

INQUIRY INTO YOUNG DRIVER SAFETY AND EDUCATION PROGRAMS

Organisation: Youthsafe
Name: Ms Anne Deans
Position: Executive Officer
Date Received: 29/11/2007



youthsafe

**PO Box 3023
Putney NSW 2112**

**Ph/ (02) 9809 4615
Fx/ (02) 9809 6521**

www.youthsafe.org

28 November 2007

Mr Geoff Corrigan MP
Chair Staysafe Committee
Parliament of NSW
Macquarie St
Sydney NSW 2000

Dear Mr Corrigan,

Re: Inquiry into Young Driver Safety and Education Programs

Thank you for the opportunity to make a submission to the Parliamentary Joint Standing Committee on Road Safety (Staysafe) with respect to an inquiry into 'Young Driver Safety and Education Programs'.

Please find attached Youthsafe's submission which has been prepared by the Executive Officer, Anne Deans, with the approval of the Board of Directors.

Key points covered in Youthsafe's submission include the following:

- Injury is the major cause of death and disability in young people, with road trauma accounting for the greater proportion of injuries in this age group.
- The incidence of lifelong disability due to road trauma, such as that associated with spinal cord injury, brain injury and major orthopaedic trauma, is even greater than the incidence of death.
- Behaviour of young drivers impacts not only on their safety but also that of their passengers and other road users.
- There are many risk factors associated with being young that, in combination with risks on the roads, make young people a very vulnerable road user group.

- More recent research has highlighted the fact that maturation of the adolescent brain is not complete until the mid to late 20s, especially areas of the brain associated with reasoning, self control and making better judgements.
- Approaches to improving the safety of young people on the roads should be:
 - Evidence based.
 - Multi-strategic.
 - Positive and supportive, recognising the need for young people to learn independence and responsibility.
 - Engage a wider community as well as young people, including parents/family, local communities in which young people are involved and policy decision makers.
 - Integrate risk management into activities which are normal for young people and important to their development.
- Road safety relating to young drivers is a very complex and delicately balanced area where a focus on 'fixing' a specific issue can result in a domino effect and precipitate other safety concerns for young people.
- Youthsafe has a range of initiatives, including education, focused on supporting young people as safer road users and which are developed in consultation with target audiences and stakeholders, are pilot tested and refined before implementation and are subject of evaluation.
- Youthsafe's support and input is also sought by others such as Road Safety Officers in local Councils, the Lismore RRISK program and RYDA U-Turn-The Wheel program.

Also attached is information about Youthsafe and two articles about the maturing adolescent brain, which have appeared in Youthsafe newsletters 'yRED'.

The Staysafe Committee may be particularly interested in Youthsafe's 'What's the plan?' education resource which is considered state of the art. We would be very happy to demonstrate this resource to the Committee.

I trust Youthsafe's submission will be helpful to the Staysafe Committee's inquiry and Youthsafe would be pleased to be available to provide further evidence at public hearings in 2008 if this would be of value. Please let me know if you have any queries about our submission or would like any further information.

Yours sincerely

Anne Deans
Executive Officer

Youthsafe Submission to Staysafe Committee

Inquiry into Young Driver Safety and Education Programs

November 2007

Introduction:

Youthsafe is particularly interested in the Staysafe Committee inquiry into *'Young Driver Safety and Education Programs'* given our role as peak body in NSW for injury prevention in young people and our involvement in developing, implementing and evaluating education programs and other initiatives that specifically target the safety of young people (15 to 25 years of age), including safety on the roads.

Injury is the main cause of death and disability in young people and road trauma is responsible for the major proportion of injury in young people, especially serious injury. Serious injury resulting in lifelong disability occurs with even greater frequency than death. It should also be noted that crashes involving young drivers impact not only on their death and injury rates but also those of their passengers and other road users.

Young people have the right to live full lives which are free of serious injury. It is also normal for young people to be active and mobile and it is important for them to have the opportunity to develop new levels of independence and responsibility and learn to manage risk. Youthsafe respects the rights of young people and considers that during their developmental years they should be supported in identifying and managing risk to be able to more safely participate in typical activities for young people.

Youthsafe has well researched programs and resources that target young road users and which recognise the impact of road trauma on young people, respect the rights of young people and complement other road safety programs.

