:** These are breath test devices that immobilise the vehicle until the driver offers a road-legal breath sample.
- **Lane departure:** These are technologies which alert (and possibly correct) drivers when they begin to drift into other lanes.
- **Collision avoidance:** These systems use radar, lasers and/or cameras to detect imminent collisions and respond, including through the use of autonomous braking.
- **Vehicle security:** Ford has begun to offer vehicles where certain features can be limited by parents. ‘MyKey’ allows parents to set restrictions on speed, acceleration, use of the stereo and seat belt use. Younger drivers are then given a vehicle key where only these restricted features are available.

These technologies are emerging or rapidly developing, and it is unclear what safety benefits these current systems can offer young drivers. This is because where these technologies are employed they often feature on more expensive and larger vehicles, which are less likely to be used by younger drivers. Although there are some exceptions (e.g. Ford MyKey is available on a more affordable vehicle), these have not yet reached widespread use in the cheaper new and second-hand vehicle markets.

### 9.5.2 Communications and publicity

Alongside the education, training, licensing structure and technological developments associated with new and novice drivers, there is an important role for communications, publicity and support structures for facilitating safer road use amongst this group.

Communication messages directed at drivers, pre-drivers and younger age groups need to be age appropriate and fit in the social environment within which young people find themselves. Depicting life as relevant to the target group has been found to be particularly important for successful communication activities. The THINK! Campaign based on staged footage of teenage pedestrians becoming distracted by camera phones and their friends, with disastrous consequences, has been reported to be more effective for this ‘live in the moment’ group than another THINK! campaign with the message ‘don’t die before you have lived’, which tended to resonate more with parents

than teenagers, according to survey of public and opinion formers (Ratcliff & Bouchier-Hayes, 2007).

National communication activities have both a role to play in influencing social norms and building up knowledge and understanding around hazard activities, particularly where there are legal consequences associated with actions (e.g. mobile phone use whilst driving, drink-driving). As discussed elsewhere in this report, it has been suggested that public health campaigns have a role in legitimising legislation and aiding with both understanding and compliance (McKenna, 2010). To fully understand the role of communications and publicity material aimed at this group, further research and evaluation is required. It is also necessary to get a view on the cost-effectiveness of programmes.

### 9.5.3 The role of parents

Aside from national or local communication campaigns, it is important to understand how the influential support structures in young people's lives can have a beneficial effect on road safety attitudes and behaviours. The role of peers has been discussed throughout this report, but another important group to consider are parents and guardians, who are major influencers in young people's lives.

Parents are generally not fully aware of the effect of the role model they present and tend to be inconsistent with their behaviour on the roads. There is good evidence to suggest that parents can be effectively supported in the important role they play through appropriately targeted interventions beginning at the antenatal stage (Green et al., 2008). Parents' driving styles have an impact on teenagers' car safety behaviour and, in particular, seatbelt use (Cattan et al., 2008).

Parental monitoring of the learning-to-drive and post-driving processes has also been found to positively influence their child's driving (ibid.). Starting at an early age, it has been found that the mere presence of a parent may cause children to behave more cautiously as pedestrians (Barton & Schwebel, 2007); but conversely, child pedestrians have also been found to rely heavily on their parents, exhibiting safer pedestrian behaviour when not accompanied (Cattan et al., 2008).

Practically, there are a number of ways in which a parent can assist with reducing the risk of a newly qualified driver. In the USA, parent/young driver agreements are often used. A new driver is allowed to drive the family car (or their own car if part-funded by the parent) when they agree to certain conditions for the first year or so of driving. The agreements can be flexible and tailored to meet individual needs. They can be verbal or written, and are often focused around rules with regard to driving at night, carrying groups of friends, alcohol and drug consumption, speeding, mobile phone usage and seatbelt wearing (RoSPA, n.d.). However, it is important to bear in mind that interventions such as these are not always transferable to different sociocultural contexts.

### 9.5.4 Safe systems approach to road safety

In recent years there has been a shift in road safety management practices towards a Safe System approach. The safe system approach typically aims to develop a road system better able to accommodate human error. This is most commonly achieved through better management of crash energy, so that no individual road user is exposed to a crash force likely to result in death or serious injury (OECD, 2008). The safe systems approach sits at the heart of interaction between drivers, vehicles and roads (Figure 12).

