



All new drivers are not the same (but it doesn't really matter)

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27th October 2011



Why am I here?

- Because Neale Kinnear played football on the 16th October
- Injuries sustained while being tackled:
 - Broken leg
 - Dislocated ankle
 - Broken ankle
- Feedback from doctors:
 - “Your injuries are more commonly seen in car accidents than in football games”





Overview of Presentation

- 1 Background
- 2 Age and inexperience
- 3 Mechanisms by which training and licensing might work
- 4 New drivers and the driving test
- 5 Graduated driver licensing
- 6 Summary and Conclusions

Reported road casualties

Young novice drivers



The facts

- Novice or 'new' drivers are amongst the most vulnerable of road users – this has been shown in many studies worldwide
- At the last count, over 3,600 car drivers aged 17-25 years were involved in a reported injury accident in Scotland in the previous year
- Almost 70% of these involve a male driver aged 17-25 years
- Accident numbers and rates in Scotland reducing, even for young males. Not so much for young females however.

Influences on young novice driver collision risk

What research tells us

Age

Lack of experience

Gender

Over-confidence in abilities

Lifestyle and social attitudes

Alcohol and Drugs

Physical & Mental Development

Poor Hazard Perception

Expression

Thrill seeking

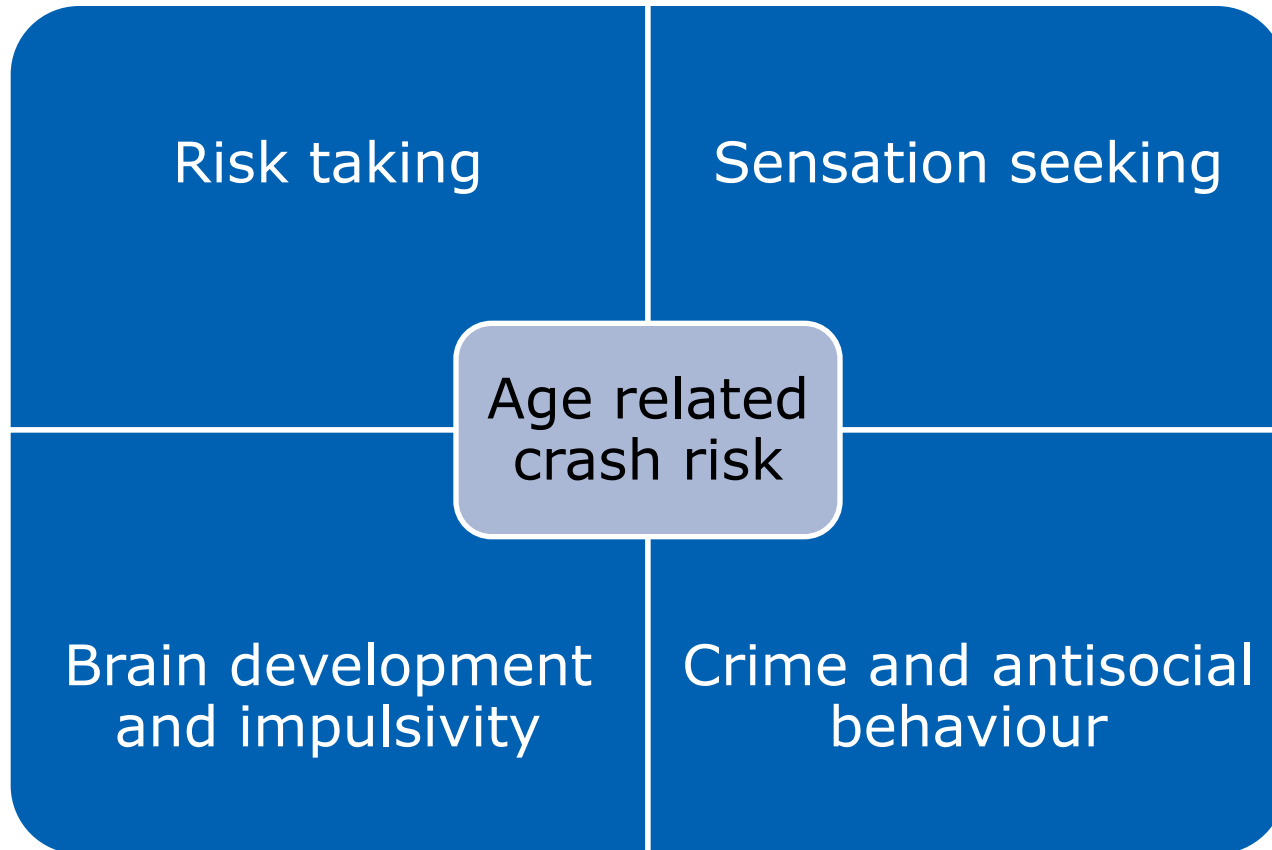
Peer influences

Parents

Overview of Presentation

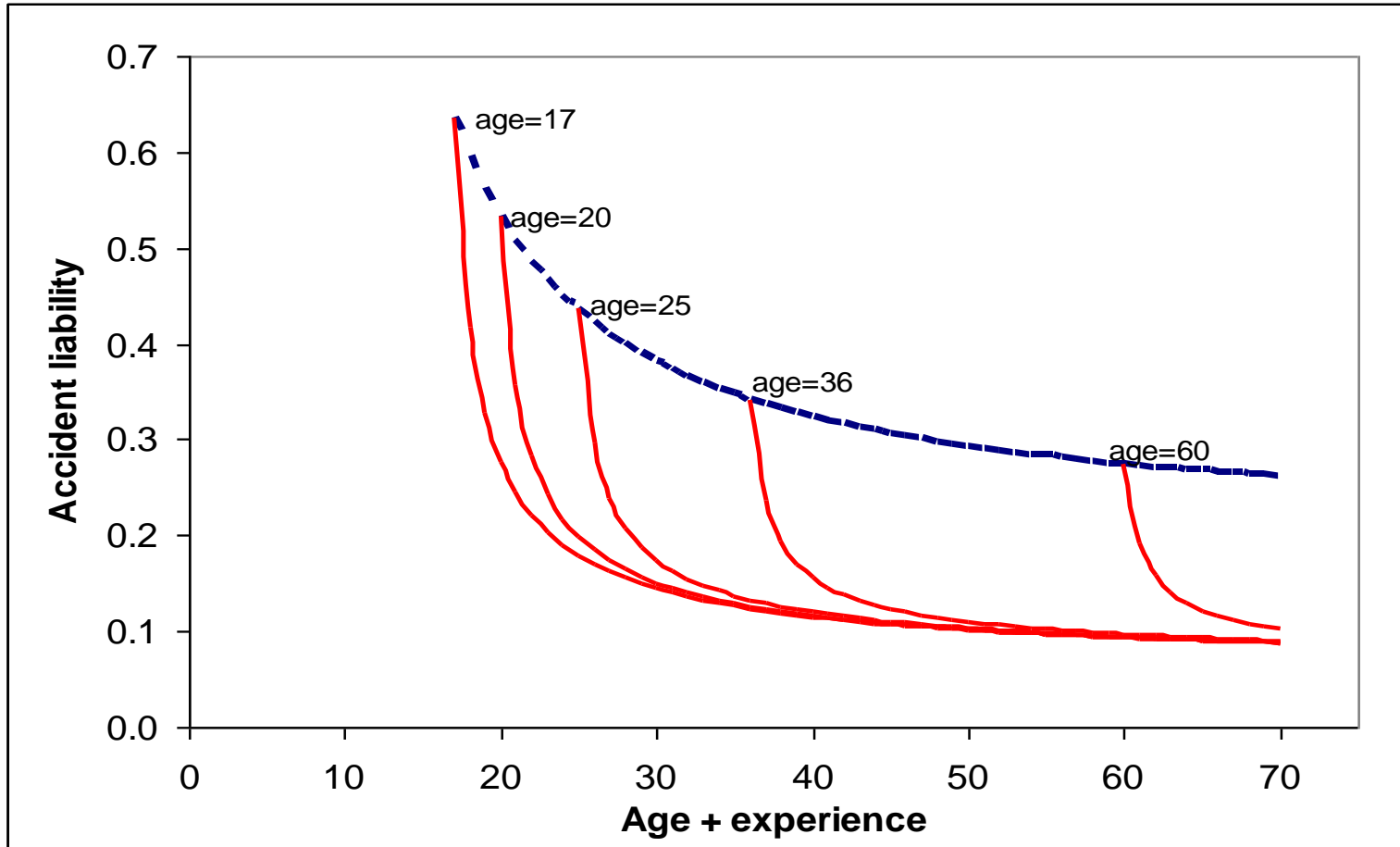
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Factors that influence age related crash risk