Youthsafe's submission relates to the following points under consideration by the Staysafe Committee:

- The current incidence of road crashes involving young drivers in NSW.
- Underlying risks and major factors contributing to such crashes.
- Differences in driving behaviours, crash outcomes and relevant trends in urban and rural areas of NSW.
- The efficacy of young driver education program and the potential for development and expansion of these programs, subject to proper evaluation.
- Other initiatives to improve young driver safety.
- Other relevant matters.

The current incidence of road crashes involving young drivers in NSW:

The overrepresentation of young drivers in road crashes and fatalities in NSW, particularly males under 26 years of age, was noted in the background material on the inquiry being undertaken by the Staysafe Committee.

NSW statistics on young drivers aged 17 to 21 years for 2006 indicated the following:

- The ***casualty rate*** was about two and a half times that of all drivers with 545 casualties per 100,000 population for young drivers compared to 212 casualties per 100,000 for all drivers.
- Young males are overrepresented in the young driver ***injury*** statistics and are at greater risk of more serious injury.
- The ***fatality rate*** was more than three times that of all drivers with 11.1 fatalities per 100,000 population for young drivers compared to 3.6 per 100,000 for all drivers.
- Young males are very highly overrepresented in the ***fatality*** statistics with at least three times as many male drivers as female drivers killed each year.

(Source: RTA NSW and ATSB)

The fatality rate for 2006 reversed the overall downward trend in young driver fatalities, however, the indications are that this very high rate will not be evident again in 2007. Even with a likely lower rate of young driver fatalities in 2007 compared to 2006, there remains an overrepresentation in fatality data for young drivers compared with the population as a whole.

The statistics also clearly demonstrate that there is an overrepresentation of young driver casualties compared to the community as a whole and that the incidence of casualties is very significantly higher than deaths.

Youthsafe would like to emphasise the fact that lifelong disability, as well as death, is a consequence of road trauma involving young people. Serious injury resulting in lifelong disability includes spinal cord injury, brain injury and major orthopaedic injury. As the lifespan of people sustaining these injuries is generally relatively normal, it means that young people potentially have something in the order of 50 years plus of living with a disability, often involving high support needs and all the associated physical, emotional, social and financial consequences.

Underlying risks and major factors contributing to such crashes:

The data indicates that young driver crashes are more likely to be associated with:

- Excessive speeding, particularly up to 19 years of age.
- Driving at night after 11pm, particularly up to 21 years of age.
- The number of passengers, particularly up to 21 years of age.

The level of driver fatigue associated with young driver crashes is also slightly higher than for drivers as a whole, and the incidence of illegal drink driving levels amongst young driver casualties has not been found to be significantly higher than adult drivers.

While the data indicates specific behaviours contributing to road crashes involving young people, there are significant underlying risk factors associated with being young, which impacts on their driving and propensity for crashes.

These risk factors need to be understood for safety measures to be effective. In particular recent neuroscience research into adolescent brain development warrants attention in seeking to prevent road trauma in young people.

The research has identified that the adolescent brain is still developing and not fully mature until young people reach their mid twenties and possibly late twenties, especially for males. The prefrontal cortex is a late maturing part of the brain responsible for reasoning, self control and making better judgements. Youthsafe considers that these factors related to cognitive development are not well understood or acknowledged by parents, policy makers and the general community. Youthsafe considers that initiatives for young people should be based on a sound understanding of normal human development and particularly the implications for young people of cognitive maturation processes. In light of this, Youthsafe has been active in disseminating this important information through presentations to key stakeholders and by inclusion of articles in our last two newsletters (see attached articles). While the second article primarily addresses the implications of cognitive maturation for young people and workplace safety the information is equally applicable to young drivers.

There are also a range of other factors which contribute to the risks for young drivers as follows:

- Attitudes and patterns of behaviour related to safety established through parental/family and local community influences from an early age.
- New levels of independence and responsibility that come with driving.

- Inexperience with driving – this is more than just a matter of vehicle handling skills, it also relates to inexperience in a multi-task activity and learning to identify hazards and make decisions.
- Inexperience with other activities that may impact on driving eg use of alcohol or drugs.
- Societal expectations that young people take risks and are not responsible.
- Belief structures about inability to influence safety, particularly amongst lower socio-economic groups.
- Youth motivation for driving (often considered a form of entertainment) and significance of driving (sense of identity can be linked to a vehicle in some youth sub-cultures).
- Experimentation and desire for thrill seeking.
- Exposure on the roads – this includes the overall amount of time spent driving and also exposure to hazardous conditions such as night time driving, rain etc.
- Fatigue – often associated with the busy lifestyles of young people which can include a combination of study, work and socialising.
- The very strong significance of peers and their influence during adolescent years.

