

- Keep up-to-date with road rules
- Understand new technologies
- Update first aid competency
- Assess/use appropriate transport alternatives
- Report road-related problems
- Suggest road improvements
- Set a good example to other road users
- Impart knowledge/share experience
- Adapt to the use of new equipment
- Adapt to left/right hand drive
- Deal with hot, cold or wet weather
- Tow a large vehicle – trailer/caravan
- Acquire other classes of driving licences as necessary

## Conclusion

Learning is a lifelong pursuit driven by our ever-changing needs and circumstances. Knowing how to best prepare ourselves for road use is a never-ending challenge. Review of the currently available educational theory and the application of it to road safety education revealed the need to develop a whole-of-life approach that could be put into practice by parents, caregivers and educationalists.

There have been centuries of educational research on how to structure a learning program and all current programming seeks to provide a scaffold on which to build a suitable scope for each element and an appropriate sequence for those elements. When the tables were constructed, the

author referred to education theory as a separate concept and then education theory as applied to Road Safety Education. It is widely accepted in the field of child development that the teaching and learning process needs to be well-structured and with clear aims at all times so that the desired outcomes can be achieved. The learner is the central figure and the appropriate balance needs to be struck between theory and practice. Such education theorists as the oft-quoted Piaget who expounded his theory based on stages, Vygotsky with his social and interactive scaffolding and the multiple intelligences of Gardner, lead one to the conclusion that any road safety education program needs to satisfy the following criteria

- be soundly based educationally
- have the best quality design
- be sequentially structured
- be learner centred
- be targeted at the learner's current and future needs
- be competently delivered
- involve on-going evaluation by the mentors
- be evaluated for its relevance

All of these elements need to combine in order to maximize the positive powers of motivation on the part of the mentor and the learner.

*For details of relevant online resources, further reading and educational theory, please contact the author for a list of references and links to pertinent websites.*

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# Asperger's Syndrome: the implications for driver training methods and road safety

*by S Tyler, Highlands Drive Safe, member of ADTA and ACRS*

## Abstract:

Road safety issues often focus on behaviour and attitudes to driving in key age groups. However, underlying conditions such as Asperger Syndrome (AS) are not given enough consideration in the training and testing phase to ensure these road users are sufficiently equipped with the necessary skills to ensure the safety of themselves and other road users.

The prevalence of autism spectrum disorders is approximately 62: 10000 at present. This is steadily rising as diagnostic methods are refined and awareness of the condition increases. This issue must be addressed urgently and infrastructure put into place to ensure this group of potential road users are taught and tested in the most effective way to address any road safety concerns.

This report looks at the educational issues faced by this special needs group and the potential problems at the testing phase when attempting the provisional drivers test. Four case studies have been reviewed to see the real problems faced by supervisors and instructors during training and the strategies that can be implemented to decrease the risks associated for this road user group.

## Keywords:

Asperger syndrome, autism, driving, education, testing procedures.

## Introduction:

Asperger's (AS) is a condition diagnosed within the autism spectrum criteria and is prevalent in approximately 62 per 10,000 [McDermott et al, 2006] people in the population,

with a higher incidence in boys than girls [Attwood, 2007]. A more recent study [Young Shin Kim, et al 2011] shows the prevalence of autism to be 2.6% of the population. AS is often misunderstood by the general population and an assumption that the tag autism equates to low intelligence is incorrect. One diagnostic criteria includes an IQ above 70 and early speech onset [Baron-Cohen, 2008]. The main issues that arise for many people with AS are: impairment in communication, socialisation and behaviour areas [Wagner, 2009]. These three areas if not addressed early may have a severe impact on the individual's learning and in particular the main focus of this paper will be their ability to drive a motor vehicle safely.

The current AUSROADS Fitness to Drive assessment criteria does not specify the AS area directly, as the diagnostic tools used for AS are relatively new and the causes and treatments of AS are still not fully understood [Austroads, 2003]. Research continues in this area; however support mechanisms need to be implemented to address the rapidly growing number of adolescents at driving age who need specialist training to ensure optimum road safety outcomes for all road users. With the increase in AS within our society, it is crucial that infrastructure is in place now to accommodate the learning needs of this road user group.