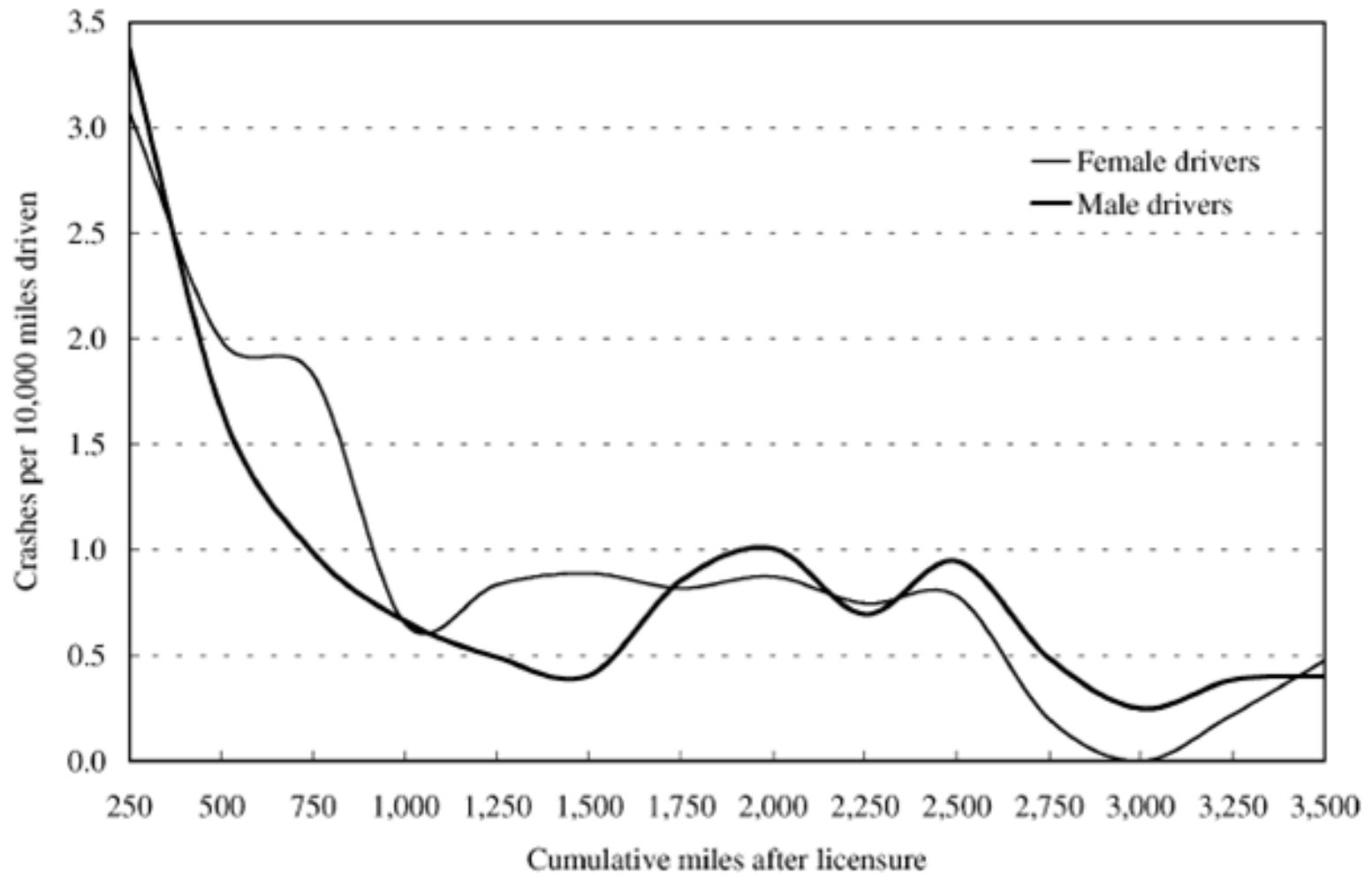
See McKenna, F.P. (2010). The Public health benefits of road safety education for teenagers. Available at <http://www.road-safety.org.uk/research/completed-research/think-piece-by-frank-mckenna/>

Novice driver crash risk: age v experience



Maycock et al (1991)

The first 1,000 miles



McCartt et al (2003)



Novice drivers...

