

Should the legal age for buying alcohol be raised to 21 years?

Evidence and support is increasing to raise the minimum age for buying alcohol in Australia

Harmful alcohol consumption is a prevention priority in Australia. Frequent or episodic binge drinking (consuming five or more standard drinks on a single occasion) is of specific concern among youth because of their neurobiological vulnerability to the effects of alcohol. There is increasing evidence that key aspects of brain and related neurocognitive development continue into early adulthood. Available evidence associates short- and longer-term cognitive impairment during the postpubertal and early adult years with an earlier age-of-onset of harmful alcohol consumption.¹ Although ethical limitations preclude human experimental trials, there is emerging neuropsychological and brain-imaging evidence associating binge drinking or persistent high levels of alcohol use with adverse impacts on brain development (notably of the frontal lobe and frontal–striatal circuits) in young people.¹ The ways in which such harms may accumulate are increasingly considered within a developmental framework that seeks to identify pathways to alcohol-induced brain impairment.¹ This pathway-based approach emphasises the potential benefits that may result from earlier modification of patterns of excessive alcohol use. A delay in the age of exposure to the toxic effects of alcohol may be of particular benefit to those who are vulnerable due to neurodevelopmental delays.¹

The need to introduce effective alcohol control policies targeting the youth population is indicated by recent increases in alcohol-attributable hospitalisations and emergency department attendances. The need for change is further evident in the normalisation of harmful alcohol behaviour in highly publicised annual rituals of Australian youth. A questionnaire survey of 260 youth aged 17–19 years, recruited using intercept sampling during the end-of-school celebrations on the Queensland Gold Coast in December 2010, revealed that most played drinking games (74.8%) and consumed more than 10 drinks per night (64.1%), and that significant proportions had sex without protection (18.3%) and with multiple partners (13.9%).²

To date, advocacy for action to control alcohol in Australia has focused on components of a comprehensive approach, including tax reform and increased industry regulation. Effective action is opposed by the powerful alcohol industry that has used product design, advertising and promotions to target sales to young people. However, there has been an increasing public focus to address these issues from organisations such as the Australian Medical Association and the

National Alliance for Action on Alcohol (<http://www.actiononalcohol.org.au>).

We argue that existing efforts to prevent alcohol-related harm in Australia should be maintained and extended to include advocacy for an increase in the minimum purchasing age for alcohol from 18 to 21 years (age-21 laws). The minimum purchasing age in Australia is principally established through legal obligations within each state and territory that regulate the age at which a licensed venue can sell alcohol or allow its use on the premises (eg, the South Australian *Liquor Licensing Act 1997*).

Evidence from the United States, Canada, New Zealand and Australia suggests that increasing the legal purchasing age will reduce youth alcohol use and harm. First, evidence shows that where the legal age for purchase or consumption was reduced, population rates of youth alcohol-related harm increased. In the US, 29 states lowered the legal drinking age from 21 to 18 years between 1970 and 1975.³ During this period, all 10 Canadian provinces,³ South Australia, Western Australia and Queensland also lowered the minimum age for selling alcohol to 18 years.⁴ A meta-analysis found that lowering the age increased the incidence of crashes involving 18–20-year-old drivers by 10%.⁵ The Australian studies each showed increased harms after the state-legislated age was lowered.⁴ In some cases, increased crash incidence was observed among 15–17-year-olds,⁵ a phenomenon we describe as a trickle-down effect. Such an effect is consistent with evidence that youth up to a few years below the legal age are commonly able to purchase alcohol or obtain it from friends and siblings.⁶

Second, evidence shows that increasing the legal drinking age to 21 years decreases population rates of youth alcohol-related harm. In the late 1970s and early 1980s, several US states increased the legal drinking age to 21 years, and evaluations showed reductions in alcohol-involved traffic crashes.³ In 1984, the US Government passed legislation permitting it to withhold highway funding if states failed to enact age-21 laws. By 1988, all 50 states had complied. A review of 17 studies of states that had raised the legal drinking age noted consistent effects and estimated average reductions in underage crash involvements of 16%.⁵ Evidence of improved road safety between 21 and 25 years of age^{3,5} has been explained in terms of follow-on benefits, where people exposed to the higher legal drinking age drink less in adolescence and, as a consequence, develop more moderate drinking patterns⁷ and less frequent harmful drinking patterns as adults.⁸ Findings also show that stricter enforcement further reduced harms.⁹ An examination across provinces in Canada found that a higher minimum legal purchasing age reduced youth

John W Toumbourou
PhD
Professor and Chair in
Health Psychology¹

Kyros Kyri
PhD
Professor and
Senior Brawn Fellow²

Sandra C Jones
MBA, MPH, PhD
Professor and Director³

Ian B Hickie
MBBS, MD, FRANZCP
Professor and
Executive Director⁴

¹ School of Psychology and
Centre for Mental Health and
Wellbeing Research,
Deakin University,
Geelong, VIC.

² School of Medicine
and Public Health,
University of Newcastle,
Newcastle, NSW.

