

# Alcohol advertising near schools in Tāmaki Makaurau Auckland

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## ABSTRACT

**AIM:** There has long been concern about the exposure of children and young people to alcohol advertising, which places them at risk. This study aimed to measure the prevalence, type and location of alcohol advertisements within a 500-metre radius of schools in Auckland, Aotearoa New Zealand.

**METHODS:** A cross-sectional observational study was used to quantify alcohol advertisements within a 500-metre radius of 52 Auckland schools selected using stratified random sampling.

**RESULTS:** Over half of all schools sampled (56%) had at least one alcohol advertisement within 500 metres, and this was highest among low-decile schools (63%). Nearby licensed premises were responsible for 75% of advertisements.

**CONCLUSION:** Alcohol advertising near Auckland schools is common. Mechanisms available to Territorial Authorities, District Licensing Committees and the Government to restrict alcohol advertising in communities can be used to regulate areas around schools.

The extent of alcohol-related harm in Aotearoa New Zealand warrants considerable concern. Alcohol is Aotearoa New Zealand's most harmful drug,<sup>1</sup> contributing to more than 200 disease and injury conditions<sup>2</sup> and causally linked with seven types of cancer.<sup>3</sup> Among New Zealanders aged 15–49 years, alcohol use is the leading behavioural risk factor for death and disability-adjusted life years.<sup>4</sup>

Alcohol use is normalised and widespread, with almost one in five New Zealanders reporting hazardous levels of consumption in 2021/2022.<sup>5</sup> The prevalence of heavy drinking is disproportionately higher among males, young adults (18–24 years), and Māori and Pacific Peoples,<sup>5</sup> showcasing a number of inequities associated with alcohol-related harm.

Young people, in particular, experience substantially more short- and long-term harms from alcohol use than their adult counterparts. Short-term harms include being less likely to finish high school after experiencing alcohol-related harm,<sup>6</sup> an increased risk of injuries,<sup>7</sup> sexually transmitted infections<sup>8</sup> and rates of violent offending.<sup>9</sup> Long-term harms include later depression,<sup>10</sup> risks to the developing brains of those with an alcohol-use disorder<sup>11–15</sup> and a dose–response relationship between alcohol use and decreased verbal learning and memory.<sup>16</sup> Adolescence is a period of heightened risk for addiction, with research showing that almost 50% of alcohol abuse and dependence cases in Aotearoa New Zealand are established before the age of 20 and 70% before the age of 25 years,<sup>17</sup>

leading to more alcohol-related harm in later life.

Alcohol advertising contributes to more harmful alcohol use by normalising, glamourising and embedding alcohol consumption into day-to-day settings. Children and young people are at greater risk from harm as their developing cognitive skills increase their susceptibility to the influence of advertising.<sup>18</sup> Research has established that exposure to alcohol advertising is a cause of youth drinking,<sup>19</sup> with greater exposure leading to earlier drinking initiation and drinking at higher quantities.<sup>20,21</sup>

The University of Otago Kids'Cam research found that Aotearoa New Zealand children aged 11–13 years were exposed to alcohol marketing on average 4.5 times per day.<sup>22</sup> Māori and Pacific children had levels of exposure five and three times greater than European children, respectively. While marketing through digital media is an increasingly common approach for alcohol companies, traditional advertising sites (such as billboards) remain prevalent, and alcohol marketing continues to be common in urban areas in Aotearoa New Zealand.<sup>23</sup> These sites in the built environment have particular implications for children and young people, who are more bound to their environment than adults and thus less able to avoid advertising appearing on fixed sites in their daily environment.

The right for children to have healthy and safe environments has been agreed upon at an international Convention on the Rights of the Child,<sup>24</sup> and is supported in the Government's

Child and Youth Wellbeing Strategy.<sup>25</sup> Routes to school warrant particular protection, given their frequency of use. In Tāmaki Makaurau (Auckland), several restrictions currently exist pertaining to alcohol advertising in physical spaces. Firstly, alcohol advertisements are currently prohibited on public transport vehicles, stations and other infrastructure.<sup>26</sup> Secondly, a Signs Bylaw restricts the number and proportion of advertisements that can be displayed on exterior shop fronts.<sup>27</sup> Thirdly, the location of third-party billboard and poster advertisements is governed by the Auckland Unitary Plan. Resource consents are required for these sites, but specific content restrictions are rare. At a national level, the self-regulatory Advertising Standards Authority (ASA) advertising code provides guidelines that there be no alcohol advertisements within a 300-metre sightline of the main entrance of any school.<sup>28</sup> It is important to note that this guideline was weakened in the 2020 Code update, as under the previous Code complaints could be made in relation to any alcohol advertising surrounding the school (not just within sightline of the main entrance).