- ...have a very high collision risk relative to other drivers
- BUT as soon as they are given the chance to drive post-licence, they begin to learn very quickly to NOT have crashes
- How can we help them?

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Mechanisms by which training might be expected to work

- Historically
 - Learning to controlling the car
- More recently
 - Hazard anticipation
 - Promoting safer 'attitudes'
 - Self-evaluation
- Broadly - equipping novices with skills and knowledge to drive safely, and encouraging them to do so

Evidence?

“The only direct benefits imparted by broad driver education and training would appear to be the basic vehicle control skills and knowledge of road rules necessary for entering the driving population. According to the evidence it has no measurable direct effect on collision risk, and its continued use should therefore be set against much lower expectations in terms of what it can contribute directly to the safety of new drivers.”

Helman, Grayson and Parkes (2010, p8)*

(Some newer approaches are promising, but evidence is not there yet...)

*Based on synthesis of numerous meta-analyses and systematic review papers (Clinton and Lonerio, 2006; Mayhew et al., 2002; Roberts & Kwan, 2001; Christie, 2001; Vernick et al., 1999; Mayhew et al., 1998; Brown et al., 1987)

Mechanisms by which licensing might be expected to work

- The driving test
 - Blocking (or at least delaying) access to those drivers who do not possess the competencies required for unaccompanied driving (assuming the test measures the right things...)
- More comprehensive (i.e. graduated) systems also (among other things):
 - Delay exposure to high risk situations
 - Allow skill build-up through practice in low-risk situations before unrestricted unaccompanied driving begins

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New drivers and the driving test

- Sexton and Grayson (2010)

- Showed that first-time passers of GB practical driving test have a lower self-reported accident liability in their first year of driving than those who require more than one attempt before passing (after allowing for age, sex, and mileage).
- They also have higher hazard perception test scores.

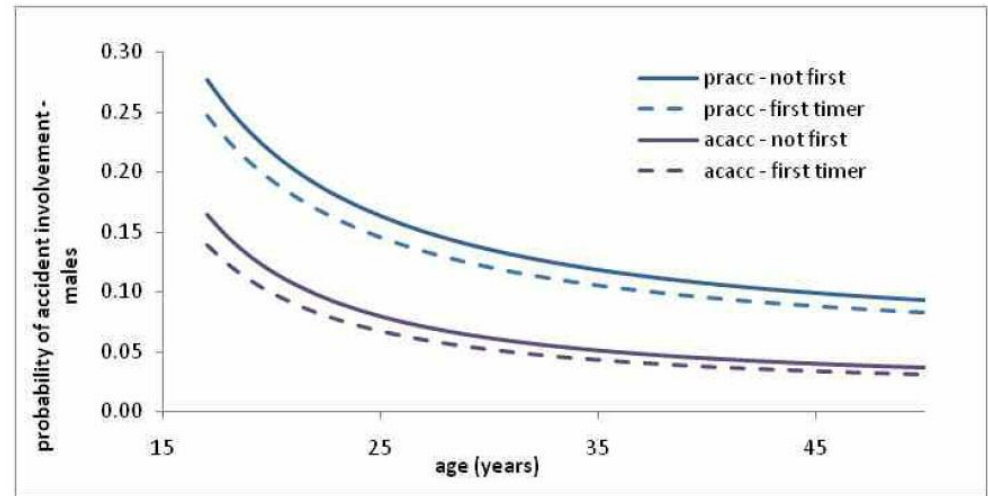


Figure 6.2: Estimated first-year accident involvement for people driving 10,000 miles pa and with six months of driving experience (male drivers)