### What is Aspergers (AS):

*“After all, the really social people did not invent the first stone spear. It was probably invented by an Aspie who chipped away at rocks while the other people socialised around the campfire. Without autism traits we might still be living in caves” - Temple Grandin.*

Aspergers is a condition within the Autism Spectrum and is often labelled as high functioning autism along with other conditions on the spectrum such as Pervasive Developmental Disorder—Not Otherwise Specified (PDD-NOS). People living with a diagnosis of AS do not always fit neatly into a set of symptoms, although many share similar symptoms. Many diagnostic tools are used to assist clinical practitioners to correctly diagnose a patient within the autism spectrum. However, diagnosis is complex, lengthy and often involves a multidisciplinary team of professionals. These diagnostic tools are developing and changing, as more research is being conducted. The current criteria DSM-IV definition for Asperger's Syndrome (299.80) is currently under review (Appendix A).

Many people with Aspergers display symptoms such as impaired communication, difficulties in social interaction, restricted and repetitive interests/behaviours and possible sensory sensitivities [Garside et al, 2000]. Adults with AS often suffer with depression and/or anxiety [Barnhill, 2004]. As the prevalence in society of Autism Spectrum Disorders increases dramatically, it is acknowledged that

early intervention can assist in the social and behavioural skills which these people have the greatest difficulty with [Smith Myles et al, 2002]. People with AS would benefit from specific strategies and services for AS rather than those targeting autism [Attwood, 2007]. A comparison of these two groups was made by Van Krevelen [cited in Wing, 1991], where he notes that “the autistic child lives in a world of his own, whereas the high functioning child with Aspergers lives in our world but in his own way” [Wing, 1991].

### The main educational issues for people with ASD:

*“A treatment method or an educational method that will work for one child may not work for another child. The one common denominator for all of the young children is that early intervention does work, and it seems to improve the prognosis.” - Temple Grandin*

The impairment of social skills development can lead to misunderstanding and poor communication within driving lessons. Students with AS have limited ability to ‘read’ facial expression and gestures - they will often look down or away to avoid eye contact. As a driving instructor, this can impair our ability to gain feedback on the level of effective learning taking place. What has and has not been understood plus the ability to apply the knowledge, is not readily available to the instructor. Alternative strategies need to be employed so feedback can be applied to the teaching process. An important part of teaching students with AS is the need to keep the teaching methods evolving to the needs and abilities of the student.

Direct communication works well for students with AS, where all connotations and double meanings are removed. Students with AS will focus on understanding the mystery behind your comment, rather than focusing on the actual task of driving. There is often a want to over analyse the ‘hidden meaning’, as they struggle to understand. Children with AS are often off task, distracted by internal stimuli [Williams, 1995].

The main aim of a driving instructor is to develop a rapport with students with AS, to keep their primary focus on driving and to teach them to identify possible and actual dangers. Students with AS are generally ‘monotropic’ [Lawson, 2003] in comparison to neuro typical students who are multichannelled. Monotropism causes issues when a student cannot see the big picture as Attwood describes: *“perceiving the world through a telephoto lens, rather than a wide angle lens”* [Attwood, 2007], limiting their ability to take in more than one piece of information at a time.

Driving is a process of constantly assessing the big picture; this poses a major challenge to students with AS. Students

with AS are more likely to fixate on a smaller detail and analyse this rather than see the context of that detail within the larger picture. When a student with AS is overloaded with input, their coping switch overloads thus creating fear, frustration, possible anger and stress issues [Roux *et al*, 2008]. Some students observed by the author completely shut down and needed to stop for ‘time out’ to refocus. Other students became irritated or aggressive and displayed inappropriate behaviour which needed to be addressed in a timely and correct manner. The majority of the case studies explored by the author showed signs of retreating to a safe topic of their interest when placed under stress, causing them to lose focus on driving and become a high risk driver. Intervention is required at this point by a trained instructor to stop driving and refocus on the task through appropriate methods. Common signs of a student with AS losing focus includes: not checking their right of way, entering intersections without visual checks and losing their road position. Many students became distracted to the point of ‘forgetting’ they are driving until they could be taught to refocus to the task. If correct training techniques are introduced early, many of these issues can be addressed and the driver with AS learns coping strategies to deal successfully with these issues. It is not that attention is poor, rather their focus on irrelevant stimuli prevent a student with AS from making out what is relevant [Williams, 1995].