Other potential societal and cultural influential factors may include the following:

- A greater propensity for young people to use older vehicles with fewer safety features.
- A technology savvy youth prone to the distractions of mobile phones etc while driving.
- A motor vehicle centric society where this is the preferred mode of transport.
- A highly mobile youth population with limited alternative transport options.
- Busier parental lifestyles where there may be a reduced willingness or ability to assist in transporting young people.

Young people as a whole are a vulnerable road user group, but for young males who are more likely than females to be involved in road trauma, there could be additional influential factors such as the following:

- Increased exposure of young males as drivers.
- Parents tending to be less protective of males than females.
- Male role modelling by heroes, for instance in the movies or sport, that promote a macho risk taker model.
- Effects of the surges of male hormones in adolescence.

Differences in driving behaviours, crash outcomes and relevant trends in urban and rural areas of NSW:

Higher velocity crashes increase the risk of serious injury so in rural areas where young people are involved in driving at higher speeds over greater distances than in urban areas, there is a relatively higher incidence of serious injury per head of population.

Also a contributory factor is the paucity of alternative transport options for young people. This is also an issue in many urban areas but generally more significant in rural areas. Practical alternative transport options relate to the type of activities young people normally engage in and the times that they are engaged in these activities, as well as geographic location, for instance in relation to public transport routes.

The efficacy of young driver education program and the potential for development and expansion of these programs, subject to proper evaluation:

A range of education programs targeting road safety in young people are available through various bodies in NSW, including Youthsafe.

Youthsafe is aware of the comprehensive range of RTA programs and resources and MAA initiatives and we have provided input to some of the community based programs available, such as those co-ordinated

by Road Safety Officers in local Council and the Lismore RRISK program and RYDA U-Turn-The Wheel program.

Youthsafe's main road safety education initiative is our 'Presenter Program'. This involves Youthsafe Presenters, most of whom have had personal experience of serious injury, delivering sessions in high schools and community groups in Sydney, Central Coast, Blue Mountains and Illawarra. Currently there are three main sessions available which support the PDHPE curriculum in NSW high schools and complement RTA road safety education programs and resources.

Youthsafe sessions include the following:

1. 'Are we there yet?' is specifically designed for young people who are new drivers and their passengers, focusing on the complexity of the physical and mental tasks required for low risk driving.
2. 'The 'EVERYDAY' session is about risk and consequences, including distinguishing between everyday risks and dangerous risk taking and how to manage dangerous risks. This session primarily targets 12 to 15 year olds seeking to achieve some fundamental understanding about risk and risk management at the time when risk taking behaviour starts to develop in adolescents and before they start driving.
3. 'What's the plan?' is designed for 15 to 18 year olds about safer celebrating with a key focus on travelling more safely to and from social activities.

'What's the plan' has also been developed into a resource kit which can be used by educators as well as Youthsafe Presenters. The kit provides for flexible delivery, has application to various youth sub cultures and is suitable for use with groups of young people with low levels of literacy. Pilot testing included working with 'Links to Learning' programs. It has also been popular with TAFE institutes. The kit includes:

- A DVD with vox pop style interviews with young people discussing celebrations, what can go wrong and what can be done to make celebrations safer, particularly how they get home safely.

- A CD rom with session plans and support materials, including work sheets.

Access to 'What's the plan?' materials is also facilitated by a website www.whatstheplan.org.au linked to the Youthsafe website www.youthsafe.org.

Moves to develop more flexible delivery options for sessions and support materials, such as the 'What's the plan?' kit, assist equity of access for rural areas where currently costs associated with regular Presenter visits to rural areas are prohibitive for Youthsafe.

Youthsafe education sessions are based on best practice principles, including class size groups rather than large groups, a high level of interaction, use of scenarios and a 'life skills' education approach. Professional educators are involved in the development of all Youthsafe education sessions and they are pilot tested with target groups before finalisation. Evaluations include sample population participant and teacher evaluations as well as Presenter self evaluations. Youthsafe Presenters all undergo 'Working with children' and 'Criminal record' checks, are trained to deliver the sessions and are mentored and assessed before they deliver sessions independently.

There is ongoing monitoring and review of needs with the Presenter Program growing and changing where appropriate.

