



RAC Foundation submission to Transport Select Committee Inquiry on Road Safety for Young and Novice Drivers

About the RAC Foundation

The RAC Foundation is a transport policy and research organisation which explores the economic, mobility, safety and environmental issues relating to roads and their users. The Foundation publishes independent and authoritative research with which it promotes informed debate and advocates policy in the interest of the responsible motorist.

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Synopsis

Young and novice drivers are particularly vulnerable to death and serious injury, not just because of their inexperience, although this does play an important part. Consequent on this, it is important to provide this group with the help and support they need to mature into safe drivers. A start can be made before young people reach driving age, but any pre-driver education should be evidence-based and focus on supporting the uptake of risk reducing activities such as hazard perception training, extensive learner driver experience pre-test and/or providing tools and techniques for supporting safe decision-making once young drivers have passed their test and are driving solo.

Of the practical approaches already been taken to influence young driver safety, the RAC Foundation supports Government's provision of a practical driving test more akin to a test of real-world driving conditions by allowing for supervised motorway driving. Going forwards, technology developments are opening-up a multitude of options for capturing and displaying the visuals for training and testing hazard perception, the investigation of which should be a priority for DVSA. The growing use of dashcams also provides greater opportunity for young and novice drivers to capture evidence in the event of an incident where fault is contested. The UK is significantly more advanced than many other countries in the uptake of telematics-based insurance for young and novice drivers, and with the UK's expressed interest in Graduated Driver Licensing (GDL), it would be useful to explore how and to what extent telematics is providing some of the benefits that would also be delivered by a GDL approach.

The RAC Foundation supports the development and application of GDL in the UK based on the consistent International evidence of its effect, but also recognises that work would be required to deliver the approach, relevant to UK circumstances, especially where telematics insurance programmes are already highly prevalent.

If even only a handful of GDL elements were deemed feasible to implement, such as number of passengers and/or mandated driver practice pre-test, these are likely to still be able to deliver benefits, although more comprehensive adoption of all GDL elements would undoubtedly have a greater magnitude of effect.

The RAC Foundation was pleased to see several evidence-based approaches to tackling young and novice driver safety outlined in the DfT's recently published Road Safety Statement (2019) including the ongoing support for the Driver2020 programme, investigation of GDL, activity to change public norms by communication and broadening pre-driver learning experience.

The RAC Foundation supports the Government's Driver 2020 programme of research, but given that this trial will take time to conclude, the Government are strongly encouraged to move current provision in the direction of the strength of the evidence that is already available in this field, to ensure safety of young and novice drivers is maximised in the interim. The DVSA campaign to develop a behaviour change campaign to encourage learners to broaden the range of roads they practice and learn on, as detailed in the Road Safety Statement, is to be encouraged as is the continued commitment for the THINK! Campaign to help influence social norms for young and novice drivers particularly with regards to promoting risk reducing coping approaches that they can use with their immediate social circle.

Executive Summary

The RAC Foundation welcomes the Transport Select Committee's Inquiry into Road Safety for Young and Novice Drivers. Young driver safety remains a key public health concern both in the UK and internationally, despite decades of policy action and research in the field. Importantly there is a wealth of knowledge available to inform the UK to take the necessary steps to reduce death and serious injury amongst this at-risk group.

This submission draws on both RAC Foundation published research and the broader literature to highlight the key risk factors associated with young and novice driver safety alongside the evidence-based actions that can be taken to improve the safety of this vulnerable group. There are several individual young and novice driver risk factors that have been found to consistently have an influence on young driver safety. These include:

- Age of driver;
- Gender of driver;
- Driver (in)experience;
- Developmental maturity;
- Proneness to errors;
- Proneness to risky driving behaviour;
- Susceptibility to distractions (peer passengers & technology) and impairments (fatigue and alcohol effects); and
- Driving skills gaps (higher order skills competence such as hazard perception and strategies for managing risk).

In addition to these individual level risk factors, it is important to recognise that the overall safety system (e.g. licensing laws, enforcement, school, family and peer safety climate etc) has an important influence on outcomes.

Research consistently highlights several evidence-based interventions for improving young and novice driver safety. These include:

- **Graduated Driver Licensing (GDL)** – including mandatory learning periods and hours of supervised practice pre-test and elements such as passenger, alcohol and night-time restrictions post-test;
- **Hazard perception training;**
- **Education** delivered and evaluated in accordance with best evidence and approaches which focus on **higher order level skills** such as hazard perception training and strategies for managing risk, as well as **engaging with parents** and **acting in support of other parts of the road safety system** (e.g. licensing rules or road traffic laws);
- **Parental involvement** via active approaches using concrete tools – such as parent-teen agreements and in-vehicle data recorder/telematic feedback; and
- **In-vehicle data recorder/telematic feedback** to provide feedback, consequences and incentives for safe driving behaviours, via parental and/or insurance provider monitoring.