Repetitive and restrictive topics of interest can be a barrier to learning; however an instructor will need to set strict guidelines whilst driving. Driving is best done in short intervals and to begin with in quiet areas. When new tasks are introduced a trainer will need to incorporate appropriate methods of training that suit the student to reduce anxiety. Students with AS will generally take longer to complete training when learning to drive as they master each skill set and unlike neuro typical students, they need to learn coping strategies and develop social communication skills. Students with AS need to learn methods of reading another driver and the car behaviour displayed whilst driving, very similar to body language we read daily in social situations. This is an area that students with AS struggle with and therefore they need to learn other ways to read people. Road rules and manoeuvres generally pose little problem as these students rote learn these skills and are technically correct; it is the unknown or unpredictable nature of other drivers and situations that poses the largest threat to drivers with AS. The higher order skills needed to transfer knowledge or rules from one situation to a different situation are not easily achieved for a student with AS [Wagner, 2009].

The students reviewed displayed common issues in the areas of problem solving; organisational skills; conceptual development; and making inferences and judgement. All students reviewed lacked higher order thinking skills when dealing with transference of knowledge and the application of a theory to problem solving areas [Roux *et al*, 2008]. It

is well documented that AS individuals have problems with executive function, in particular with working memory, attention and impulse control [Gillberg, 2006]. Deficits in executive functioning can affect their ability to break tasks into smaller components: the more abstract the concept, the more difficult it is to understand. Although rote memory may be good they often need a trigger word to access the information [Barnhill, 2004]. Executive function deficits may impair a driver’s ability to transfer learnt responses in specific situations to different situations, as well as maintaining the multifocus needed whilst driving. More research is needed in this area to establish the effects on driving skills and to develop effective training methods.

It is necessary to teach students with AS all the road rules, gestures and courtesies in driving; even the ones not listed in the books. These include situations neuro typical drivers easily understand, such as “Why is the oncoming car flashing their lights at me”? The answer is multifaceted - it could be Police radar, an accident or perhaps to indicate that your high beam lights are on. An AS driver will need to be aware of the possible answers to help them read the situations as they occur and transfer knowledge to different scenarios.

Kathie Harrington [2003], a speech therapist and a mother of a driver with AS, lists specific areas that she believes need to be taught to students with AS. These include: vocabulary, predicting, sequencing, turn taking, memory, telephone use and problem solving. Professional assistance is required to adapt these skills to the task of driving a vehicle.

Asperger himself commented on the need for the teacher to adapt training models to suit the AS student:

*“The teacher who does not understand that it is necessary to teach these children seemingly obvious things will feel impatient and irritated .... These children often show a surprising sensitivity to the personality of the teacher.... They can be taught, but only by those who give them true understanding and affection, people who show kindness toward them and yes good humour.”* Asperger 1944

### Testing procedures and issues:

In NSW, a learner driver must currently complete 120 hours of driving (including 20 night hours) over a 12 month period from the age of 16 years. If over 25 years old, a learner can sit the driving test without completing any driving practice as there is no requirement to complete minimum hours or hold a logbook.

If a medical condition listed in AUSROADS is identified, the driver is required to have a doctor complete a medical form and lodge this with the RTA so the condition can be

listed on their licence. Although mandatory, this is not currently enforced and is based on an honesty system. Given the majority of the students reviewed with a variety of medical conditions do not report these to the RTA; the system needs to be changed to ensure this information is captured to reduce road safety issues before they occur.

The RTA medical form does not list Aspergers as a specific medical condition. It does list mental or physical disability that affects driving ability. Many parents, from the author's observations will overlook or refuse to submit these forms even though it is mandatory. This resistance is often due to the stigma the learner may acquire by listing a disorder. Many families fear they will be discriminated or alienated from the mainstream if their child is labelled 'autistic'. This label often brings thoughts of the typical autistic child, where intelligence levels are low. This is obviously not true for Asperger clients where IQ is usually above average. However, the issue is the discrepancy between verbal IQ and performance IQ - often a difference of 25 points, leading to superior verbal intelligence but extremely low IQ in performance [Gillberg 2006]. The peaks and troughs of IQ can further hamper training where an instructor may think the student understands but in reality they cannot perform the complex task well.

One category on the medical form that may encompass these students is the question: Are you taking medication? Many diagnosed AS people are on medication, whether ADD medication or antidepressants. Once they tick yes to this question, a medical is required from their treating doctor. However, as stated this is an honesty system and would require them to actually answer yes to this question. Parents may not answer yes to this question to prevent the child being categorised into the autistic label. Better education on this mandatory requirement is urgently needed to ensure parents and learners understand the legal consequences in the event of an accident, if medication is not declared.