Other initiatives to improve young driver safety:

In addition to the Presenter Program, Youthsafe has developed resources that specifically target young drivers, their passengers and their parents including the following:

- Post card resources for young people – one targeting young drivers, one targeting young passengers and a new sticker postcard developed this year specifically aimed at reducing the number of peer passengers carried by young drivers. These are largely

distributed through community based professionals and school programs.

- A pop up postcard resource for Aboriginal youth specifically aimed at reducing the number of peer passengers carried by young drivers. This was developed this year in response to identified needs, involved consultation with Aboriginal youth during development, involved an Aboriginal artist in the postcard design and is currently being pilot tested through the TAFE Access program in classes with Aboriginal students.
- A fact sheet for parents of young drivers 'Helping teenagers become safer drivers'. This was updated mid year to ensure new young driver legislation commencing 1 July 2007 was correctly referenced. The fact sheet is distributed through NSW secondary schools, RTA offices and community based professionals eg Road Safety Officers. This fact sheet is also available electronically in Arabic and Chinese with culturally appropriate adaptations and these fact sheets also include amendments in respect of 1 July 2007 legislative change.

Youthsafe often works through community based professionals who are involved with young people or education facilities and the services offered include the following:

- Professional advisory and support services, including professional guides, newsletters, email bulletins, comprehensive website(s), telephone advice, resource library access, multi-professional forums, specific purpose workshops, collaboration on pilot projects.
- Information resources, such as fact sheets and postcards and professional guides.
- Advocacy for policies and practices that support injury prevention in young people.
- Action research and community projects.

Youthsafe is regularly finding and reviewing the latest available evidence relevant to injury prevention in young people, putting this

into a practical context and using it to inform our work. Program and resource development also includes consultation with relevant stakeholders and target audiences and pilot testing informs refinements.

Young people are often travelling by road to work, sport and recreational activities so Youthsafe also integrates elements of road safety into programs addressing injury prevention in these settings. A particular priority for Youthsafe has been safer celebrating for young people where driving home, especially from regular informal social activities, poses significant road related risks. Youthsafe has identified five priority areas in safe celebrating:

1. Supporting parents and young people to make safer choices, including awareness of young driver and young passenger issues.
2. Reducing alcohol and sport linkages.
3. Supporting safe youth entertainment.
4. Safe, accessible youth space and facilities.
5. Safe and accessible transport.

Safe and accessible transport is currently being investigated more thoroughly by Youthsafe.

In addition to the 'What's the plan?' materials, Youthsafe programs and resources that address safe celebrating and integrate road safety for young drivers, their passengers and their parents include the following:

- A fact sheet for parents of young people 'Helping teenagers celebrate safely'. This was released during 2006 and is distributed through NSW high schools, RTA offices and community based professionals eg Health Promotion Officers.
- Web based examples of parent/teenager agreements about going out and using the family car.

Other relevant matters:

The number of research publications readily available on young driver safety has very substantially increased over the last six years. Yet it is still difficult to find proven strategies and often the research is focused on one, or a limited number of strategies and in different contexts (eg overseas communities) making it difficult to ‘compare apples with apples’.

In the past, on occasion, a single measure, such as seatbelt legislation, has made a substantial difference. However currently there do not appear to be similar ‘silver bullets’ on the horizon. Also this is a complex and delicately balanced area where changing one element can produce a flow on effect that creates other problems eg designated drivers have a place in reducing drink driving problems but exacerbate the problem of young drivers with multiple peer passengers. Particularly in an area like this where young people are the casualties, there are very highly emotional responses which can precipitate knee jerk reactions that are unable to properly take into account potential associated negative impacts.

In addition young people are not an homogenous group so there is little likelihood of a single strategy making an impact on all young drivers. For instance, fear campaigns have been shown to increase apprehension and compromise the ability to cope in young drivers who are already nervous and advanced off road driving courses can create overconfidence in an already confident young driver.

NSW already employs many of the strategies considered by Australian and international research to reduce the vulnerability of young drivers to crash risk. Despite this, road trauma continues to predominate in young people as a cause of death or serious injury and presents a significant challenge to NSW to find other effective, complementary counter- measures.

