PACTS
Parliamentary Advisory Council for Transport Safety

Getting young drivers back on the road in safety

'The loss of life and serious injury suffered by young people in road accidents is horrendous.

The Transport Select Committee has consistently called for action to improve the safety of young drivers. It is time for the Government to act.'

Louise Ellman,
Chair of the Transport Select Committee

GEM MOTORING ASSIST
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Young drivers at risk

Driving on public roads today is a highly complex and responsible task. The consequences of mistakes or deliberate risk-taking can be expensive, life changing or even fatal. They can be devastating not only for the driver but also for passengers, family and other road users.

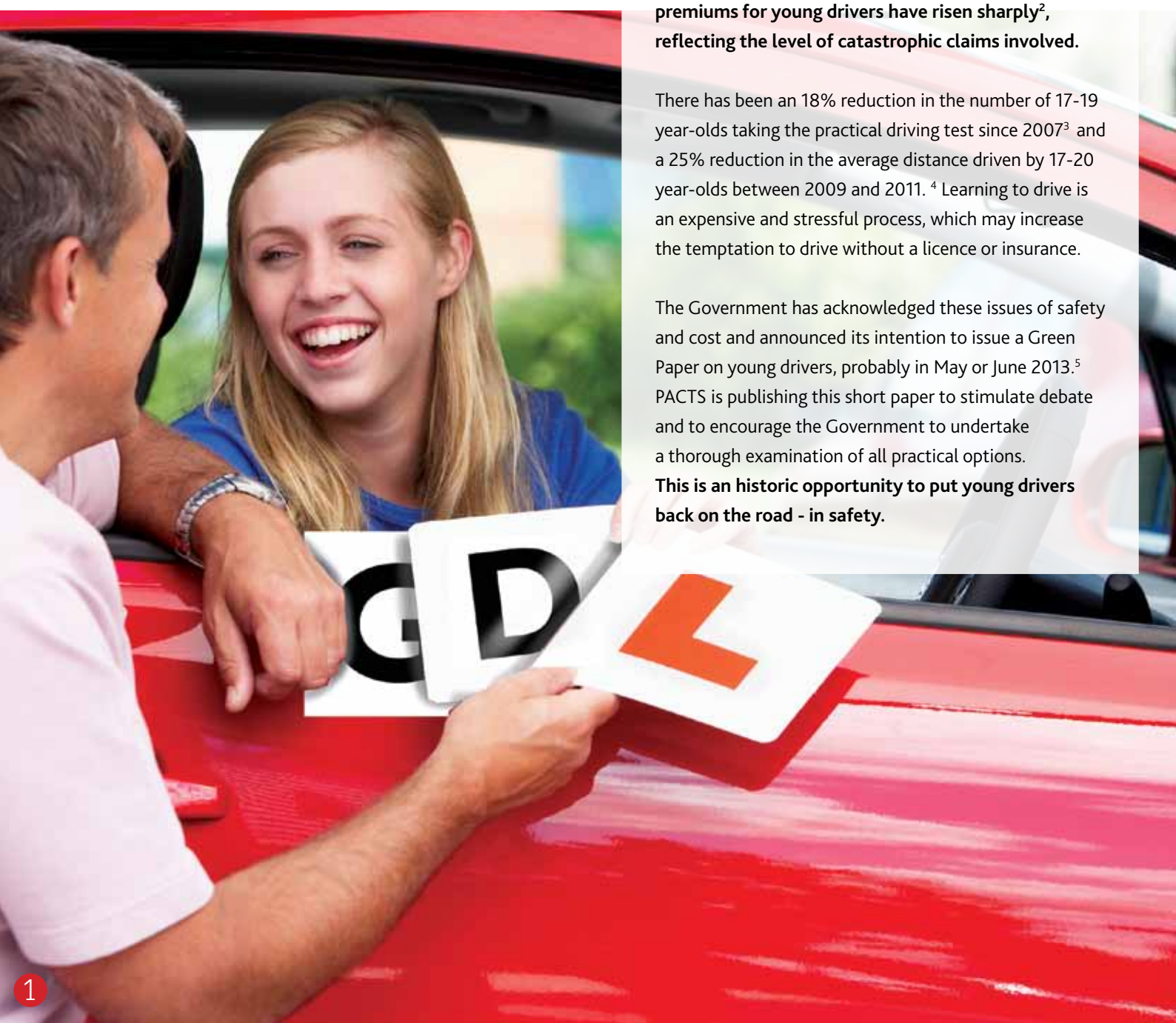
Nobody would expect a newly qualified doctor, straight from medical school, to make life and death decisions in an instant, without further support, experience or training. Yet this is what is expected of young drivers in Great Britain. Most people would accept that it takes time and experience to become a fully safe and confident driver.

The evidence bears this out.

The current system is neither sufficiently safe nor in the interests of young people. Over 50% of people will fail their first driving test [1] and insurance premiums for young drivers have risen sharply[2], reflecting the level of catastrophic claims involved.

There has been an 18% reduction in the number of 17-19 year-olds taking the practical driving test since 2007[3] and a 25% reduction in the average distance driven by 17-20 year-olds between 2009 and 2011. [4] Learning to drive is an expensive and stressful process, which may increase the temptation to drive without a licence or insurance.

The Government has acknowledged these issues of safety and cost and announced its intention to issue a Green Paper on young drivers, probably in May or June 2013.[5] PACTS is publishing this short paper to stimulate debate and to encourage the Government to undertake a thorough examination of all practical options.
This is an historic opportunity to put young drivers back on the road - in safety.