From the learner driver knowledge test (DKT) to the provisional stage there is no enforcement to check the medical status of a driver.

All students with AS reviewed passed the computer based driver knowledge test after one to two attempts; giving them access into the world of driving without the necessary support and training required. Driving instructors are often not informed at the time of the lessons for fear of discrimination or of them forming pre conceived ideas. At the P1 practical driving test, if a medical form has not been completed or the application does not list a medical issue the practical driving test will commence. This poses an occupational health and safety issue for RMS testing officers who will conduct a 'normal' test with objective methods. Inspectors may not be aware of the potential

dangers if the student with AS misunderstands directions, has a sensory overload, gets frustrated or upset or has an imbalance in their medication causing focus and decision making issues.

## Conclusions:

The prevalence of Autism and Asperger's syndrome is increasing and is becoming a recognised issue for drivers, as our diagnostic tools become more accurate. However, support mechanisms for this particular group of road users are severely lacking for the increasing population this condition affects. The current reporting system for these issues does not encompass Aspergers and yet there is extensive evidence that these conditions and the subsequent medication that is prescribed to these road users can have an effect on road safety for all road users. The most important finding from this report is the need for changes to the reporting methods, teaching methods and the availability of support for this specific road user group. Many are quite capable of becoming safe road users and in many instances are safer than neuro typical drivers as they generally have an inbuilt ability to always follow road rules and techniques they have learnt. This however, could also be seen as a negative attribute when trying to interpret situations and be flexible with the outcome.

We currently have in NSW a total of 724,655 road users in the learner, P1 and P2 categories (Appendix B). Using the statistics of 62:10000 [McDermott *et al*, 2006] children on the autism spectrum, that equates to 4493 of these road users in NSW who are unsupported in the critical learning phase of driving. These people may learn to adjust and adapt to be safer drivers. However, further research on older drivers with Aspergers needs to be undertaken to determine if adapting is done in a positive way or if targeted education and training methods could assist this process to be more effective and have long term positive results. These students may have social, communication and behavioural issues to work through in their lives; however all are unique individuals that have their own strengths and weaknesses that need to be correctly assessed and with support infrastructure put in place to support them.

Currently the AUSTROADS Assessing fitness to drive guidelines do not specifically list this group of road users to be modified or tested. Adjustments need to be made to identify this group of road users before the learner phase and implement support and modifications to balance the ability to drive and ensure the safety of all road users.

## Recommendations:

Further study is needed in the area of training models for Asperger drivers, in particular methods of training drivers with AS in a way that best suits their individual learning

style. Testing methods and RMS guidelines should be reviewed to include special needs groups. It is evident from these case studies that drivers with AS and their carers may not understand the need to report the condition or there may be preconceived ideas of discrimination at the time of testing. This issue should be addressed, as reporting incidence must be increased to allow monitoring and adaptation of current methods. Training should be implemented for all testing officers in meeting the special needs of test applicants so that fair and equitable testing can be achieved for all road user groups. Training packages are currently being developed for Asperger drivers and their supervisor/trainers to assist the learning process. Government funding could be made available to develop this growing need and to prevent future road safety issues due to ineffective training. Further research is being carried out in the United States at Harvard University with drivers with AS and the use of driving simulators to assist in higher order thinking skills development. Results of this research will be available late in 2012 when further understanding of how to effectively assist this road user group will be known.

Medical testing needs to be introduced at the pre-learner phase for all new drivers to help identify all special needs groups, the ability to drive and any modifications that needs to be made to increase road safety for all road users.

All new learners, not unlike the older drivers, would benefit from being screened and completing a medical assessment form prior to the DKT. Any special needs or medical issues would then be identified; the medical form would then serve as a clearance to allow that person to pursue a driver's licence.

### Method:

Over a twelve month period four students attending driving lessons were chosen based on similar age, sex, diagnosis of AS and demographics. These students were all diagnosed by health professionals as Asperger syndrome patients using the DSM-IV definition for Asperger's Syndrome (299.80) guidelines (Appendix A). Students were further assessed by the driving instructor (author) using an educational questionnaire tool for special needs students to ascertain specific educational needs. An individual, tailored program was then developed by the instructor to suit the requirements of the student with AS. Over the following twelve months the four students were monitored and notes compiled on the progression of skills in relation to driving a motor vehicle. These results are compiled here as observations and recommendations of the driving instructor. Male students were chosen over female as the diagnosis of male patients is more easily identified and the characteristics of AS are more pronounced or less camouflaged [Attwood, 2006 and Attwood, 2007]. The following are the results of the observations of the author.