The (partial) restrictions on specific forms of advertising will not eliminate all exposure, placing children at risk. To determine the prevalence, type and location of alcohol advertising near schools, this study collected data of all alcohol advertising located within 500 metres of a sample of primary, intermediate and secondary schools in Auckland.

## Methods

In this cross-sectional observational study, alcohol advertisements were identified within a 500-metre radius of 52 schools across Auckland over the period 2 December 2022 to 16 March 2023.

The aim was to select a sample of schools that represented at least 10% of all state and state-integrated schools in Auckland. To select the sample, a list was obtained from the Ministry of Education of all state and state-integrated schools located within the boundaries of Auckland Council. Schools marked as currently operating, apart from activity centres and schools on Great Barrier and Waiheke Islands, were included. The schools were first stratified into one group of primary and intermediate schools, and a second group of secondary schools. The schools were then stratified into Central, North, West and South Auckland regions based on their Council ward,

and finally stratified by school decile, being low (deciles 1–3), medium (4–7) and high-decile (8–10). In Aotearoa New Zealand, school decile rating is commonly used as an indicator of socio-economic deprivation, as it is derived from the socio-economic position of the student community compared to the wider country. Decile 1 reflects a catchment area with the highest socio-economic deprivation and decile 10 reflects areas with the least socio-economic deprivation.

From each stratified list (i.e., level of school, region, decile grouping), the schools were chosen at random using a random number generator. In the event that school size influenced the placement of advertising, the schools were selected to ensure relative balance in student size across the regions and by deciles. Two selected schools were later replaced due to inaccessibility following damage by Cyclone Gabrielle. The schools in the sample were classified as being urban (located in small, medium, large and major urban areas) or rural (rural settlements or rural other) using definitions from Stats NZ.<sup>29</sup>

To collect the data, researchers walked and drove all streets and public areas within a 500-metre radius from all boundaries of each school. Alcohol advertising was defined as any alcohol branding imagery (e.g., Heineken or Steinlager, including alcohol-free product branding), depictions of drinking or alcohol products, and licensing trust branding (such as West Liquor off-licence branding). Alcohol litter and public consumption of alcohol products were not included. For digital billboards in the sample area, the entire roll of advertisements was viewed. Each advertisement site (for instance, an off-licence outlet) was counted as one advertisement site, regardless of how many separate alcohol advertisements were shown.

Finally, using Google Maps, the distance between each advertisement site and school was calculated using road and network paths from the nearest evident access point (for both vehicles and pedestrians). Chi-square analyses and analysis of variance were used in SAS Enterprise guide 8.2 (Cary, NC, USA) to identify significant differences in advertisement site prevalence by school characteristic.

## Results

Table 1 details the characteristics of the school sample. The majority of schools were primary/intermediate schools located in urban areas.

## Alcohol advertisements

As shown in Table 2, over one half (n=29, 56%) of sampled schools had at least one alcohol advertisement site within 500 metres. In total, 55 advertisements were identified. The majority (n=41, 75%) of these advertisements were from nearby off- or on-licences. Other advertisements comprised posters or flyers (n=3, 5%), standalone posters or stands (n=3, 5%), billboard advertising (n=2, 4%) and other types (n=6, 11%). The latter included product branding on a parked delivery truck, a parked company car, a flag on private property, portable fencing at an on-licence and on outdoor umbrellas at an on-licence.

Of the schools with an advertisement site, most (n=19, 66%) had one advertisement site in the radius. The mean number of advertisement sites, excluding schools with no advertisements, was 1.9 (Standard Deviation [SD] 1.7, range 1–8) (Table 3). However, almost 30% of schools with any advertisement site (n=8, 28%) had between two to four advertisement sites within the radius, and

seven percent (n=2) had five or more advertisement sites within the radius. The greatest number of separate advertisement sites within one school radius was eight advertisement sites within 500 metres of a Central Auckland primary school.

For the alcohol advertisement sites observed (n=55), over three quarters were located more than 200 metres from the school. Four advertisement sites (7%) were within 0–50 metres, three (5%) within 51–100 metres, six (11%) within 101–200 metres, 30 (55%) within 201–400 metres and 12 (22%) within 401–500 metres. The closest proximities of an alcohol advertisement site were nine and 22 metres. Three schools had advertisement sites within 50 metres of an entry (representing 6% of all sampled schools), with one of these schools having two advertisement sites within 50 metres of an entry.