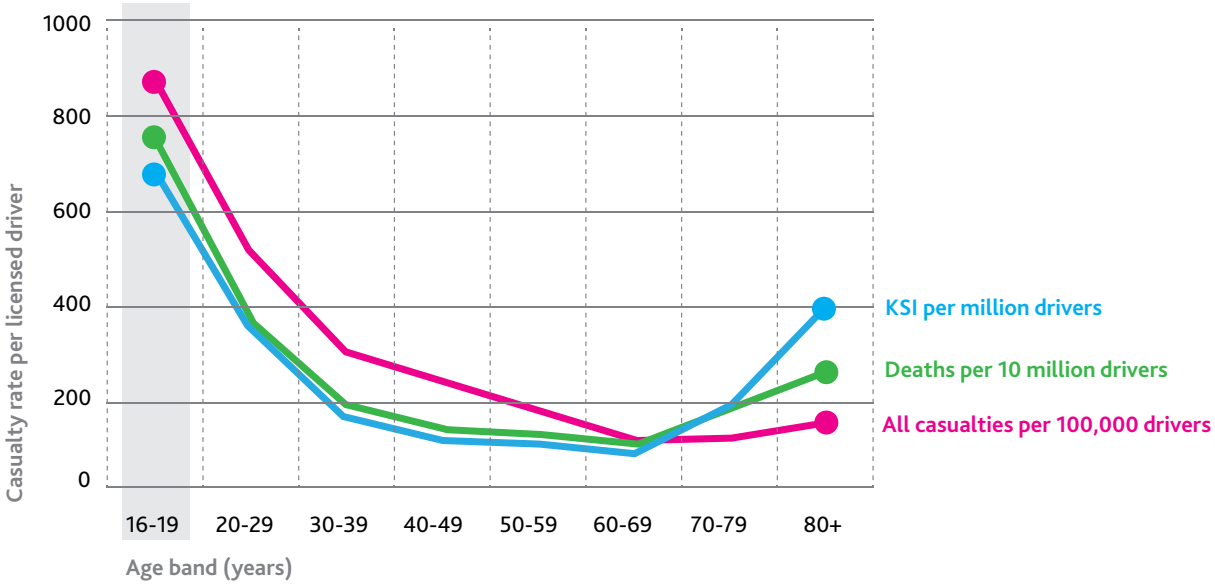
The safety problem

Young drivers are disproportionately involved in crashes.

The link between driver age and crash involvement is clearly illustrated, *(Figure 1)*.

Driver age and experience are both key factors in determining risk levels.

Figure 1: Casualty Rates for Car Drivers by Age[6]



In 2011, 412 people were killed in accidents involving young car drivers (17-24 years), accounting for 22 per cent of all road deaths[7], and nearly a fifth (1,552) of all car occupants killed or seriously injured were young car drivers (17-24 years);[8]

In recent years the scale of the problem has been masked, not solved, by reductions in the number of young drivers. The number of young drivers killed decreased by 48% between the 2005-09 average and 2011. However, as the Department for Transport points out, *"these reductions may reflect fewer young drivers on the road or that they are driving less"* [9]

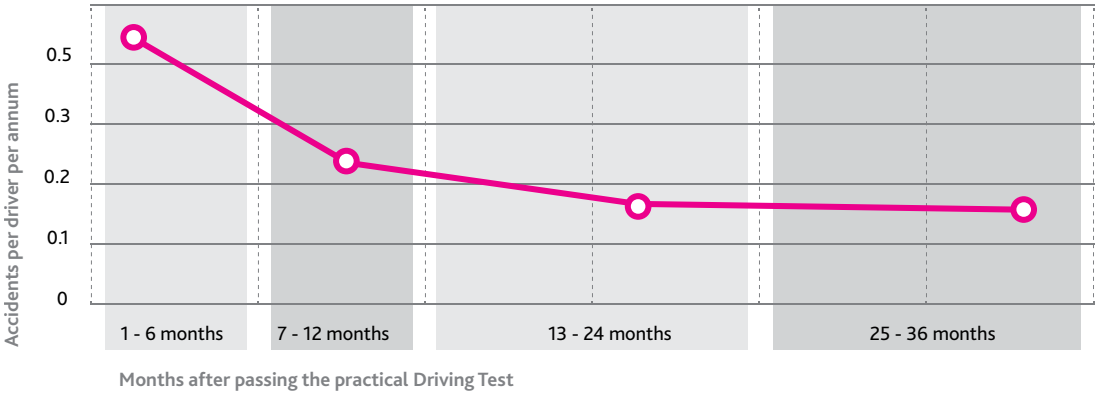
'The young driver crash problem is a significant public health concern. But there are effective, evidence based solutions to this problem. Graduated Driver Licensing has been consistently demonstrated to reduce young driver crashes, casualties and fatalities and action to implement it is urgently needed in the UK. However, doing this should not be compromised by reducing the learner age; this is contrary to efforts almost everywhere else and risks cancelling out the possible gains associated with GDL.'

Dr Sarah Jones, Honorary Senior Lecturer, Cardiff University

Driver experience

For a driver of any age, the crash involvement rate is almost halved after the first six months, with a further substantial decrease in the next six months. After that the rate of decline slows *(Figure 2)*. From this it might seem that the problem is not young drivers but novice drivers. The reality, however, is more complex.

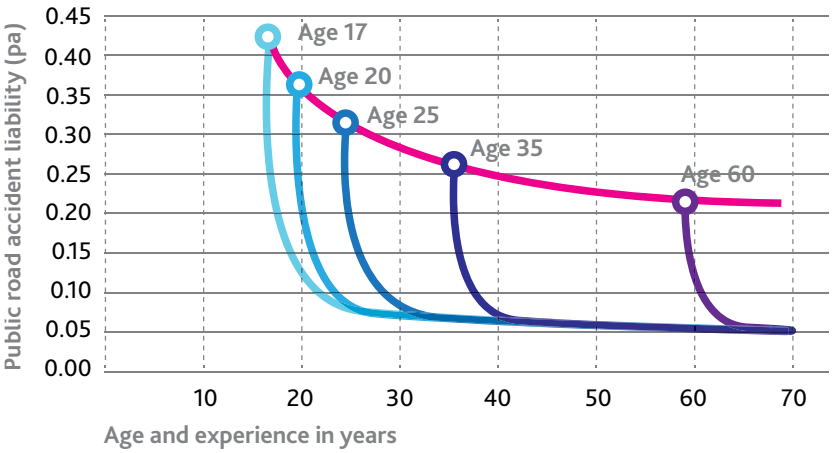
Figure 2: Annual rate of accident involvement for newly qualified drivers[10]



Driver age

The risk of crash involvement is far greater for newly qualified young drivers than for newly qualified older drivers. The blue lines *(Figure 3)* 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 almost 50% higher than those learning at age 25 and around double the level of those learning at age 60.