Key focus areas were the student's cognitive ability, medication and the effect on driving skills, focus issues and trigger points as well as general driving ability.

To date there is little research data or information on driver training in relation to students with Asperger syndrome. This may be due in part to the difficulty in diagnosing this age group with AS. A higher percentage of research focuses on early childhood intervention and development. There are currently two areas where this research is beginning to be conducted. The first is in the UK where Julia Malkin, a specialist driving instructor, has developed a training method for autistic clients and the second is in the US at Harvard University where studies are being conducted with teenagers with AS, where the effect of training on driving simulators may assist this needs group in the area of motor vehicle driving.

The lack of raw data worldwide in relation to driving skills and ability of people with AS is an area that needs to be addressed. With the main focus on early childhood and AS, the older age groups that are both diagnosed and undiagnosed with AS currently have little assistance in key living skills areas such as driving a vehicle.

### Case Report:

The following is a summary of four cases experienced by the author and the challenges/issues faced in driver education.

*Real names have not been used for privacy issues.*

### Case study 1

James aged 20 (male)

**Diagnosis:** Aspergers, ADHD

**Medicated:** Yes

**Reported to RTA:** No

**Problem areas:** James was 18 years old at the time of learning to drive. He had delayed driving to develop his concentration skills and maturity. James' diagnosis was confirmed as Aspergers with specific interest areas. His interest areas limited his conversational skills and he was segregated at school by his peers as 'different'. This did not phase him as he seemed indifferent to other's opinions as he continued with his specialist topic.

James has excellent recall skills for obscure facts on his topic and can continue a conversation over extended time periods.

In relation to driving skills he was able to recall technical points well and corrected the instructor when these points

were missing during instruction.

Once distracted, James became dangerous where small things took his focus from the complex task of driving. Friends on the side of the road or specific car types would cause him to focus on that single issue rather than the multitasking required. Manual driving was attempted, however, the recommendation from the instructor was to only drive an automatic vehicle to address the multitasking issues. If James was to drive an automatic vehicle this would allow more focus on traffic situations and hazard perception skills.

James had poor focus when off task and was slower to respond to 'what if?' scenarios when questioned, compared to neuro typical students.

Severe echolia, or repeating of words was a barrier for the trainer to overcome as this interfered with the flow of training.

Gross motor skill deficit caused issues when first learning to steer, however these were overcome with continual practice. Complex tasks such as steering and simple traffic took longer to grasp compared to neuro typical drivers, with real issues in the ability to read other driver's intentions. However, improvement on his technical skills such as reverse parking, to and from the kerb and three point turns were simpler to grasp as they were performed in low traffic areas with little distraction and required repetition to master. James will struggle to remain safe, however he has the skills necessary to pass an RTA driving test and become an unrestricted road user. With medication he may be more stable whilst driving although this is something that may not occur within the family unit.

**Strategies:**

A parent/learner/instructor workbook for communication was adopted to reinforce the sequencing of tasks and allowed a consistent approach to be incorporated. Regular lessons were conducted for consistency and focus training.

The use of keywords and structured language in instructions for consistency reduced confusion and anxiety.

Recommended restriction to automatic vehicle use only.

## Case study 2

Simon aged 26 (male)

**Diagnosis:** Aspergers, Anxiety, depression

**Medicated:** Ritalin, although not on it at present, self medicates when needed, has anxiety attacks.

**Reported to RTA:** No

**Problem areas:** Simon has severe social issues; he prefers to work alone; he lives at home with his mother as his primary carer and his focus area of interest is IT, where he communicates through video games and online gaming. He

has focus and attention issues as well as high anxiety levels. Simon over-reacts to problems and is easily overwhelmed by complex situations. He has poor concentration levels after 20 minutes of driving. Simon has back problems which interfere with comfort levels, causing distraction during driving. Simon becomes extremely anxious when the car travels over 40 km/hr. He shows signs of mild echolia and gross motor skill deficit.

Simon is comfortable having a conversation one-to-one with an instructor once a rapport has been established. He has his own unique sense of humour that he adds to the conversation. However, he is easily distracted if allowed to continue the conversation in his area of interest.