In light of this evidence base, the RAC Foundation strongly supports the introduction of GDL to the UK and the further promotion of hazard perception training by Government agencies and intervention providers. The evidence also points to the importance of Government, industry, the public sector and the third sector working together to deliver integrated programmes of activity designed to have maximum impact on young and novice driver safety.

Whilst there is not sufficient evidence to assess the impact of many existing education initiatives for young or novice drivers, the evidence available points to using education programmes to support and promote risk reducing initiatives such as hazard perception training and extensive learner driver experience pre-test, and parent-teen agreements as well as tools and techniques for supporting safe decision-making post-test. We would encourage the Government to be actively involved in the reorientation of education programmes towards delivering on these outcomes in addition to supporting further research and development in this area.

The young and novice driver's social environment has been identified as vital for influencing their on-road safety, but there is paucity of action in this area in the UK, despite action having been taken in other countries, such as the US and the Australia, to positive effect. The Government should seek to encourage action on and support research in this area as a matter of priority.

In-vehicle data recorder/telematic data feedback has also been consistently recognised as assisting in the delivery of safe driving behaviours amongst this group and the considered involvement of parents within such programmes also offers much promise.

The Government's Driver2020 research programme, which tests via randomised controlled trial the effectiveness (in real world conditions) of several of these promising intervention avenues, will provide crucial evidence to recommend intervention options for Government support and delivery. Given the findings from this important programme of work will take several years to come to fruition, the RAC Foundation strongly recommends that Government, in the interim, encourages intervention activity in the areas which have the greatest promise, and actively dissuade the delivery of programmes without solid evidential backing. The RAC Foundation believes there be sufficient evidence to support this action in lieu of trial results given the urgency of ensuring young and novice driver safety.

Young and novice driver risk factors

Young driver safety is a global public health concern. Worldwide, Road Traffic Injuries (RTIs) are the leading cause of death for 15-29 year olds, making up 13% of all fatalities within this age group¹. In the UK, the 15-29-year cohort accounts for 23% of all RTI deaths², even though 17-25 year olds accounting for a much smaller percentage – 7% - of all licence holders³. Between 2000 and 2015 RTI deaths for 15-29-year olds reduced by 63%, but despite this improvement, young novice drivers remain at disproportional risk of death and serious injury. Young males are at particular risk, being almost four times more likely than young females to be involved in a killed or seriously injured (KSI) casualty³.

Over the last twenty years significant research has been conducted to understand why young novice drivers are at a disproportional risk of injury⁴. Research has largely focused on assessing and evaluating individual risk factors although system wide influences, such as, the role of parents and peers, have been increasingly recognised and investigated^{5 6}.

Driver age and experience are key contributors to greater risk taking and collision risk amongst young novice drivers^{7 8 9 10}. This is particularly true amongst male drivers^{11 4}. During the first six months of unsupervised driving one in eleven new drivers in Great Britain have been found to report a collision¹². Novice drivers also have an inflated risk of being involved in collisions within the first 36 months of unsupervised driving¹³.

Developmental maturity^{14 15 16} and consequent problems with impulse control^{17 18 19} has also been found to be a contributory factor in risk taking behaviours amongst young novice drivers, which can leave young people vulnerable to distraction from peer passengers^{18 20 21 22 23 24} and other technological distractions²¹. Young drivers are also more susceptible than older age groups to impaired driving caused by alcohol consumption²⁵ and sleep deprivation or tiredness²⁶.

In addition to these individual risk factors, young novice drivers experience gaps in their driving skills which increases crash liability²⁷. Passing the driving test is not the same as being a skilled and safe driver. Training regimes across the world almost exclusively focus on passing a practical driving test, despite the fact that the validity and reliability of a skills-based driving test has been queried across a number of studies^{28 29 30}. In contrast, high-order skills³¹ such as hazard perception are amenable to training^{32 33 34} and in a matter of hours to bring drivers up to the standard of moderately experienced drivers³⁵.

In his forthcoming report³⁶ for the RAC Foundation, Dr Simons-Morton highlights the following crash risk factors and their implications for novice driver safety.