Figure 3: The effects of age and experience on accident involvement [11]



Catastrophic claims

Not all crashes involve personal injury and personal injuries can vary enormously in their severity and costs. One reason that young driver insurance premiums are so high is that young drivers are disproportionately involved in "catastrophic" injury claims (defined by the insurance industry as those costing over £500,000). This is because a young driver crash is more likely to involve an older, less safe car with multiple young passengers who sustain serious injuries and require long-term care.

Figure 4: Catastrophic claims as a proportion of total claims by value, by age and years of driving experience.[12]

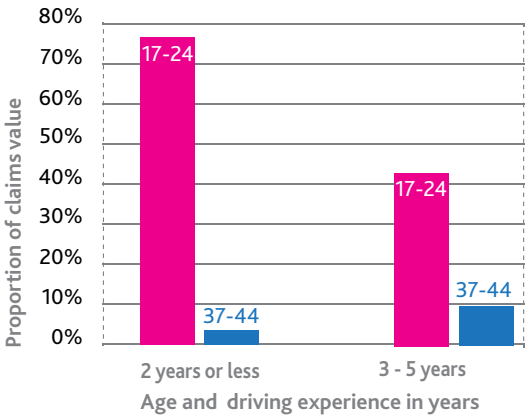


Figure 4 shows that claims made by drivers aged 17-24 years with up to two years of experience are far more likely to be catastrophic than claims made by drivers some 20 years older with the same level of driving experience. The difference reduces with three to five years of experience but remains pronounced.

The insurance industry claims data are not directly comparable with the casualty data (such as police STATS19) but they provide useful additional insights. Large amounts of detailed data on driver behaviour and safety are becoming available through the use of telematics (see below). It would be helpful if the Government and the insurance industry established protocols for sharing, analysing and publishing such data.

What young drivers say about their behaviour

Young drivers acknowledge that they engage in some risky and even illegal behaviours. In the THINK! Annual Survey of 2011[13] young drivers (aged 29 and under) reported themselves as substantially more likely to text while driving, drive too fast for the conditions and use a mobile phone with a hands-free kit than drivers overall. Young people were less likely to see behaviours such as texting while driving as being dangerous.

Young drivers were also more likely to report seeing these behaviours amongst their peers: to know someone who drives at 40 mph in a 30 mph area and someone who drives at 90 mph on a motorway when there is no traffic. They were also more likely to know someone who carries on driving when too tired (56% of the 18-29 year-olds).

In another study,[14] younger respondents (17 to 24 years) described a more unsafe driving style. When commenting on their post-test driving they reported being less attentive, careful, responsible and safe, less placid, patient, considerate and tolerant, and more decisive, experienced, confident and fast than did older respondents (25+ years).

New drivers also acknowledged the need to improve their skills, although males were less likely to do so than females.

95% of all practical test respondents perceived a need for at least 'some' improvement in at least one of the 15 categories of driving skills;

29% of all respondents had a subjective need for 'a lot' of improvement to at least one of the driving skills listed; this need was more commonly reported by female than male respondents (33% and 21%, respectively);

Male respondents were three times as likely as females to report not needing to improve any of the listed driving skills.