**Figure 12: Safe systems approach to road safety**



Source: Authors' own

There are several key principles upon which the safe systems approach is built (Road Safety Authority, 2013):

- **Human behaviour:** No matter how well people are trained and educated about responsible road use, people make mistakes and the road transport system needs to accommodate this.
- **Human frailty:** The finite capacity of the human body to withstand physical force before a serious injury or fatality can be expected is a core system design consideration.
- **Forgiving systems:** The roads we travel on, vehicles we travel in, speeds we travel at and the attitudes of road users to each other need to be more forgiving of human error.
- **Shared responsibility:** Everyone has a responsibility to use the road safely. Cooperation between key stakeholders must be developed and enhanced.

Haddon's matrix (Table 5) provides a 'safe system' tool for applying a cost-effective combination of engineering, enforcement and education measures across the phases of a crash.

**Table 5: The Haddon matrix for understanding road crash injury factors**

PHASE	Factors		
	Human (road user behaviour)	Machine (vehicle)	Environment (road and road environment)
<b>Pre-crash</b> (crash prevention)	Attitudes Information Impairment Enforcement	Handling Speed management Braking Collision avoidance Electronic stability systems	Road design and layout Speed limits Intelligent transport systems Weather Pedestrian facilities
<b>Crash</b> (injury prevention during crash)	Use of restraints Impact speed Impairment	Crash protection of vehicle shell Restraints Safety features, e.g. airbags	Kinetic energy Absorbing roadside objects
<b>Post-crash</b> (sustaining life)	Access to medical care General health of road user	Automatic crash notification systems Access to crash site Fire risk	Rescue services Elapsed time to appropriate medical care

Source: reproduced from OECD (2008: 71)

The safe systems approach was originally developed in the Netherlands in the early 1990s and there have been many applications of the concept since in Sweden, New Zealand, Switzerland, Norway and Australia (Road Safety Authority, 2013). Whilst the concept is not specifically aimed at young drivers, the application of a safe system approach would have benefits for this specific group, as well as the general population.



# 10. Conclusions

Young and novice drivers are a high-risk group in terms of road safety. This fact is pervasive across the world. The risk of collision is particularly high within the first six months of passing the driving test (Wells et al., 2008) and it has been found in a number of studies that the first 1,000 miles of driving may be the most important in terms of reducing collision risk (Helman et al., 2010).

This report has outlined how young people use cars, the reasons why they are at an increased risk on the road, and what initiatives can be put in place to encourage safer driving. The time is clearly right for improvements to be made to how people learn to drive. The following section provides a summary of the evidence on the initiatives available to tackle young driver safety concern and an RAC Foundation view on each of them.



## 10.1 Education in schools

**Evidence summary:** Attitudes to a range of public health issues are formed at a very young age. By the time a child reaches the age of 14, it is much more difficult to influence attitudes and behaviours. It starts to become more difficult after age 11. The effectiveness of the education resources available for pre-school and school-aged children at influencing attitudes and behaviours is not well understood or mixed.

**RAC Foundation view:** There is limited evidence to support the effectiveness of road safety initiatives in schools. Any programmes delivered in this setting should be well researched and evidence-based.

## 10.2 Pre-driver training

**Evidence summary:** There is relatively little evaluation of the effectiveness of pre-driver road safety interventions. Schemes are often short-term, small-scale and one-off, taking place many years before real-world driving. This makes it difficult to establish how any one pre-driver training programme has influenced future driving behaviour. Rather than improving young driver skills, there is the possibility that programmes isolate highly motivated young people with responsible, better-off parents, who have a lower risk. Training for pre-drivers focusing solely on the technical aspects driving can encourage speedier test passing and increased exposure to risk as a result. Peer-to-peer discussion groups using active participation, personal experience and reflective thinking show some early promise for influencing attitudes and behaviours of young people. Pre-driver interventions are best targeted at specific behaviours, in specific contexts for specific individuals.

**RAC Foundation view:** The evidence suggests that pre-driver training does not play a fundamental role in keeping young people safe on the road. Poorly designed interventions can in the worst case do harm. If pre-driver training is delivered, it should focus on driver behaviour, hazard awareness and attitudes, rather than technical skill.

### 10.3 Learning to drive and the driving test

**Evidence summary:** One in five young drivers who pass the driving test have a collision within the first six months of independent driving, which indicates that risky behaviours which can lead to collisions are not being sufficiently addressed by the learning-to-drive and driving-test regime.