³ Centre for Health Initiatives,
University of Wollongong,
Wollongong, NSW.

⁴ Brain & Mind
Research Institute,
University of Sydney,
Sydney, NSW.

john.toumbourou@deakin.edu.au

doi: 10.5694/mja13.10465

Online first 12/05/14

Increasing the minimum age for purchasing alcohol: policy options

A politically challenging policy change could involve the federal government brokering a coordinated agreement to amend all relevant regulations in all states to increase the legal purchasing age to 21 years. The approach taken in the United States in 1984 could be adopted, in which the US Government required that states pass some form of age-21 legislation before receiving highway funding.

Less challenging options include one or more state/territory governments restricting:

- purchasing rights until 19 (as in some Canadian provinces) or 20 years of age (as was the case in New Zealand until 1999), which has the advantage of removing legal purchasing of alcohol from secondary school-age populations
- the amount and types of alcoholic products that can be purchased by young people, as is the case in Norway and Sweden
- secondary supply — five jurisdictions (Northern Territory, New South Wales, Queensland, Tasmania and Victoria) have introduced legislation limiting the secondary supply of alcohol to minors;¹¹ such legislation could be extended nationally and to older youth
- use in specific contexts, such as public spaces. ◆

hospitalisation rates for alcohol use disorder, alcohol poisoning, suicidal behaviour and traffic crash injury.¹⁰

The evidence strongly suggests that raising the minimum purchasing age for alcohol would reduce youth alcohol-related harm in Australia. The Box presents options for introducing age-21 laws. We now consider four objections commonly raised in opposition to the policy.

1. Raising the legal purchasing age undermines the autonomy of people ordinarily regarded as adults; it is often argued that “if you are old enough to go to war you are old enough to drink”: This argument can be countered by recognising the increasing evidence (as summarised above) that young people are neurologically not full adults at 18 years of age and have higher vulnerability to alcohol harm. Given that lowering the legal purchasing age has been found to increase youth alcohol harm each year by at least 10%,⁵ we estimate that this policy change has killed and injured more Australian youth than have our wars over the intervening four decades. Young people and others in society have a right to policies that protect them from harms such as the second-hand effects of alcohol.

2. Age-21 laws in 21st century Australia will not attract public support — young people have more freedoms than ever before, and removing the freedom to purchase alcohol would alienate youth voters: There is overwhelming community concern about harmful drinking and its consequences. While some younger voters may oppose the legislation, involving young people in this discussion may provide a useful means of increasing awareness of alcohol-related harms. Even without any significant public advocacy campaign, public support has increased for age-21 laws from 40.7% in 2004 to 50.2% in 2010.¹²

3. The policy might increase illicit drug use among young people due to drug substitution: Cross-national studies do not support this concern. Available data show that rates of adolescent alcohol

use fell steadily in the US after age-21 laws were introduced, without a subsequent rise in other drug use.¹³ A cross-national comparison in 2002 revealed that most students abstained from alcohol, tobacco or illicit drug use during adolescence in the US (69%) compared with a minority in Australia (42%).¹⁴ A longitudinal follow-up in 2010–2011 showed that, after 21 years of age, alcohol use remained lower in the US, while rates of any illicit drug use were similar.¹⁵

4. The policy is no longer relevant, as targeted strategies now reduce alcohol-related road trauma among probationary drivers: The New Zealand experience argues against this. In December 1999, New Zealand lowered the minimum purchasing age from 20 to 18. A study of the effects on traffic crash injury included an age comparison group (20–24-year-olds) as a control for the effects of simultaneous introduction of beer in supermarkets and Sunday trading, and for other coincident but not age-specific road safety interventions that might have affected the likelihood of road traffic crashes.¹⁶ Comparing traffic crash injury rates in the 4 years before and after the law change, the study found effects consistent with those seen in the 1970s in the US, Canada and Australia, including trickle-down effects. The study concluded that more people were injured from alcohol-related traffic crashes involving 15–19-year-old drivers than would have occurred had the purchasing age not been reduced.¹⁶ The findings were consistent with those of independent research groups.¹⁷

Advocating for age-21 laws in Australia

Although there is no consensus regarding effective knowledge translation strategies in public health, good-practice guidelines can be identified from a systematic review¹⁸ and a Cochrane protocol.¹⁹ Strategies to achieve age-21 laws in the US³ included disseminating research within key political constituencies and taking action to counter the arguments and oppositional tactics of vested interests. Based on these considerations, we propose a four-step strategy for effectively advocating for the introduction of age-21 laws in Australia.

- Public health, law enforcement and other concerned professional and citizen organisations should be approached to endorse the policy as part of a comprehensive approach, and to develop a coordinated advocacy program at national, state and territory levels.
- There should be continuing public focus on research evidence concerning the vulnerability of young people and the likely benefits of this legislation.
- Politicians should be regularly provided with appropriate briefing information and responses to concerns likely to be raised in the community and by the alcohol industry.
- Advocacy should be sustained, recognising that opportunities for such change may occur initially in one jurisdiction with others then following.



evidence shows that increasing the legal purchasing age to 21 years decreases population rates of youth alcohol-related harm



Acknowledgement: We thank Mike Daube for his valuable advice in the drafting of this manuscript.