Table 1: Crash risk factors and their implications for novice driver safety

Risk factors	Relationship to increased risk
1. Age/inexperience	Expertise comes only with experience.
2. Exposure(miles/time driving)	The more novices drive, the greater their crash risk, because they are young and inexperienced.
3. Error proneness	Novices make many errors of judgement, increasing crash risk.
4. Risky driving behaviour	Elevated G-force rates (kinematic risky driving) are high over the first two years of driving.
5. Susceptibility to distraction	Distracting secondary task engagement increases risk more among novices than in experienced adults.
6. Personal characteristics	Individual characteristics such as personality and attitudes do not provide a consistent or strong explanation of young driver risk relative to inexperience, exposure (miles driven) and risky driving behaviour.

Source: Simons-Morton (forthcoming) (adapted from Simons-Morton et al. 2019) Table 3.1, p.6

Simons-Morton (forthcoming) states that *“While there is considerable variability in their crash rates between these novices, it has been determined that inexperience, young age, exposure (in terms of total miles driven), errors of judgement, abrupt manoeuvring, distraction and possibly some psychosocial factors are important determinants. All of this is consistent with the known understanding that novices develop driving expertise consistent with safety mainly as they gain experience in real-world driving conditions”* p.16.

What can Government do to reduce these risks?

Approaches seeking to reduce young novice driver collision risk have typically focused on two main avenues of activity: driver licensing and education and training. Of the two approaches, restricted licensing, widely known as Graduated Driver Licensing (GDL), has had the most consistent and positive effect ^{37 38}.

GDL is implemented to incrementally manage young drivers’ exposure to risk in the environments that pose greatest risk to safety, such as driving at night and with peer passengers and has been successful at reducing crashes, injuries and traffic violations ^{39 40 41 42 43 44}. GDL has been described as offering ‘Universal Public Health Protection’ ⁴⁵, but despite the effectiveness of this licensing regime young novice drivers remain at elevated risk, even in jurisdictions where GDL is in place ⁴⁶. Research by the RAC Foundation ⁴⁰ has found that if GDL were introduced in the UK, 4,500 fewer people could be expected to be hurt in an average year, including about 430 people who would otherwise have been killed or seriously injured. An update of this analysis in 2018 ⁴⁷ found that the introduction of a ‘full GDL system’ based on currently available data would have less on an impact now, in terms of casualties and collisions, than if it had been introduced in 2014, with the total number of casualty reduction being estimated as 2,733, and 281 fewer people killed and seriously injured (KSI) each year in collisions involving drivers aged 17-19 years. This recent analysis does not go beyond updating the figures, so whilst the analysis has not sought to explain the changes, the RAC Foundation has posited that they could be related to factors including safer vehicles, lower mileage rates among young drivers or behaviour change caused by greater use of telematics insurance.

Further study is required to understand the underlying trends behind this change. On the basis of both RAC Foundation reports and International research, the RAC Foundation would support the introduction of GDL in the UK.

Education and driver training initiatives are also in place throughout the world, alongside, or sometimes in place of evidence-based licensing approaches such as GDL. Unlike the effects of GDL licensing approaches, there is a paucity of evidence to support the effectiveness of educational and training initiatives to reduce young driver risk⁴⁸. This is largely due to educational programme focus and applied methodologies typically lacking in rigor⁴⁹.

Educational interventions frequently focus heavily on increasing awareness and knowledge of risk-taking behaviours, which does not lead to lasting behavioural change, in part due to the recognised 'intention-behaviour' gap^{50 51}. In addition to misdirected interventions, training and education interventions have also typically lacked a robust theoretical underpinning; taking a short-term and a one-size fits all approach⁵². Studies of their effectiveness frequently involve small sample sizes and/or lack control groups⁵², often due to a lack of funding. Measuring the effect of education and training programmes is also problematic, because the desired outcome – reduced collisions – are difficult to assess. Education programmes can also, at worst, cause harm through unintended consequences of earlier driving licensure and increased exposure^{53 54}. As stated in the RAC Foundation previous submission to the Transport Select Inquiry into road safety, the lack of evidence *per se* does not mean that education programmes do not work:

Interventions most effective at reducing the number and severity of road traffic collisions typically have the following characteristics:

- *grounded in theory and evidence;*
- *consider system level influences on safety;*
- *include multi-agency and collaborative delivery;*
- *are piloted in advance of full roll out;*
- *are long-term initiatives with sustained funding (as opposed to one-off gestures);*
- *provide several touch-points to follow up the intervention;*
- *are evaluated for effect using highest quality methods (e.g. control groups);*
- *are delivered by qualified professionals; willing to engage with appropriate expertise and willing to adjust content and new information becomes available.*

Extract from RAC Foundation submission to TSC inquiry into Road Safety. p.4

The RAC Foundation has, amongst several reports on this subject, published two key reports by Internationally recognised experts on evidence based young driver interventions – Senserrick & Kinnear (2017)⁵⁵ and Simons-Morton (forthcoming)⁵⁶.