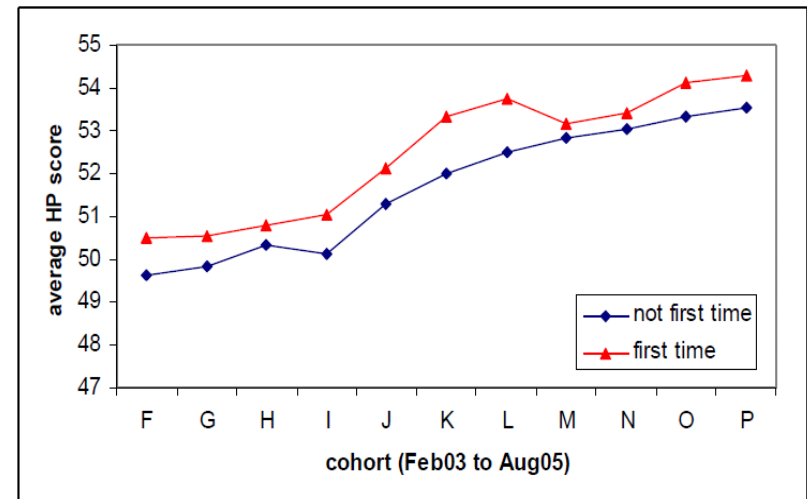


Figure 4.3: Average hazard perception test score by cohort and practical test status

New drivers and the driving test

- Boufus et al (2011)
 - 'DRIVE' cohort study in NSW, Australia
 - Those who had four or more failures at the practical driving test were more likely to crash (state-reported crashes) in first two years driving than those who passed first time (overall risk ratio 1.79 95% CI: 1.20 – 2.65)
 - Those who failed the video hazard perception test at least twice had a higher risk of crashing in first year than first-time passers (overall risk ratio 1.83 95% CI: 1.27 – 2.63)

New drivers and the driving test

- In these two cases, the driving test would appear to be doing something positive for public health:
- It delays access to driving for those people who are at more risk of crashing
- They get through eventually though...
- ...but at least they are older when they begin driving!