Against this background it is still worth noting that there are some factors that are shown to have a protective benefit for young drivers including the following:

- Parental supervision and guidance before and after obtaining a 'P' licence.
- Parental limits on access to vehicles by young drivers
- Parent /youth agreements regarding vehicle use, such as limiting peer passenger numbers, limiting when young drivers are allowed to drive independently eg at night or in bad weather conditions.
- Community awareness of the increased crash risks for young drivers and a willingness to support young drivers in a positive way.
- Policy decision making, for instance about improving access to adequate public transport facilities in places and at times relevant to the normal activities of young people and increasing awareness of the benefits of using public transport.

To reduce the involvement of young drivers in road crashes Youthsafe supports the following approaches:

- A considered and evidence based approach – that involves careful review of research findings that demonstrate effectiveness of proposed strategies and assessment of the practical application of those strategies in the NSW context, including assessment of the potential for change to precipitate new problems. This may also require new research initiatives where evidence is lacking.
- A multi-strategic approach – this is in recognition of the number and complexity of risk factors and influences, and the range of youth sub-cultures, and incorporates a combination of legislation; enforcement; environmental protection; public campaigns generating awareness of the increased crash risks for young drivers and the protective factors that will help to reduce them; driver, parent and passenger education programs and information.
- A whole of community approach – this involves engagement of young people, their parents/family, the wider community and policy decision makers in co-ordinated, complementary activities with a common purpose and should be inclusive of the needs and values

of the entire community and relevant to the views and attitudes of young people.

- A positive supportive approach – that is one that recognises the value of young people and uses youth-friendly strategies and policies based on national and international evidence.
- An integrated risk management approach – this involves addressing dangerous risk taking in relation to normal activities in which young people engage, which also invariably involve travel to and from these activities, for instance safe celebrating.

Youthsafe is a NSW based not for profit organisation and lead agency in prevention of serious injury in young people (15 to 25 years) on the road, at work and in sport and recreational settings.

Contact details:

Anne Deans, Executive Officer

Address: PO Box 3023 Putney NSW 2112

Phone: (02) 98094615

Fax: (02) 98096521

Email: anned@youthsafe.org

Website: www.youthsafe.org

Attachments

Youthsafe Strategic Framework 2007 to 2010
Articles published in Youthsafe newsletter 'yRED'

- Adolescent Development and Risk Taking
- Brain development and young worker safety



Youthsafe – preventing serious injury in young people. Strategic Framework 2007 to 2010

What ...

Youthsafe is working to:

- *Increase recognition of the importance of injury prevention.*
- *Advocate for priority resourcing.*
- *Promote evidence about effective measures and best practice.*

How ...

Through our key focus areas of:

- *Better awareness and understanding*
 - *in the community (including young people & parents).*
- *Informed decision making*
 - *in government.*
- *Enhanced capacity*
 - *in community based*

Where ...

We seek to achieve results in places where young people are at risk of injury including:

- *On the roads.*
- *In workplaces.*
- *In sport and recreation settings.*

Who ...

Our main service consumers are:

- *Community based professionals*

Our partners and other stakeholders include:

- *Researchers.*
- *Educators.*
- *Government.*
- *Other NGOs.*

Values ...

Article published in Youthsafe newsletter 'yRED' –
September 2006

Adolescent Development and Risk Taking

**Clinical Associate Professor David Bennett AO FRACP FSAM,
Senior Staff Specialist in Adolescent Medicine and Head NSW Centre for
the Advancement of Adolescent Health, The Children's Hospital at
Westmead**

Life is a risky business. We all take chances, and there are risks involved in practically everything we do. Taking risks is certainly a natural part of growing up. Teenagers have a special thirst for new experiences. They experiment with new activities, test their limits, explore new skills, and enjoy the often exhilarating sense of freedom involved.

Our understanding of adolescent risk taking has been greatly enhanced by recent findings from neuroscience – research using *magnetic resonance imaging* (MRI) on the brains of children at two year intervals. While some areas of the human brain are mature by the end of childhood, the *prefrontal cortex* – responsible for such things as impulse control and strategic planning (anticipating the likely consequences of one's actions) – continue maturing through the teenage years.

In other words, the adolescent brain is still developing and the highest-level areas may not be completely mature until kids hit their twenties. This also means that teenage brains may be constructed in a way that makes their owners more open to ideas, more amenable to change (a time of heightened opportunity), but also makes young people *more likely to experiment and take risks* (a time of heightened risk). An immature brain, together with the hormones that stir them up and drive them to be thrill-seekers (especially for boys), is a potentially dangerous mix.

What are the implications of this research for parents?