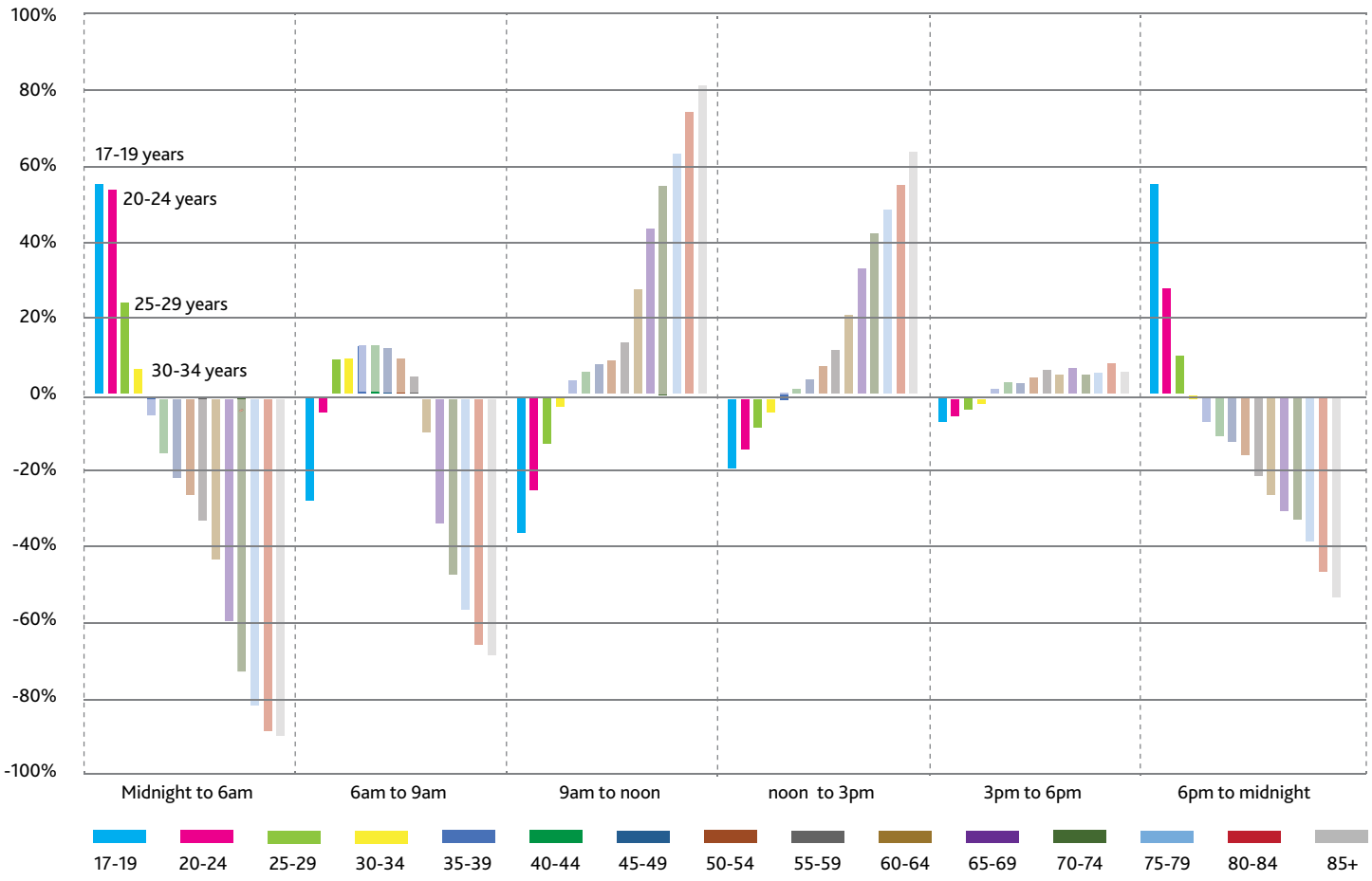
The higher levels of confidence among males are not reflected in lower crash involvement rates.[15]

Features of crashes involving young drivers

The graphs below illustrate the disproportionate extent to which young drivers are involved in crashes at night, involving multiple injured passengers and alcohol.

The tendency of drivers aged under 25 years to crash disproportionately often at night is shown in *Figure 5* below. This may reflect relative skill levels, risk taking and the amount of driving undertaken by young drivers at night.

Figure 5: Distribution of crash times compared to age weighted average, 2007 – 2011 [16]



This chart illustrates variation in the age of drivers involved in reported injury crashes at different times of day over the last five years. The percentage values compare actual driver numbers to a weighted average, which represents what would happen if crash involvement for all age groups were spread consistently across all times.

For example, the chart shows a 55% over representation for drivers aged 17 to 19 between midnight and 6 AM. This means that for every 100 young drivers who would have crashed at night if all age groups were equally likely to do so, 155 young drivers actually did. In real numbers, 1,010 young drivers would have crashed at night each year if all age groups were equally likely to do so - but on average 1,567 young drivers actually did.

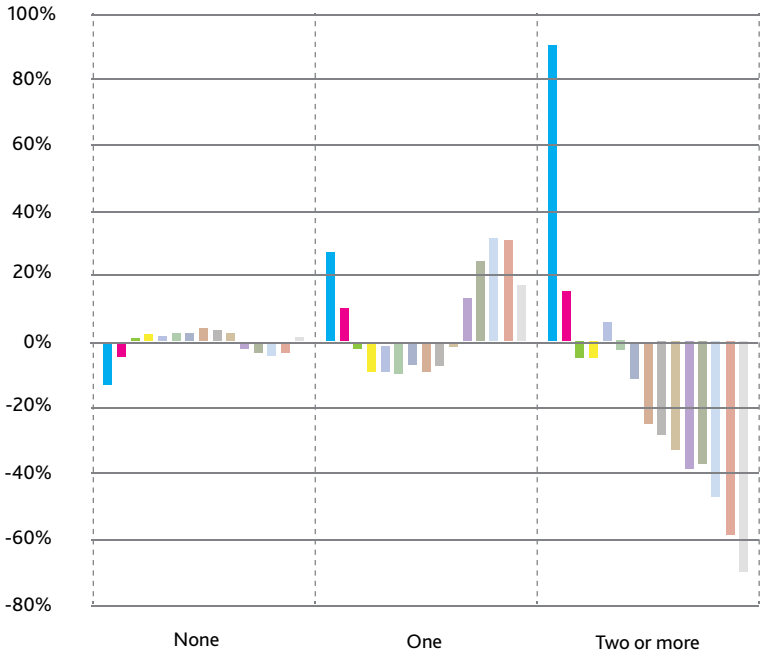
In contrast the same age group are 37% under-represented in crashes between 9 AM and Noon. This means that for every 100 young drivers who would have crashed in the morning if all age groups were equally likely to do so, only 63 actually did. In real numbers, 3,283 young drivers would have crashed in the morning each year if all age groups were equally likely to do so - but on average only 2,073 actually did.

'It is our opinion that the introduction of a graduated driving licence would ensure that young drivers are better equipped to drive safely on the roads. We would support the introduction of minimum levels of driving experience pre-test but would be less supportive of any reduction in the age limit to drive. Post-test the GDL should include limits on numbers of passengers and the appropriate use of telematics or additional driver training schemes would be favourable. ACPO look forward to engaging with partners to finalise proposals for the future.'

Chief Constable Suzette Davenport,
Roads Policing Lead at the Association of Chief Police Officers (ACPO)

Drivers aged under 20 years involved in crashes are far more likely to have multiple injured passengers *(Figure 6)*.