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Pre-licence

Restricted

Unrestricted

Low-risk situations

Minimum
learning
period

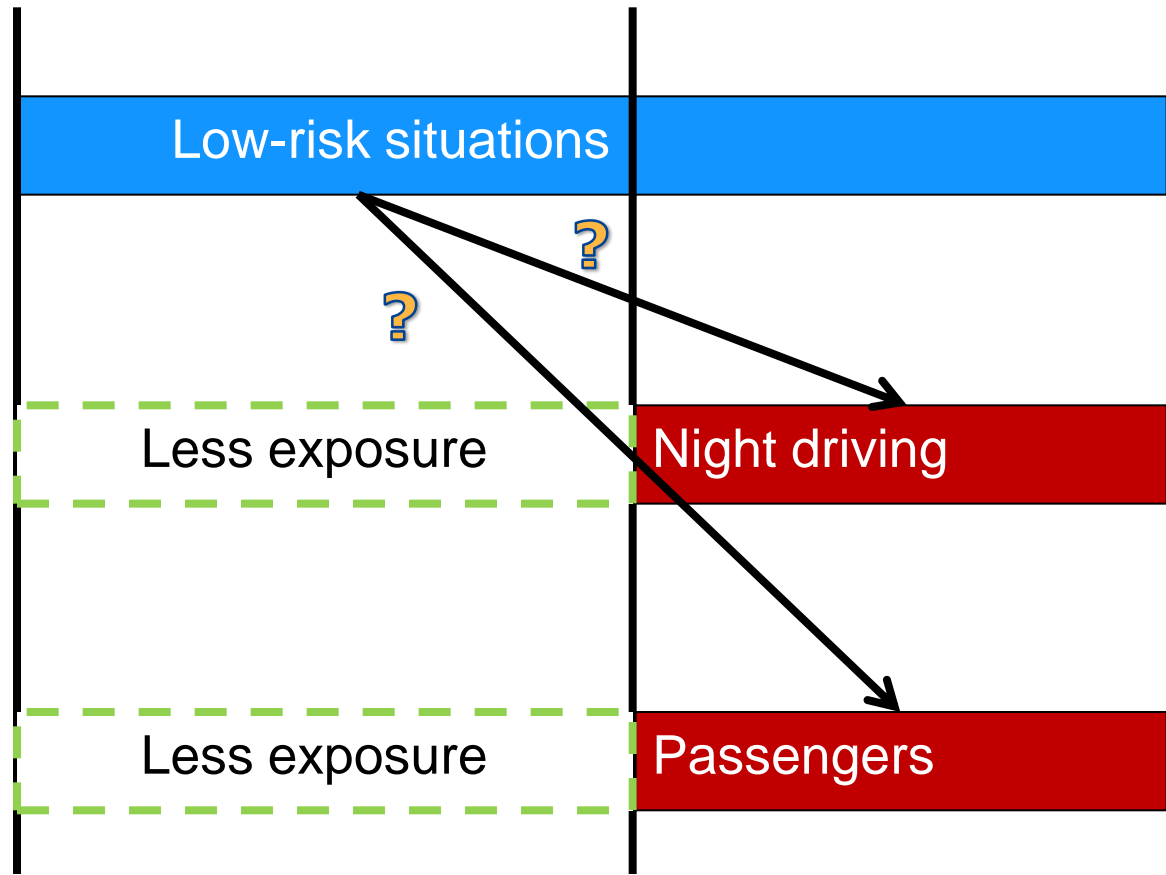
Less exposure

Night driving

Less exposure

Passengers

Time



Graduated Driver Licensing

Is it worth considering GDL?

US/Canadian State	Crash reduction
British Columbia	16%
California	23%
Georgia	30%
Florida	9%
Maryland	21%
Michigan	38%
North Carolina	39%
Nova Scotia	29%
Ohio	23%
Pennsylvania	28%
Average	25%

Source: Ferguson International LLC



Why compromise?

GDL characterisation	Minimum requirement	Fatality reduction for young drivers (15-17 years)
Good	Both: <ul style="list-style-type: none"> ▪ Minimum learner's period of at least 6 months ▪ Night-driving restriction from 10pm or passenger limit of only one teen lasting until age 17 	19.4% (all fatalities)
Fair	Either: <ul style="list-style-type: none"> ▪ A night-driving restriction or passenger limit of only one teen; or, ▪ Minimum learner's period of any length plus any night time or passenger restriction lasting until age 16 and a half 	12.6% (night time fatalities)
Marginal	Any: <ul style="list-style-type: none"> ▪ A minimum learner's period of any length plus either a night-driving or passenger restriction ▪ Mandatory learners period 6 months ▪ Any night driving or passenger restriction 	0%

Morrissey et al. (2006). The strength of graduated drivers license programs and fatalities among teen drivers and passengers. *Accident Analysis and Prevention*, 38, 135-141.



More recent work on GDL

- Masten and Foss (2010) show that effects of North Carolina GDL carry over into the post-restriction period, but again only for 16 year old drivers

Graduated driver licensing...

...WORKS



Summary

- Inexperience and age are the key risk factors for crashing – early months of solo driving are highest risk
- New drivers not ALL unsafe – but as a group they generally are, and even the ‘good’ ones they still show the familiar learning effect of experience

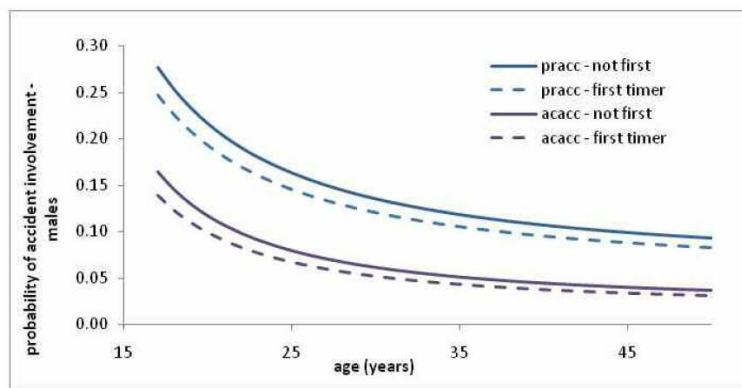


Figure 6.2: Estimated first-year accident involvement for people driving 10,000 miles pa and with six months of driving experience (male drivers)

- Traditional approaches to training and education have not had any detectable direct effect on collision risk overall

Conclusions

- Not all new drivers are the same and it does seem sensible to seek a better understanding of driver types and of those approaches that will be most effective for each

BUT

- Based on the evidence, approaches (such as GDL) that seek to properly restrict exposure to risk should form the basis of any licensing system, **because they work**. Other 'innovative' approaches should be put to work within such a system, not instead of it.

Thank you

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Useful References

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