The prefrontal cortex has been called ‘the area of sober second thought’ because, as this part of the brain matures, teenagers can reason better, develop more self control and make better judgements. This is a helpful insight for those parents who may be struggling to understand some of their early adolescent’s erratic and otherwise ‘infuriatingly normal behaviour’. Since adolescence tends to be a time of increased freedoms and decreased parental monitoring – what most teenagers seem to want – these research findings also suggest we may sometimes be giving young people more freedoms than they can handle.

Research into parenting styles over the past quarter century or so shows that the most effective approach, so-called ‘authoritative parenting’, has three main characteristics:

- Parenting that is warm, involved and responsive
- Parenting that is firm and strict (with developmentally appropriate expectations)
- Parenting that fosters and encourages psychological autonomy.

Adolescents from authoritative (warm and firm) homes achieve more in school; have better self-reliance & self-esteem; report less depression and anxiety; show more positive social behaviour, self-control, cheerfulness & confidence; and (most importantly) are *less likely to engage in anti-social and risk-taking behaviour*.

These outcomes confirm that teenagers are safer when their parents take a close and caring interest in what they’re getting up to and set appropriate ground-rules in advance. In the light of the MRI brain research, better monitoring, negotiated boundaries and predictable consequences are needed to better protect young people!

What about the implications for those of us working in youth injury prevention?

The MRI brain researchers caution us not to ‘jump to conclusions’ in regard to drawing too close a link between structure and function; they say there is more work to be done in terms of understanding human behaviour. But there are potential implications for safety related to what we now know about adolescent brain development. For example:

- Should we consider raising the driving age to 18 years (as in some areas of the United States) to allow time for young drivers to acquire better impulse control?
- Should we establish passenger limits for teenagers with P1 licences to lessen distractions and enable better concentration while driving?
- Should we (an even more draconian idea) create curfews for adolescent drivers, because of the special risks of late night/early morning accidents, especially after parties?

There are no simple answers to these questions, but if our goal is the avoidance of unintended injury and premature death in young people, then neuroscience may be pointing the way to new ways of thinking about protective factors in this area.

Article published in Youthsafe newsletter 'yRED' – October 2007

Brain development and young worker safety

*Associate Professor A. Ian Glendon,
School of Psychology, Griffith University, Gold Coast Campus.*

What do we know about adolescent brain development?

More is being discovered about that uniquely human developmental stage of adolescence. Research reveals that adolescent brains undergo radical changes, some evidence suggesting that the brain may not be fully developed until the late 20s. Key features of adolescent brain development include:

- Changing balance between parts of the brain responsible for emotions and the executive function (planning, impulse control and reasoning).
- The part of the brain responsible for coordinating movement is still developing.
- Melatonin production, important in regulating our sleep-wake cycle, is different from that in children and adults.
- Nerves linking the brain's right and left hemispheres do not stabilise until early adulthood.
- Nerve fibres in the most advanced part of the brain are 'pruned' and the balance between white and grey matter changes during adolescence as higher executive areas 'settle in'.
- Brain areas affecting our ability to see and visualise things mature earlier than do the executive functions required to control them.
- Areas of the brain responsible for creating mental imagery are still developing.
- Parts of the brain responsible for regulating emotions develop later in males, and compared with females, males have less brain tissue available to regulate their emotions.

How does this knowledge help to explain why young people may be over-represented in workplace injury statistics?

Because the executive function develops later than the emotional centres, adolescents' behaviours are more likely to be driven by immediate search for sensations, rewards and novelty, some of which could be associated with risk-taking or recklessness. Differential development of various brain regions could mean that a young worker's ability to use information to make good (e.g. safe) decisions is compromised. Young males are more prone to make aggressive responses to a range of situations. Because integrating emotions and decision making occurs over an extended period, young workers could be vulnerable to an underdeveloped ability to handle stress.

Development of movement functions means that while young workers may appear to learn many skills rapidly, they remain prone to errors arising from coordination lapses. Young workers may display a tendency to 'eveningness' so that tasks undertaken early in the day could be more inherently error-prone. Young workers who have 'mixed handedness' could be particularly liable to adverse effects from hazards involving complex tasks requiring both hands and more than one sense modality.

Young workers may experience frustration and be error-prone in tasks involving decision making, with the potential for disorganised thought patterns or behaviours. Hazards may be perceived as in adulthood, but risk perception - involving an ability to understand the full extent of a hazard, could lag behind. Young workers could also take longer to process certain types of information about inherently dangerous situations and to visualise harmful outcomes.