The school roll of the schools exposed to alcohol advertising in this study (n=16,505) represents 55.9% of the total school roll sampled.

**Table 1:** Characteristics of the school sample.

Schools	n (%)
<b>School level</b>	
Primary/intermediate	41 (79%)
Secondary	11 (21%)
<b>Urban/rural classification</b>	
Urban	9 (17%)
Rural	43 (83%)
<b>Decile</b>	
Low (1–3)	19 (37%)
Medium (4–7)	18 (35%)
High (8–10)	15 (29%)
<b>Region</b>	
North Auckland	16 (31%)
Central Auckland	12 (23%)
West Auckland	12 (23%)
South Auckland	12 (23%)

**Table 2:** Prevalence and proximity to alcohol advertisement site(s).

<b>Among all schools (n=52)</b>	<b>n (%)</b>
<b>Alcohol advertisements within 500m</b>	
No alcohol advertisement	23 (44%)
One alcohol advertisement	19 (37%)
Two–three alcohol advertisements	6 (12%)
Four–five alcohol advertisements	2 (4%)
Six or more alcohol advertisements	2 (4%)
<b>Any alcohol advertisements, by region (row percentage)</b>	
North Auckland	11 (69%)
Central Auckland	8 (67%)
West Auckland	5 (42%)
South Auckland	5 (42%)
<b>Any alcohol advertisement, by decile (row percentage)</b>	
Low	12 (63%)
Medium	9 (50%)
High	8 (53%)

**Table 3:** Prevalence and proximity to alcohol advertisement site(s) among schools with a nearby advertisement site (n=29).

<b>Measure</b>	
<b>Average number of advertisements (SD)</b>	<b>1.9 (1.7)</b>
<b>Distance (metres) to nearest advertisement</b>	
Average, total (SD)	283 (156)
Average, by decile (SD)	
Low-decile	334 (133)
Medium-decile	199 (143)
High-decile	301 (178)
<b>Any alcohol advertisement(s) within 300m, by decile (row percentage)</b>	
Low-decile schools	5 (42%)
Medium-decile schools	6 (67%)
High-decile schools	5 (63%)

### Advertisement sites by region

Of all 52 schools, the schools in Central Auckland had the highest proportion of the 55 advertisement sites (n=23, 42%), followed by the North (n=12, 22%) and South (n=12, 22%) regions.

Of all schools sampled, schools in North Auckland had the highest proportion of schools in the area having any alcohol advertisement sites within 500 metres (69%), followed by Central Auckland schools (67%), and West (42%) and South Auckland (42%) schools (Table 2). While West and South Auckland had the same proportion of schools with any advertisement sites, the average number of sites at South Auckland schools (2.4) was higher than that among West Auckland (1.6) schools.

### Advertisement sites by decile

Of all the advertisement sites (n=55), 45% of these were in medium-decile areas, 31% were in low-decile areas and 24% were in high-decile areas.

Of all schools sampled, low-decile schools had the highest proportion of schools having any alcohol advertising within 500 metres (63%), followed by high-decile schools (53%) and medium-decile schools (50%) (Table 2).

No significant differences were found in the prevalence of advertisement sites by school level, region, decile, or rural/urban status. No differences were found by school type in the total number of advertisement sites per school, the proximity of alcohol advertisements to the school, or the nearest distance from advertisement site to school. However, the sample size limited power to detect small differences.

### Advertisement sites by Auckland Unitary Plan zoning

Of all advertisement sites (n=55), 89% (n=49) were located in Business zones and 11% (n=6) were in Residential zones. Forty-four percent of the sites (n=24) were in either a Business – Local or Business – Neighbourhood Centre zoning. Twenty-four percent (n=13) were in a Business – Neighbourhood Centre zoning.

## Discussion

The aim of this study was to examine the prevalence and characteristics of alcohol advertising within a 5–10 minute walk of a sample of Auckland schools. In line with previous Aotearoa New Zealand studies,<sup>22,30–33</sup> these results indicate that a substantial number of children and young

people are at risk of regular and repeated exposure to alcohol advertising in their built environments. These findings demonstrate that alcohol advertisement sites can be at multiple locations near schools, both near the school grounds and up to 500 metres from school grounds. The prevalence of advertisement sites in this study is likely to be significantly under-estimated, given high school students in Aotearoa New Zealand have been shown to travel kilometres to their school.<sup>34</sup>

The finding that low-decile schools were the most likely to have alcohol advertisement sites is consistent with similar findings that children living in deprived neighbourhoods are inequitably affected by alcohol advertising.<sup>22</sup> The unequal distribution of alcohol outlets in Aotearoa New Zealand is well-established.<sup>35</sup> However, more advertisement sites were found surrounding medium-decile schools, followed by low-decile and high-decile schools. This may reflect many medium-decile schools being in urban, commercial areas. While a larger sample size is required to test statistical significance, the results do point towards children and young people living in areas of high socio-economic deprivation as likely to have greater exposure to harmful advertising. This exposure, in turn, may exacerbate inequities in alcohol use and harm that is disproportionately experienced by low-income communities.