He has a good comprehension of tasks and the learning sequences. The use of video games allows cross understanding and training of some skills used in driving to occur. He learnt pull push steering technique at a neuro typical driver's rate.

**Strategies:**

The main emphasis was on reducing anxiety levels when travelling over 40 km/hr or with oncoming traffic. Learning could not continue until this barrier had been overcome.

The instructor reduced discussions on his topic of interest to increase focus on the driving task. This was helped by allowing a set time in the lesson when stopped to talk about his area of interest; releasing anxiety in a controlled way.

The instructor ensured medication was up to date and taken on time so it was effective for the lesson. A communication book for the parent, learner and instructor was introduced, breaking tasks down and working through smaller components in sequence to reduce anxiety.

Simon will take repetitive lessons over an extended period of time which due to cost factors may not be possible.

The anxiety levels cause Simon to stall in his progression and cease lessons for periods of time. It is the instructor's opinion that Simon should not be driving unless consistent lessons can be undertaken. His cognitive maturity levels could pose a problematic approach to driving and he may, due to the anxiety levels, become a hazard to other road users. His strong personal belief of being correct and his fixed views of 'everyone else' may not allow a flexible approach to driving, which is necessary in order to identify hazardous situations and to avoid these situations.

## Case study 3

John aged 20 (male)

**Diagnosis:** Aspergers, ADHD, depression (past suicidal tendencies)

**Medicated:** Yes, anti depressants

**Reported to RTA:** Yes - just before P1 test after recommended by the instructor.

**Problem areas:** John has low social skills and lives at home with his mother as a primary carer. He has no comprehension of double meanings or hidden connotations. John has no understanding of humour within the conversation. John has high levels of anxiety and fear of failure when asked to perform a new task. He cannot distinguish facial, social or body gestures, and has a literal understanding of terms within conversations. He has a need to simplify techniques otherwise he has sensory overload resulting in behavioural issues. John has difficulty reading the behaviour of other drivers and their intentions. He has too much trust when approaching an intersection or roundabout and often does not look into the danger areas to have sufficient crash avoidance space (CAS). John has excellent recall ability for the technical processes, especially the manoeuvres. He has developed a strong understanding of the Safety-First method introduced by the instructor and can apply this to his everyday driving. John has a strong personal attitude of right and wrong and can apply this into his right of way knowledge. However, when other drivers do not follow the same rules he becomes agitated and stressed.

#### Strategies:

The most important strategy used with John was calming techniques to manage his anxiety. The instructor used many ‘what if?’ scenarios to broaden John’s understanding of unpredictable drivers and pedestrians. By increasing his exposure to traffic he was put into a wider range of situations and developed a deeper learning of this concept. In essence John built his own mental library of ‘what ifs?’. Positive praise for John was crucial as many in his direct support group had focused heavily on what he was not capable of doing. By turning this around to the strengths we found John responded well to the instructor and developed more confidence in his driving. He has a fiercely independent spirit that can interfere with his training, so a more positive approach reduced this to allow further learning to develop. John had intense training for four weeks before his RTA driving test which focused on general driving skills, familiarisation in the general test areas, RTA language, procedure and instruction, Safety- First and repetition of manoeuvres. This reduced the anxiety he was feeling as a possible fail in the driving test could have provoked suicidal tendencies and depression. John was calm and relaxed for his RTA test and remained focused throughout the drive, scoring 98% with no fail items. He continues to drive safely and adheres rigidly to the guidelines he was taught in lessons. He has specific driving routes and rarely changes these.

## Case study 4

Jack aged 18 (male)

**Diagnosis:** Aspergers, dyspraxia

**Medicated:** Yes

**Reported to RTA:** Yes, as recommended by the instructor before the P1 test was due.

**Problem areas:** Jack is a timid, quiet student currently in his HSC year. Jack lives at home with his parents and is looking forward to attending University next year. He has a very supportive school environment where he has developed a sound attitude toward others and in particular his driving. He has extended his learning phase to over two years and has had various barriers to work through with dyspraxia.

Jack has a good understanding of his own limitations and he adheres to these self imposed restrictions. His depth of field often causes issues whilst driving.

#### Strategies:

It was important to develop the usual strategies for Asperger students, such as communication book, key words and set routines. However, Jack’s diagnosis of dyspraxia required the introduction of strategies for his impaired ability to judge space and distances. The instructor used visual markers for judgement of distance, crash avoidance space and indicator distance rules.