Competing interests: John Toumbourou declares money paid to his institution through National Health and Medical Research Council (NHMRC) and Australian Research Council (ARC) grants for research relating to alcohol misuse by young people. Kypros Kypri declares grant and fellowship funding from the NHMRC and grant funding from the ARC and the Health Research Council of New Zealand. Sandra Jones declares money paid to her institution by the ARC for a future fellowship. Ian Hickie is a National Mental Health Commissioner, and has received remuneration as a board member of *headspace*, from Bupa Australia for serving on a medical advisory board, and from Servier, Janssen, AstraZeneca and Pfizer for lectures and speaking engagements. He also declares grant money paid to his institution by DrinkWise and by NSW Health for reports relating to alcohol misuse and young people.

Provenance: Not commissioned; externally peer reviewed.

- 1 Hermens DF, Lagopoulos J, Tobias-Webb J, et al. Pathways to alcohol-induced brain impairment in young people: a review. *Cortex* 2013; 49: 3-17.
- 2 Jones S, Barrie L, Robinson L. The schoolies experience: the role of expectancies, gender roles and social norms of recent school leavers. Wollongong, NSW: Centre for Health Initiatives, University of Wollongong, 2011. <http://www.fare.org.au/wp-content/uploads/2011/07/The-Schoolies-Experience-The-Role-of-Expectancies-Gender-Roles-and-Social-Norms-of-Recent-School-Leavers.pdf> (accessed May 2014).
- 3 Wagenaar AC. Research affects public policy: the case of the legal drinking age in the United States. *Addiction* 1993; 88 Suppl: S75-S81.
- 4 Smith DJ, Burvill, PW. Effect on traffic safety of lowering the drinking age in three Australian states. *J Drug Issues* 1986; 16: 183-198.
- 5 Shults RA, Elder RW, Sleet DA, et al. Reviews of evidence regarding interventions to reduce alcohol-impaired driving. *Am J Prev Med* 2001; 21 (4 Suppl 1): 66-88.
- 6 Kypri K, Dean J, Kirby S, et al. 'Think before you buy under-18s drink': evaluation of a community alcohol intervention. *Drug Alcohol Rev* 2005; 24: 13-20.
- 7 O'Malley P, Wagenaar A. Effects of minimum drinking age laws on alcohol use, related behaviors and traffic crash involvement among American youth: 1976-1987. *J Stud Alcohol* 1991; 52: 78-91.
- 8 Plunk AD. The persistent effects of minimum legal drinking age laws on drinking patterns later in life. *Alcohol Clin Exp Res* 2013; 37: 463-469.
- 9 Wagenaar AC, Wolfson M. Deterring sales and provision of alcohol to minors: a study of enforcement in 295 counties in four states. *Public Health Rep* 1995; 110: 419-427.
- 10 Callaghan RC, Sanches M, Gatley JM. Impacts of the minimum legal drinking age legislation on in-patient morbidity in Canada, 1997-2007: a regression-discontinuity approach. *Addiction* 2013; 108: 1590-1600.
- 11 Roche AM, Steenson T, Andrew R. Alcohol and young people: what the legislation says about access and secondary supply. *Drug Alcohol Rev* 2013; 32: 124-132.
- 12 Australian Institute of Health and Welfare. 2010 National Drug Strategy Household Survey report. Canberra: AIHW, 2011. (AIHW Cat. No. PHE 145; Drug Statistics Series No. 25.) <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737421314> (accessed May 2014).
- 13 Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the future: national survey results on drug use, 1975-2012. Vol. I. Secondary school students. Ann Arbor: Institute for Social Research, University of Michigan, 2013.
- 14 Toumbourou JW, Hemphill SA, McMorris BJ, et al. Alcohol use and related-harms in school students in the USA and Australia. *Health Promot Int* 2009; 24: 373-382.
- 15 Toumbourou JW, Evans-Whipp TJ, Smith, R, et al. Adolescent predictors and environmental correlates of young adult alcohol use problems. *Addiction* 2014; 109: 417-424.
- 16 Kypri K, Voas RB, Langley JD, et al. Minimum purchasing age for alcohol and traffic crash injuries among 15- to 19-year-olds in New Zealand. *Am J Public Health* 2006; 96: 126-131.
- 17 Guria J, Jones W, Leung J, Mara K. Alcohol in New Zealand road trauma. *Appl Health Econ Health Policy* 2003; 2: 183-190.
- 18 Mitton C, Adair CE, McKenzie E, et al. Knowledge transfer and exchange: review and synthesis of the literature. *Milbank Q* 2007; 85: 729-768.
- 19 Armstrong R, Waters E, Dobbins M, et al. Knowledge translation strategies for facilitating evidence-informed public health decision making among managers and policy-makers (Protocol). *Cochrane Database Syst Rev* 2011; (6): CD009181. □