Figure 6: Age distribution of drivers with injured passengers, 2007 – 2011 [17]

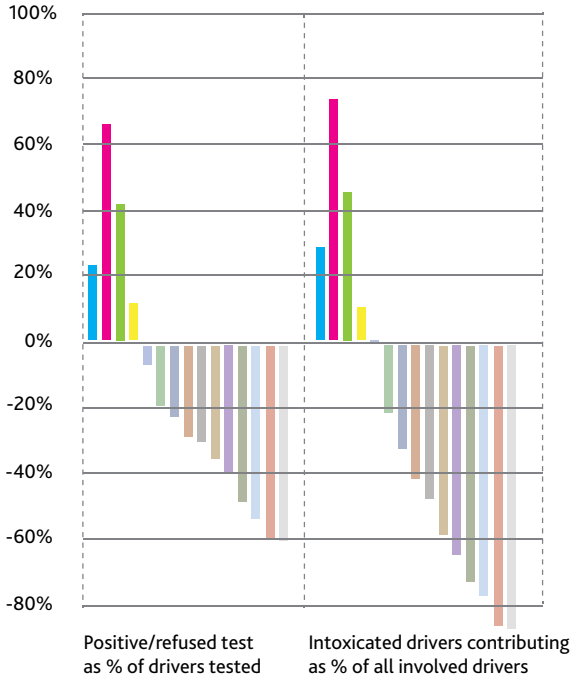


This chart illustrates variation in how often injury to passengers is reported in vehicles driven by different age groups over the last five years. The percentage values compare actual numbers of drivers in each age group with passenger casualties in their vehicle to what would happen if passenger casualties were spread consistently across all driver age groups.

For example, the chart shows a 90% over representation of two or more injured passengers in vehicles driven by 17 to 19 year olds. This means that for every 100 young drivers who would have had multiple injured passengers if all age groups were equally likely to have them, 190 young drivers actually did. In real numbers, 1,144 young drivers each year would have had multiple injured passengers if all age groups were equally likely to have them - but on average 2,178 young drivers actually did.

Young drivers are over represented in general, and drivers aged 20-24 years in particular, among intoxicated drivers *(Figure 7)*.

Figure 7: Age distribution of intoxicated drivers in police attended crashes, 2007 - 2011 [18]



This chart illustrates variation in how often drink driving is reported for drivers of different age groups involved in police attended injury crashes over the last five years. The assistance of the Department for Transport in providing the data for this chart is gratefully acknowledged. The percentage values compare actual numbers of drivers impaired by alcohol in each age group to what would happen if impairment were spread consistently across all driver age groups. Two different measures of alcohol intoxication are provided: breath tests provided by involved drivers; and whether driver intoxication was a likely contributing factor to the crash in the opinion of an attending police officer.

For example, the chart shows a 68% over representation of positive or refused breath tests provided by drivers aged 20 to 24. This means that for every 100 drivers who would have provided a positive test if all age groups were equally likely to do so, 168 drivers actually did. In real numbers, 1,007 drivers aged 20 to 24 each year would have provided a positive breath test if all age groups were equally likely to do so - but on average 1,689 drivers actually did.

Tackling the problem

The safety of young drivers is not a new concern, or one restricted to the UK. The main types of safety intervention to date have been to improve driver education, training and testing and to limit the risk exposure of young drivers and their passengers. More recently, the insurance industry has introduced insurance based telematics.

Education and training

It is self-evident that driver education and training, including vehicle manoeuvring skills, mastering traffic situations and general skills for driving, are required in order to enable people to drive. It is therefore perhaps not surprising that improved driver education and training are often put forward as the answer to the problem of young driver safety.

The major reviews of driver training and education targeted at young and novice drivers from the previous two decades came to remarkably consistent conclusions: additional driver education and training, beyond that required to pass the test, has been shown to have limited direct beneficial effects on the safety of new drivers.[19] [20]

Some authors note that this finding is not surprising, when considered in the light of fundamental theories and evidence from the skill acquisition literature.[21] [22] Some education approaches, not coupled to effective training, can encourage misplaced confidence and lead drivers to take more risks in later driving than they would otherwise have done. In addition, some training approaches can lead to gaining a licence earlier, and therefore earlier exposure to risk and with less experience.[23] The overall conclusion is that, while high quality training is important, education should not be seen as a 'magic bullet'[24] for improving young driver safety in the high-risk post-qualification period.

More recent approaches to driver training that treat driving as a cognitive skills may be a way forward. One method within this cognitive approach that shows considerable promise is the training of hazard perception skills.[25] There is some evidence that the hazard perception testing introduced into the GB practical driving test in 2002 has had a safety benefit for new drivers.[26] It is also plausible that training and education interventions can support more robust approaches to the young driver problem, for example by raising the perceived legitimacy of these or by supporting wider cultural shifts in the way people think about road safety.[2] All of this suggests that driver training and education remains an important research area.

Telematics

A promising new approach to encouraging safer driving is telematics-based insurance. These policies are usually targeted at young drivers, using new technology to monitor information about driving. A 'black box' with a satellite (GPS) receiver is fitted in the car to record speed, distance and time of travel as well as driving style (eg accelerating and braking). Some insurers use a mobile-phone based "app" instead. Information is provided to the driver and the insurer. Insurers can then adjust the cost of insurance for each individual, reflecting their risk profile and exposure. Some schemes provide regular rewards to the driver for safe driving behaviour.

The UK insurance industry was one of the first to start trialling telematics-based insurance, and now a range of companies offer services based on individual driver behaviour. Some use the data to set the initial premium; others provide regular feedback and incentives for safer driving, such as additional "free" miles if the driver avoids rapid acceleration, sudden braking or night driving.

Some insurers are convinced that telematics based insurance not only reduces the claims exposure for the industry but also has a positive safety impact on driving style. It also has the potential to provide large amounts of detailed data on driving behaviours and crash involvement. However, telematics-based insurance schemes are still in the early stages, there is no industry standardisation (though good practice guidance has recently been produced) and the data are not shared across the industry or publicly available.