- **Learning:** Today's average pre-licence-acquisition learning time is 14 months. Getting the right quantity and kind of driving experience whilst learning is important. Increasing the amount of experience learner drivers gain under supervision has been effective at reducing solo driving licence liability, with the first 1,000 miles of total driving experience looking to be particularly important. Global reviews of licensing age indicate that a higher licensing age is associated with safety benefits. Whilst increased risk is a product of inexperience, it is also a product of age. There are a number of physiological changes that take place in adolescence which increase the desire for sensation-seeking and risk-taking. Evidence of these tendencies appears at age 11, peaks at 17 and decreases towards 25. Training that focuses learning on attitudes, behaviours and hazard perception as well as physical driving skills has been found to be most effect at reducing road safety risk and peer-group-based discussions alongside traditional 'in-car' learning show some early promise. Minimum learning periods, on-road experience and/or number of lessons have all been suggested as proxy mechanisms for increasing pre-driver experience.
- **Testing:** Those who currently find it easier to pass the driving test go on to have a higher number of crashes. There remains a strong sense



amongst those learning to drive that you only start to learn to drive once the test is pass, indicating that it is seen as artificial by many. It has been recommended that the driving test gives a more realistic and rounded assessment of whether someone is fit to drive alone.

**RAC Foundation view:** There is a need to learn more than is currently assessed in the driving test to prepare young novice drivers for the situations and conditions that they find most hazardous or have little experience in. This should include a full range of driving conditions, night-time driving, driving in bad weather, on motorways, and with passengers. Given that post-test experience reduces the collision liability, this leaves a lot desired of the test itself. However, it is difficult to use the driving test on its own to ensure that younger drivers are safe. The test itself would benefit from sitting within a reformed system, inclusive of a minimum learning period, to increase pre-test driving experience and a revised licensing system.

## 10.4 Graduated driver licensing (GDL)

**Evidence summary:** Graduated driver licensing (GDL) involves a staged introduction of driving privileges for newly qualified drivers. These include rules on night-time driving, passenger restrictions, lower alcohol limits and vehicle power limits. It is used by a growing number of countries across the globe to reduce novice driver exposure to risk, and the countries who have introduced GDL have experienced significant casualty reductions as a result, of the order of 9–60% (overall or fatal collisions). The effect of a GDL system on road casualties has been estimated for Great Britain, where it was suggested that 81–114 deaths and 538–872 serious injuries could be prevented (depending on the severity of night-time and passenger restrictions applied). There is a significant decline in driving performance between 50mg of alcohol per 100ml of blood and the current UK limit of 80mg. The relative crash risk of a driver at 50mg/100ml is twice that for someone with no alcohol present. The risk increases to 10 times at 80mg/100ml. Young and novice drivers are at particular risk in terms of alcohol-related collisions (BMA, 2008).

**RAC Foundation view:** Despite the evidence on the effect of GDL schemes, there has traditionally been a reluctance to change policy in Great Britain. The RAC Foundation believes that a comprehensive package of GDL should be introduced. We envisage that this would include a three-stage licensing approach: learner (1 year minimum), intermediate (1 year post-test) and full driving licence (post-test 1 year+). The minimum learning period should be supported with a formalised syllabus and recorded learning. The evidence supports passenger restrictions and night-time driving conditions for this group. The level at which these are set should aim to balance mobility and safety concerns. The RAC Foundation remains unconvinced that vehicle power restrictions are needed for this group, as the insurance market already prices vehicles relative to their road risk in a way that is well understood by

the consumer. There is clear evidence to support the casualty reductions that would be secured by a lower drink-drive limit, for young people and for the rest of the population. The Foundation would support a reduction in the general Blood Alcohol Content (BAC) limit for driving to 50mg/100ml blood.

## 10.5 Post-test driver training

**Evidence summary:** After completing the driving test, there are a number of voluntary post-qualification novice driver training schemes. These include motorway driving, which is not part of the current training and testing scheme. The best known of these schemes is Pass Plus, which is aimed at newly qualified drivers looking to improve their skills and increase their range of experience in various driving conditions. There is a possibility of reduced insurance from certain providers after completing such a scheme, but these offers are now relatively uncommon. Pass Plus drivers have been found to have a marginally lower collision rate, but the difference is very small and not statistically significant.

**RAC Foundation view:** As with pre-driver activities and learning to drive, there is little evidence to suggest that post-test driver training improves safety. If post-test driver training is to make a worthwhile contribution in future, it will need to address cognitive and attitudinal aspects of driving. The importance of lifelong learning for the whole driving population, and life-course learning for young people, has been discussed at great length over a number of years. There are very few initiatives – either governmental or commercial – which support this process. If the right evidence based-intervention can be found, this could prove to be a significant growth area in future.