Off- and on-licence shop frontage comprised a considerable proportion of alcohol advertisement sites. Of the schools sampled in this study, only one off-licence had no alcohol advertising on its exterior. This mirrors findings from other studies that show the association between off-licence density and children's exposure to alcohol advertising<sup>31,32</sup> and the significant role that shop frontage plays in the overall mix of alcohol advertising exposures to children.<sup>30</sup> Exposure to alcohol advertising at outlets serves to normalise alcohol use, with the effects of advertising working subliminally without cognitive processing.<sup>36</sup> Further, the brand livery of many off-licence outlets is brightly coloured, attracting attention. This further harms children and young people who might walk past these sites to or from school.

As mentioned previously, Auckland has a Signs Bylaw<sup>27</sup> that includes rules around the proportion of shop frontage that can be used for advertising and the number of advertisements that are permitted within five metres. However, previous research has found poor compliance to bylaw requirements.<sup>37,38</sup> More comprehensive and legislative measures to restrict alcohol signage

are necessary, together with active enforcement to protect children and young people from advertising at off-licences.

The majority of alcohol advertisement sites were located in Business zoned areas, and almost half (44%) were located in either Business – Local or Business – Neighbourhood Centre zoned areas. Given that the Auckland Unitary Plan has identified Neighbourhood Centre zones as particularly important for preserving health-promoting and aesthetic features,<sup>39</sup> at a minimum, signs bylaws must prohibit alcohol advertising in these areas, as well as on Residential zoned land.

In this study, two billboards near schools showed alcohol advertisements. Most notably, a billboard for a brewery was situated 22 metres from the entrance of a secondary school. This is not the first alcohol-related billboard to be in close proximity to a school, despite the voluntary ASA guidelines in place.<sup>40,41</sup> No statutory rules currently prohibit alcohol advertising on billboards, whether near schools or in general. Yet, a recent Aotearoa New Zealand study found that alcohol advertisements were over-represented on billboards in Wellington, possibly reflecting the alcohol industry's interest in billboards as key marketing spaces.<sup>23</sup>

However, in 2022, for the first time, a resource consent application for two digital billboards in Māngere, Auckland was granted with the condition of no advertising permitted by alcohol brands, products, or companies with the primary purpose of manufacturing or selling alcohol. Conditions such as these are increasingly important, given the ineffective nature of the self-regulatory code for alcohol advertisers,<sup>42</sup> and the mounting evidence that billboards near schools show alcohol advertising.

The current regime for alcohol advertising in Aotearoa New Zealand has been ceded to industry self-regulation through the ASA.<sup>28</sup> While the ASA states that only adult audiences should be targeted, and that there should be no alcohol advertisements within a 300-metre sightline of the main entrance to a primary, intermediate or secondary school, this study found alcohol advertising within this boundary. This suggests that, despite the ASA standard, children and young people may be exposed to alcohol advertising near schools through a number of different advertising media. This highlights the urgent need for comprehensive action to regulate alcohol advertising and marketing, as recommended by the Law Commission in 2010,<sup>43</sup> the Ministerial Forum on Alcohol

Advertising and Sponsorship in 2014<sup>44</sup> and the Mental Health and Addiction Inquiry in 2018.<sup>45</sup> Effective regulation of alcohol advertising would mirror the approach in the *Smokefree Environments and Regulated Products Act 1990* that prohibits the advertising of tobacco and vaping brands and products.<sup>46</sup>

Local government also has a role to reduce harmful sites of alcohol advertising. Options are available via conditions in local alcohol policies and/or through utilising other mechanisms to prohibit external advertising at licensed premises. Territorial Authorities must be empowered, via an amendment to the *Sale and Supply of Alcohol Act 2012*, to specifically control alcohol-related signage via bylaws (akin to provisions in the *Prostitution Reform Act 2003* regarding local government powers to control the advertising of commercial sexual services).