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## Appendix A

Currently under review:

### DSM-IV definition for Asperger's Syndrome (299.80)

(I) Qualitative impairment in social interaction, as manifested by at least two of the following:

- (A) marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, & gestures to regulate social interaction
- (B) failure to develop peer relationships appropriate to developmental level
- (C) a lack of spontaneous seeking to share enjoyment, interest or achievements with other people, (e.g. by a lack of showing, bringing, or pointing out objects of interest to other people)
- (D) lack of social or emotional reciprocity

(II) Restricted repetitive & stereotyped patterns of behavior, interests, & activities, as manifested by at least one of the following:

- (A) encompassing preoccupation with one or more stereotyped & restricted patterns of interest that is abnormal either in intensity or focus
- (B) apparently inflexible adherence to specific, nonfunctional routines or rituals
- (C) stereotyped & repetitive motor mannerisms (e.g. hand or finger flapping or twisting, or complex whole-body movements)
- (D) persistent preoccupation with parts of objects

(III) The disturbance causes clinically significant impairments in social, occupational, or other important areas of functioning.

(IV) There is no clinically significant general delay in language (e.g. single words used by age 2 years, communicative phrases used by age 3 years)

(V) There is no clinically significant delay in cognitive development or in the development of age-appropriate self help skills, adaptive behavior (other than in social interaction) & curiosity about the environment in childhood.

(VI) Criteria are not met for another specific Pervasive Developmental Disorder or Schizophrenia.



## Appendix B

Table 2.1.2 Licence class by licence type as at 30 September 2011

| Licence type        | TOTAL     | Licence class |          |          |          |          |          |         |
|---------------------|-----------|---------------|----------|----------|----------|----------|----------|---------|
|                     |           | Class C       | Class LR | Class MR | Class HR | Class HC | Class MC | Class R |
| <b>Learner</b>      | 299,885   | 273,965       | 0        | 0        | 0        | 0        | 0        | 25,920  |
| <b>P1</b>           | 162,537   | 143,545       | 0        | 0        | 0        | 0        | 0        | 18,992  |
| <b>P2</b>           | 262,233   | 256,098       | 143      | 1,225    | 718      | 0        | 0        | 4,049   |
| <b>Unrestricted</b> | 4,700,719 | 3,694,460     | 85,154   | 124,985  | 200,552  | 111,558  | 20,233   | 463,777 |
| <b>TOTAL</b>        | 5,425,374 | 4,368,068     | 85,297   | 126,210  | 201,270  | 111,558  | 20,233   | 512,738 |

Note: A person may hold a rider licence class as well as a driver licence class.

[http://www.rta.nsw.gov.au/publicationsstatisticsforms/statistics/registrationandlicensing/tables/table212\\_2011q3.html](http://www.rta.nsw.gov.au/publicationsstatisticsforms/statistics/registrationandlicensing/tables/table212_2011q3.html)  
accessed 22/12/2011

# Road safety management in Australia: a call for more coordinated action

by *Lauchlan McIntosh AM*  
(January 2013)

## Summary

This is a conversation paper on national public policy issues relating to reducing Australia's deaths and injuries from road crashes. These deaths and injuries are often termed the "road toll"; a toll or price we do not have to pay. The National Road Safety Strategy 2011-2020 (NRSS) accepts a zero vision - no one should be killed in road crashes. This conversation paper is entirely the view of the author, developed from conversation with a wide range of interested individuals and it will be updated based on comments received. This is the second edition. It is intended to provide an independent constructive commentary with some specific actions to reduce road trauma in Australia.

Two years into the UN Decade of Action for Road Safety 2011-2020, the Australian response and actions in

managing a reduction in domestic road trauma could benefit from a more coordinated and action-oriented focus.

Australian governments collectively agreed in May 2011 to reduce deaths and injuries from road crashes by 30% by 2020. While results in some areas are on target, overall Australia is already falling behind its trauma reduction targets. More died and perhaps more were injured in road crashes in 2012 than 2011. Twenty five died every week in 2012 across the country in those crashes. We can estimate that around 500 were seriously injured; every week.

Recognising road safety should be a vital factor in the Australian productivity and national economic debate. There is a strong case for integrating road safety targets and aspirations into all current research, road, vehicle and communication programs; and for assessing and building efficient cooperative State, Local and Federal Government