## 10.6 Supporting environment

**Evidence summary:** Aside from road user education, the learning-to-drive process and its associated pre- and post-training options there are number of additional areas of activity that have a direct or indirect impact on younger driver action and road risk.

- **Telematics and technology:** Technology and information systems can reduce driver risk and increasing safe driving. There are a number of technologies currently available. This is an emerging and rapidly developing field. These products and services include various forms of telematics (including telematics insurance products) and various in-vehicle technologies (e.g. alco-locks, adaptive cruise control, lane departure warning and eCall). Telematic systems which record key data on driving behaviour have been found to have a positive effect on high-risk groups, such as teenagers and young males. Telematics insurance is also being increasingly used by insurers to price premiums more closely to policy

risk. The UK is considered a pioneer of ‘pay-as-you-drive’ telematics insurance products, but the market is in its infancy and faces major challenges, such as self-selection bias, potential adverse outcomes from curfews and public concerns about driver monitoring.

- **Communications and publicity:** There is an important role for communications, publicity and support structures for facilitating safer road use. Communication messages directed at driver, pre-drivers and younger age groups need to be age appropriate and fit in the social environment within which young people find themselves. National communication activities have both a role to play in influencing social norms and building up knowledge and understanding around hazard activities, particularly where there are legal consequences associated with actions (e.g. mobile phone use whilst driving and drink-driving). However, it has been suggested that rather than having a direct effect it is likely that public health campaigns may help to legitimise legislation and aid with both public understanding and compliance. To fully understand the role of communications and publicity material aimed at this group, further research and evaluation is required.
- **The role of parents:** The influential support structures in young people’s lives can have a beneficial effect on road safety attitudes and behaviours. Parents are generally not fully aware of the effect of the role model they present and tend to be inconsistent with their behaviour on the roads. There is good evidence to suggest that parents can be effectively supported in the important role they play through appropriately targeted interventions beginning at the antenatal stage. Parents’ driving styles have an impact on teenagers’ car safety behaviour and, in particular, use of seat belts. Parental monitoring of the learning-to-drive and post-driving processes has also been found to positively influence their child’s driving.
- **Safe systems approach to road safety:** In recent years there has been a shift in road safety management practices towards a safe systems approach. The safe systems approach typically aims to develop a road system better able to accommodate human error. This is most commonly achieved through better management to crash energy, so that no individual road users is exposed to crash forces likely to result in death or serious injury. The safe systems approach sits at the heart of interaction between drivers, vehicles and roads. Whilst the concept is not specifically aimed at young drivers, the application of a safe system approach has benefits for this group, as well as the general population.

**RAC Foundation view:** In discussing the safety and mobility needs of young drivers it is all too easy to think simply in terms of education, training, testing and licensing rules. The supporting environment, as discussed above, is important context and deserves policy attention.

## 10.7 What should the priority be?

Action on younger drivers falls into four main categories:

- education (pre- and post-test);
- training (pre-test, learning to drive, post-test);
- regulatory changes (test and licensing); and
- changes to the supporting environment (telematics, communications and publicity, role of parents, safe systems approach to road safety).

A substantial body of literature on the effectiveness of driver education and training initiatives has not found education to have direct effects on the collision risk of new drivers. One of the reasons for this is that much of the training that exists tends to focus on car handling skills rather than all important initiatives to influence road judgements, attitudes and behaviours. Given that this is the case, focusing primarily on reforming driver training, the driving test and post-test licensing rules would appear to be the most appropriate route to take in making changes for young drivers, alongside adopting a safe systems approach to road safety in Great Britain.

In 2007, the House of Commons Transport Committee (2007) held an inquiry into novice drivers and concluded that the scale of deaths and injuries amongst novice drivers indicates that the current regulatory regime is failing, suggesting that urgent action is needed. The report suggested that if the package of recommended measures were implemented (ranging from GDL to driver education), the UK would have one of the most rigorous driver training, testing and post-test regimes in Europe. Today, there are two main points to take away from this comprehensive 2007 House of Commons report:

- a package of measures is best placed to address the issue of younger drivers; and
- six years on from report publication, fundamental reform of young and novice driver licensing is still lacking.

Change is now necessary and this will need to be supported by a range of delivery partners, including public health bodies, the police and casualty reduction partnerships.

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