What are some promising strategies to help protect young people in workplaces?

Because of large individual differences, generic strategies need adjustment to suit individuals and circumstances. As young workers gain experience and maturity they can gradually be given greater responsibility and autonomy. Appropriate psychometric tests could be used to monitor young workers' developing emotions and cognitive abilities.

Adolescents should be provided with opportunities to exercise their reward, novelty and sensation seeking motivated behaviours in places

where the risks that they take can be adequately supervised. They should be given relevant performance feedback to help them learn about potential adverse consequences of certain risk-taking behaviours. Supervisors should ensure that young workers work on tasks that are 'forgiving' of postural lapses, so that any that occur do not result in injury. In particular ensure that work undertaken early in the day is not overly demanding.

Young workers should have adequate opportunity to practise certain tasks, particularly those requiring complex information processing. Case studies and simulations are among tools that could be used to good effect. Risk assessments on complex tasks performed by young workers should incorporate a 'young worker' factor to ensure adherence to strict guidelines on tasks that young workers can safely perform. Adequate support and guidance should be available for young workers undertaking tasks involving complex decision making. Appropriate risk perception training is required to enhance young workers' understanding of hazards/risks associated with particular jobs/tasks. It cannot be assumed that young workers completely understand all the risks associated with a job merely because the hazards are visible. Scenarios involving danger perception can be used to improve young workers' mental imagery of undesired outcomes from job-related activities. Those responsible for supervising young workers should have appropriate expectations about what tasks they can reasonably be expected to undertake, particularly when these involve 'emotional labour', including any potentially stressful contact with customers or others.

Emphasise mentoring and support, particularly for males, from more experienced role models, and ensure that young workers who show aggressive responses are not assigned to tasks where poor control or risk-taking could compromise their own or others' safety.

Who should be involved in implementing and evaluating these strategies?

Many parties can play a role in ensuring the health and safety of young workers. These include:

- Governments – e.g. developing legislation and policies relevant to young workers.

- Workplace health and safety enforcement agencies – e.g. ensuring that specific arrangements for young and inexperienced workers are in place.
- Workplace management – e.g. ensuring that safe operating procedures derived from risk assessments incorporate control measures appropriate to young workers’ level of experience.
- Workplace supervisors – e.g. ensuring that young workers are adequately monitored and given regular and appropriate feedback on their work performance, particularly safety aspects.
- Workplace trainers – e.g. ensuring that training given to young workers includes all the features necessary to address the needs identified above.
- More experienced workers – e.g. maintaining awareness of young workers’ performance and giving appropriate feedback, particularly regarding safety.
- Peers – e.g. developing a ‘buddy’ system in which pairs (or larger groups) of young workers look out for one another.

About the author

Associate Professor Glendon has a long-standing interest in the safety of young workers and young drivers. His authored work on this topic includes:

Glendon, A. I., Clarke, S. G., & McKenna, E. F. (2006). *Human safety and risk management* (2nd edn.). Boca Raton, FL: CRC Press/Taylor & Francis.

Glendon, A. I. (2006). Brain development during adolescence: Some implications for risk-taking and injury liability. *Journal of Occupational Health and Safety – Australia and New Zealand*, 22, 137–150.

Glendon, A. I. (2005). Young drivers’ attitudes towards risks arising from hazardous driving behaviours. In L. Dorn (Ed.). *Driver behaviour and training*. (pp. 193–206). Aldershot, UK: Ashgate.

Glendon, A. I., & Cernecca, L. (2003). Young drivers' responses to anti-speeding and anti-drink driving messages. *Transportation Research Part F: Traffic Psychology and Behaviour*, 6, 197–216.

- Glendon, A. I., & Boyle, A. J. (1987). *YTS accident injury statistics: YTS accident injuries April 1983 – September 1986*. Sheffield, UK: Manpower Services Commission.
- Glendon, A. I., & Hale, A. R. (1986). Accidents to young people on the UK Youth Opportunities Programme, In G. Debus & H-W. Schroiff (Eds.), *The psychology of work and organisation* (pp. 329–336). Amsterdam: Elsevier.
- Hale, A. R., & Glendon, A. I. (1985). *A study of 1700 accidents on the Youth Opportunities Programme*. Sheffield, UK: Manpower Services Commission.