There are also some significant safety elements that telematics cannot deliver, such as restricting the number or the behaviour of passengers.

Reducing risks - graduated driver licensing

Many countries [30] have decided that it is not adequate to rely on training and education. They have introduced measures to limit the exposure of young drivers and their passengers during and after the learning period. This is generally known as graduated driver licensing (GDL), and enables new, usually only young, drivers to gain experience of driving under conditions of reduced risk.

Risk exposure reduction

This generally includes a phased or conditional approach to:

DRIVING AT NIGHT
DRIVING WITH PASSENGERS OF A SIMILAR AGE
DRIVING HAVING CONSUMED ANY ALCOHOL

The exact nature of GDL schemes varies from country to country. The typical GDL scheme gives the new young driver permission to drive unaccompanied, but not in high risk situations, unless they are supervised by a fully qualified driver. The number of teenage passengers is also restricted. It works by placing an 'intermediate' phase between the learner and full licence, when these permissions are applied. This intermediate phase lasts for a fixed period, up to two years in some places.

GDL also usually involves a minimum learner period of up to one year.[31] This may involve specific training requirements, such as driving for a certified minimum number of hours and driving in particular conditions, such as at night.

'**FirstCar** has always supported improvements in driver training and the introduction of road safety education to the national curriculum. However, voluntary education and insurance related schemes can only achieve so much and we would welcome the introduction of measured GDL for new and young drivers. Young drivers are prone to being pushed outside of their comfort zones by peer pressure; **FirstCar** believes GDL would relieve inexperienced drivers of this by taking decisions, such as whether to drive at night or carry a car full of passengers, out of their control.'

James Evans, Editor, FirstCar Magazine - produced for young drivers, by young drivers

Case study: New Zealand[32]

STAGE 1: GETTING YOUR LEARNER LICENCE

You must be at least 16 years old before you can apply for your learner licence. You have to pass a road rules theory test to get this licence.

WHILE ON A LEARNER LICENCE:

- You must only drive with a supervisor sitting beside you at all times. You may carry passengers but your supervisor has to agree to this. (Supervisors have to have held their full licence for at least two years.
- Your car must display learner (L) plates front and rear.

STAGE 2: GETTING YOUR RESTRICTED LICENCE

To apply for your restricted licence, you must be at least 16½ years old, and have held your learner licence for at least six months. To progress to this step, you'll have to pass a practical test of your driving skills.

WHILE ON A RESTRICTED LICENCE:

- You can drive on your own, but not between 10pm and 5am
- Generally, you cannot carry passengers without the supervision of a licensed car driver.

STAGE 3: GETTING YOUR FULL LICENCE

You must be at least 18 years of age before you can apply for your full licence. If you have completed an approved advanced driving skills course, this is reduced to 17½.

If you are under 25 years of age, you can apply after you've held your restricted licence for:

- at least 18 months; or
- at least 12 months if you have completed an approved advanced driving skill course.

If you are 25 years of age or older, you can apply after you have held your restricted licence for:

- at least six months, or
- at least three months if you have completed an approved advanced driving skills course.

The safety outcomes

Where GDL has been introduced it has been demonstrated to have only positive safety effects and public support. Casualties and crashes have reduced and teenager and parent empowerment has increased.

In 2011, a major review concluded that "GDL is effective in reducing crash rates among young drivers, although the magnitude of the effect varies. The conclusions are supported by consistent findings, temporal relationship, and plausibility of the association. Stronger GDL programmes (i.e. more restrictions or higher quality based on IIHS classification) appear to result in greater fatality reduction." [33]

Calculating an overall effect of GDL is not possible because of the different social, cultural and environmental settings in which different programmes exist. However, some of the summary findings from the review are notable:

4-7% reduction in all crashes involving a teenager driver

4-23% reduction in injury crashes involving a teenage driver

19-20% reduction in hospitalisations involving a teenage driver

15-57% reduction in fatal crashes involving a teenage driver

The above results are at one year (adjusted) and based on all teenage drivers (16 – 19 years old) and calculated as a population rate.

The data on the effects on night time crashes are more limited, but based on all teenaged drivers, with a licensed driver rate calculated, there was a reduction in crashes of between 3% and 48%. In terms of alcohol related crashes, there was a decrease of 19% per licensed driver for all teenage drivers.[34]

GDL in the UK

The potential to reduce casualties in the UK

Analysis of police crash (STATS19) data indicates that substantial numbers of fatalities, casualties and crashes occur in the UK every year in the circumstances covered by typical GDL schemes.

Jones et al. (2012)[35] analysed young driver crashes in the GB between 2000 and 2007 and identified those that occurred late at night or with teenage passengers present, but without supervision of an over 25 year-old.

Based on the circumstances of a stricter GDL model (permission not given to drive between 9pm and 6am, nor to carry any 15 to 24 year-old passenger), there are around 14,700 casualties per year associated with young driver crashes, including 230 fatalities.

A less strict model (permission not given to drive between 10pm and 5am, nor to carry more than one 15 to 19 year-old) showed that there are around 8,400 casualties per year associated with young driver crashes, including 160 fatalities.

These estimates may be conservative given that they do not account for the safety benefits of a minimum learning period. Because of the limitations of the data, it was not possible to account for the effects of a zero blood alcohol content usually mandated by GDL programmes.

'Insurers want to see young drivers become safer and if this can be achieved their premiums will come down to more affordable levels. If young driver crashes decrease, the risk they pose to an insurer decreases and insurance premiums for young drivers will follow. The international evidence points to the overwhelming success of graduated licensing schemes and the insurance industry firmly believes that introducing a 12 month minimum learning period, followed by post-test restrictions will significantly improve the safety of young drivers.'

Nick Starling, Director of General Insurance, Association of British Insurers (ABI)

Introducing GDL here

The forthcoming Green Paper on young drivers is likely to include proposals for some form of GDL. PACTS welcomes this consultation.