In their report Senserrick & Kinnear (2017)⁵⁵ state that *“Current approaches in Great Britain [therefore] place a strong focus on the young driver as the problem. Alternative conceptualisations of road safety in international settings have broadened this perspective in recent times, shifting the focus – or blame – for road crashes beyond the individual. This includes recognition of the role of a wider, shared community ‘traffic safety culture’ that interacts with an individual’s decision-making and behaviour”* (p. vi) and therefore *“applying a systems-based approach identifies multiple new and innovative pathways to improving young driver safety that go beyond ‘young-driver-centric’ education, training and licensing”* (p.vii). Evidence based suggestions for UK adoption included:

- Pre-test: Implementing licensing initiatives (such as GDL) which seeks to mitigate young drivers’ exposure to crash risk and hazard perception training;
- Post-test: limiting driving in high risk conditions (e.g. driving at night, with multiple peer passengers, under the influence of alcohol);
- Pre-and post-test: Reframing interventions so that no individual initiative is working in isolation and to use education to support risk managing activities (e.g. 12-month learner period, promoting over 100 hours of supervised practice driving pre-test, parent-teen agreements on night driving, passengers and alcohol consumption). Investigating further the promising role of resilience based education – which seeks to empower youths, enhance their strengths and competencies and enable them to develop strategies to avoid and manage risk both in driving, and in more general activities – is also recommended.

Similar themes emerge from Dr Simons-Morton’s (forthcoming) publication⁵⁶ for the RAC Foundation. Dr Simons-Morton, who is based at the National Institute of Child Health and Human Development in the US stresses that *“novices do not suddenly become safe drivers overnight”* making it vital that intervention programmes are *“improved by gaining a greater understanding of, and attention to, the mechanisms by which novices learn to driver safely”* p.iii. In his concluding remarks Simons-Morton states the *“process of learning varies within and between individuals over time, but it is presently not possible to identify higher- and lower-risk novice drivers with satisfactory precision. Thus, the greatest need is for population-based rather than individual-level prevention efforts. While a range of prevention programmes that have substantial potential are available, they have not generally been based on the known characteristics of risk, which has resulted in uncertain and unsatisfactory evidence as to their effectiveness”* p.16. Simons-Morton continues to recommend that the following action be taken to improving the effectiveness of young driver prevention programmes.

Table 2: Improving effectiveness of young driver prevention programmes

Safety programme	Possible modifications
GDL	Adopt, add or extend provisions Increase parental involvement
Driver education and training	Evaluate and improve formal driver education, and pre- and post-drive programmes Extend focus to higher-order skills and independent driving Increase parental involvement
Parent supervision and management	Increase parental involvement Link to technology
Technology feedback and consequences	Apply broadly Increase parental involvement

Source: Simons-Morton (forthcoming) (adapted from Simons-Morton et al. 2019) Table 5.1, p.17

In addition to these recommendations a further summary of the key known effective interventions for pre-and post-driving licensing stages, as gleaned from the academic literature, is provided below:

Table 3: Effective interventions for improving young novice driver safety at the pre-and-post driver licensing stages

Pre-licensing
<ul style="list-style-type: none"> • Minimum learning period – 12 months ^{42 44} • Over 100 hours supervised practice ⁵⁷ • Varied and many opportunities for practice with family ²⁹ • Professional lesson for correcting poor technique and correcting poor techniques ⁵⁸ • Hazard perception training – Poor skills are related to collision involvement and experienced drivers score more highly than inexperienced drivers ^{59 60}; with training found to improve skills, in simulated and real-world conditions ^{61 62}
Post-licensing
<ul style="list-style-type: none"> • Graduated driver licensing ^{39 40 41 42 43 44} • Zero-alcohol limit ²⁵ • Fatigue management ⁶³ • Vehicle crashworthiness ^{64 65 66} • Parental interventions (active approaches using concrete tools – such as parent-teen agreements and In Vehicle Data Recorder/telematic feedback)⁶⁷

Source: Authors own drawing on literature

In a recent literature of young drivers' crash risk⁶⁸ Cassarino & Murphy (2018) identify that alongside *“the incomplete maturation of cognitive skills crucial to safe driving (visual scanning, hazard anticipation, handling of in-vehicle distractions)...the higher susceptibility to social influences (especially peers and parents) emerged as the strongest determinant[s] of discrepancies in performance between young novice and experienced drivers”* p.54. This is a vitally important finding for improving the road safety of young and novice drivers, given that of all the intervention mechanisms with evidential backing, addressing the social influences that impact on young and novice drivers is the area least progressed in the UK.

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