In Northern Ireland, proposals are more advanced. It is expected that the Northern Ireland Executive will shortly introduce the Road Traffic (Amendment) Bill which will include proposals for Graduated Driver Licensing. Learners will have to hold their provisional licence for a minimum of 12 months before they can sit their first practical test, during which time they will have to follow a structured syllabus. Once passed the test, new drivers will have to display N plates ('new' driver/rider), and young new drivers (up to age 24) will not be allowed to carry young passengers (aged 14 to 20, except immediate family members) during their first 6 months after they have passed their driving test.[36]

POTENTIAL CONCERNS AND OBJECTIONS

The safety of young drivers has often been raised in Parliament.[37] However, GDL has always been dismissed or considered "too difficult" and governments have never thoroughly consulted the public on it. Inevitably there will be many questions about the nature of a possible scheme and its impacts. These might include:

Belief that young drivers need a 'trade off' and a reduced learner starting age.

Reducing the learner age tends to be counter-productive in safety terms. Increasing the learner age from 16 to 16.5 years reduced the fatal crash rate in one study by 7%, the increase to 17 years brought about a 13% decrease.[38] Global reviews of licensing age indicate that a higher licensing age is associated with safety benefits.[39] [40]

Enforcement and compliance

A study of young people in New Zealand found that while 26% supported all three GDL conditions (night time, passengers and alcohol), 78% would not breach the licensing conditions. In addition, 30% believed that the passenger restriction was convenient in that it removed their responsibility for driving others.[41]

In all GDL systems, the parents are viewed as the primary enforcers of the restrictions.[42] Research has found that parents are strongly supportive of GDL and do not feel that the restrictions are inconvenient.[43] In the UK, the police (through ACPO) have expressed support for GDL and stated that they will find ways to address enforcement and the driver identification issues that go with this.

Perceptions of the impact on education and employment opportunities

GDL seeks to restrict recreational driving, rather than purposeful driving. Exemptions from the restrictions are usually given for journeys to and from home and work or school.[44] It may be argued that this makes GDL unworkable and unenforceable. But most of the systems for which the evidence of effectiveness is presented above operate such exemptions.

Perceptions of restriction

It is suggested that 'restricting' young drivers is unfair. Research has found that *"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".*[45]

The UK already has some elements of GDL. For example, newly qualified drivers may be required to undergo testing for offences committed within two years of passing the practical driving test.

GDL would unfairly penalise the majority of law abiding young drivers

Research in other jurisdictions suggests that most young drivers involved in fatal crashes do not have prior violations or crashes on their records and so potential problem drivers cannot be easily identified.[46]

Beliefs that crash risk will go up when the restrictions are lifted.

What exactly happens to crash risk once the restrictions are lifted is not clear and depends on the specific features of the GDL scheme. However it is clear that a considerable amount of driving experience will have been developed and the driver will be 'older', reducing the age effect that is a key young driver crash risk factor.[47]

PACTS' conclusions and recommendations

In PACTS' view, there is a serious safety problem involving young drivers in the period immediately after they pass their driving test. In recent years the severity of the problem may have been masked by the reduction in driving by young people. PACTS is not wedded to any particular scheme but wants to see the options explored thoroughly and rationally.

Other countries, such as Australia, New Zealand and Canada, operate graduated learning and licensing systems for young drivers. The research consistently finds that these reduce casualties. Yet in the UK such schemes have long been consigned to the "Too Difficult" pile on ministerial desks - until now.

We therefore welcome the Government's announcement that it will publish a Green Paper on young drivers. It is important that this includes a comprehensive examination of the case for a graduated learning and licensing system. Any scheme should be evidence-based and the casualty prevention potential of all options should be identified, as far as possible. Options, including graduated permissions on passengers and night-time driving, and lower blood alcohol limits, should not be ruled out before they are thoroughly and publicly examined.

There should also be thorough consultation with young people and their parents, who will be most directly affected by any changes. It is vital that any scheme is introduced with support of these communities and is not something imposed on them. The evidence suggests that this can be achieved. The language used is important. We believe this should be viewed as Graduated Driver Learning, with skills, experience and responsibilities developing together over time with a set of permissions rather than restrictions.

Improved driver training, education and testing have valuable roles to play and should be pursued but research show that these have not reduced the risks sufficiently. Telematics may provide a new means of reducing risk-taking and encouraging safer driver behaviour but these systems are not widespread or standardised and have not been systematically evaluated.

The Government should investigate a comprehensive approach to young driver safety, exploring what the best elements of a well-designed training regime, telematics and graduated permissions might achieve so that young drivers can get back on the road in safety.

Acknowledgements

PACTS would like to thank members of the *PACTS Road User Behaviour Working Party* for helping to initiate this paper.

Particular thanks are due to *Professor Oliver Carsten*, *Dr Sarah Jones*, *Dr Shaun Helman* and *Road Safety Analysis* for material provided and to *Poppy Husband*, *Kate McMahon*, *Dr Nicola Christie* and *Scott Pendry* for additional input.

PACTS takes responsibility for the contents of this paper.

PACTS also wishes to thank the *GEM Motoring Assist Road Safety Charity* for its generous financial support for the production and publication of this paper.

April 2013

References

1. **Department for Transport (2012)**
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/9064/driver-rider-q4-2011.pdf
2. **Transport Committee 2011**, *The Cost of Motor Insurance, 2010*
http://www.publications.parliament.uk/pa/cm201011/cmselect/cmtran/591/591.pdf
3. **DfT in** *MSA Newslink March 2013, p6*
4. **Department for Transport (2012**). *National Travel Survey. Table NTS0605*
https://www.gov.uk/government/statistical-data-sets/nts06-age-gender-and-modal-breakdown
5. **Motor Insurance Summit, 25 March 2013**,
https://www.gov.uk/government/news/government-to-overhaul-young-driver-rules-in-bid-to-improve-safety-and-cut-insurance-costs
6. **Road Safety Analysis (2012)**. *Young Drivers' Road Risk and Rurality.*
http://www.roadsafetyanalysis.org/wp-content/uploads/2012/02/Young-Drivers-Road-Risk-and-Rurality.pdf Figure 1
7. **Department for Transport (2012)**, *Reported Road Casualties Great Britain: 2011. Annual Report, p 39*
8. **Department for Transport (2012**), *Reported Road Casualties Great Britain: 2011. Annual Report, p 40*
9. **Department for Transport (2012)**, *Reported Road Casualties Great Britain: 2011. Annual Report, p 39*
10. **Wells, P., Tong, S., Sexton, B., Grayson, G. and Jones, E. (2008). Cohort II: a study of learner and new drivers. Volume 1 — Main Report. Road Safety Research Report No. 81.**
http://webarchive.nationalarchives.gov.uk/20120606181145/http:/www.dft.gov.uk/publications/cohort-ii-a-study-of-learner-and-new-drivers/
(This study included all crashes ie injury and non-injury)
11. **Department for Transport (2008)**. *Learning to drive: the evidence. Road Safety Research Report No. 87.*
http://webarchive.nationalarchives.gov.uk/20090417002224/http:/www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme2/rsrr87.pdf
12. **Starling, Nick (2013)**. *Trends in claims and what they mean for safety.*
Presentation to PACTS conference "Lies, Damned Lies and Statistics", 21st March 2013, Royal College of Surgeons, London
13. **Department for Transport (2012)**. *Think! Annual survey 2011.*
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/8087/think-annual-report-2011.pdf
14. **Wells, P., Tong, S., et al. (2008)**. *Op.cit.*
15. **Maycock, G. and Lockwood, C. R. (1993)**. *The accident liability of British car drivers.* Transport Reviews, 13: 3, 231-245
16. **Data analysis provided to PACTS by Road Safety Analysis** http://www.roadsafetyanalysis.org/
17. **Data analysis provided to PACTS by Road Safety Analysis**
18. **Data analysis provided to PACTS by Road Safety Analysis**
19. **Helman, Grayson and Parkes (2010)** *How can we produce safer new drivers? A review of the effects of experience, training, and limiting exposure on the collision risk of new drivers.* TRL Insight Report (INS005). Crowthorne: Transport Research Laboratory.
20. **Clinton & Lonero (2006)**; **Mayhew, Simpson & Robinson (2002)**; **Roberts & Kwan (2001)**; **Christie (2001)**; **Vernick, Li, Ogaitis, Mackenzie, Baker & Gielen (1999)**; **Mayhew, Simpson, Williams, & Ferguson (1998)**; **Brown, Groeger, & Biehl (1987)**.
21. **Helman, Grayson and Parkes (2010)**. *Op. cit.*
22. **See Groeger and Banks (2007) for a detailed discussion**. *Anticipating the Content and Circumstances of skill transfer: Unrealistic expectations of driver training and graduated licensing?* Ergonomics, 50, 1250-63.
23. **See Williams and Ferguson (2004) for a discussion**. *Driver education renaissance?* Inj Prev 2004;10:4-7
24. **McKenna (2010). E***ducation in Road Safety: Are we getting it right?* RAC Foundation: London
25. **Helman, Grayson and Parkes (2010)**. *Op. cit*
26. **Wells, Tong, Sexton, Grayson & Jones (2008)**. *Op. cit.*
27 **Helman et al., 2010**. *Op. cit.*
30. **Canada, USA, New Zealand and Australia.**
31. **Begg et al. (2001)**; **Ferguson & Williams (1996)**
32. http://www.nzta.govt.nz/licence/getting/cars/car-licence.html
33. **Russell et al. (2011)**. *Graduated driver licensing for reducing motor vehicle crashes among young drivers (Review)*. http://www.update-software.com/BCP/WileyPDF/EN/CD003300.pdf
34. **Russell et al. (2011)**. *Op. Cit.*
35. **Jones et al (2012). R***educing young driver crash casualties in Great Britain - Use of routine police crash data to estimate the potential benefits of graduated driver licensing.* Int J Inj Contr Saf Promot (September 2012)33.
36. **Department of Environment Northern Ireland, 2013,**
http://www.doeni.gov.uk/roadsafety/planned_changes_to_driver_rider_training_and_testing_in_northern_ireland_-_jan_2013.pdf
37. www.parliament.uk/briefing-papers/SN00517.pdf
38. **McCartt et al. (2010)**. *Graduated licensing laws and fatal crashes of teenage drivers: a national study.*
Traffic Injury Prevention, 11, 240-248.
39. **Williams (2009)**. *Licensing age and teenage driver crashes: a review of the evidence.* Traffic Injury Prevention, 10, 9–15.
40. **Begg & Langley (2009)**. *New Zealand Drivers Study: a follow-up study of newly licensed drivers.* Inj Prev. 2009 Aug;15(4):e2.
41. **Begg & Stephenson (2003)**. *Graduated driver licensing: the New Zealand experience.* Journal of Safety Research, 34, 99–105.
42. **Williams (1999**); **Foss & Goodwin (2003)**.
43. **Brookland & Begg (2011)**; **Ferguson & Williams (1996)**.
44. **Williams (1999)**. *Graduated licensing comes to the United States.*
Journal of the International Society for Child and Adolescent 5(2):133-135.
45. **Foss and Goodwin (2003)**. *Enhancing the effectiveness of graduated driver licensing legislation*. Journal of Safety Research; 34(1):79-84.
46. **Williams (1999)**. *Op. Cit.*
47. **Williams (2006)**. *Young driver risk factors: successful and unsuccessful approaches for dealing with them and an agenda for the future.*
Inj Prev. 2006; 12(Suppl 1):i4–8.

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