Practice notes from District Licensing Committees (released to guide the Committee's approach to granting and renewing alcohol licences) are a possible mechanism for local governments. A second option may be to develop, or increase active enforcement of, a Signs Bylaw. For example, in October 2022 the Auckland District Licensing Committee released a practice note on external signage that prohibited external alcohol advertising on all alcohol licences. However, this practice note was revised in March 2023<sup>47</sup> following information received from a licensing consultant and feedback from the alcohol industry (12 April 2023, information obtained from the District Licensing Committee by *Official Information Act*). Now, it applies to all licences unless there is a valid reason for it not to, and among the conditions are measures that will prohibit alcohol-related lifestyle or branding comprising greater than 25% of the façade exterior. It also prohibits pricing advertising on the exterior of premises, as well as alcohol product advertising on external sandwich boards and bollard covers. The Committee may choose to impose greater restrictions where the licence is near sensitive sites, including schools. While this may reduce the quantity of alcohol advertising that children may be exposed to, it is unlikely to eliminate all exposures.

This study has a number of limitations. Firstly, the small sample size limits the generalisability and interpretation of findings. A broader research study with a larger sample size should follow this preliminary study to further quantify alcohol advertising near schools and, in particular,

examine ethnic inequities in advertising prevalence. Secondly, as the study was undertaken in Auckland where there are a number of existing controls and regulations, the results may not be applicable to other Territorial Authorities. For example, Auckland Transport has an advertising policy that prohibits alcohol advertising on public transport infrastructure. Further, the lower density of off-licences in the Licensing Trust area in West Auckland<sup>48</sup> may have resulted in fewer advertisement sites identified, limiting further generalisability of findings from this study to non-Trust areas. Thirdly, the 500-metre distance threshold may not be applicable for rural schools, as children and young people are likely to travel much further to reach school. Finally, this study was completed over the summer period. It is likely that there are seasonal differences in alcohol advertising (i.e., higher in summer months). While schools are often closed during

this period, local children are likely to continue to be exposed via local travel and attending school holiday programmes.

## Conclusion

While research in Aotearoa New Zealand suggests that children and young people are widely exposed to alcohol advertising in their built environments, this study is the first step towards quantifying advertisement sites near schools. The current context offers few protections, is variable across local governments and is insufficient to reduce sites of alcohol advertising. Given the proven harm to children and young people from alcohol use and the causal link with alcohol advertising exposure and consumption, urgent legislative action is required to reduce inequities in harm and empower local bodies to protect vulnerable populations.

**COMPETING INTERESTS**

All authors declare that they have no competing interests.

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**REFERENCES**

- Crossin R, Cleland L, Wilkins C, et al. The New Zealand drug harms ranking study: A multi-criteria decision analysis. *J Psychopharmacol*. 2023;37(9):891-903. doi: 10.1177/02698811231182012.
- Rehm J, Gmel GE Sr, Gmel G, et al. The relationship between different dimensions of alcohol use and the burden of disease-an update. *Addiction*. 2017 Jun;112(6):968-1001. doi: 10.1111/add.13757.
- Connor J. Alcohol consumption as a cause of cancer. *Addiction*. 2017 Feb;112(2):222-228. doi: 10.1111/add.13477.
- Institute for Health Metrics and Evaluation (IHME). GBD Compare Data Visualization 2019, New Zealand [Internet]. Seattle: University of Washington; 2022 [cited 2022 Mar 31]. Available from: <https://www.healthdata.org/data-visualization/gbd-compare>.
- Manatū Hauora – Ministry of Health. Annual Update of Key Results 2021/22: New Zealand Health Survey [Internet]. Wellington: Manatū Hauora – Ministry of Health; 2022 [cited 2022 Nov 20]. Available from: [https://minhealthnz.shinyapps.io/nz-health-survey-2021-22-annual-data-explorer/\\_w\\_c84fd317/#!/home](https://minhealthnz.shinyapps.io/nz-health-survey-2021-22-annual-data-explorer/_w_c84fd317/#!/home).
- Silins E, Fergusson DM, Patton GC, et al. Adolescent substance use and educational attainment: An integrative data analysis comparing cannabis and alcohol from three Australasian cohorts. *Drug Alcohol Depend*. 2015 Nov;156:90-96. doi: 10.1016/j.drugalcdep.2015.08.034.
- Boden JM, Fergusson DM. The Short- and Long-Term Consequences of Adolescent Alcohol Use. In: Saunders JB, Rey JM, editors. *Young People and Alcohol: Impact, Policy, Prevention, Treatment*. Chichester (UK): John Wiley & Sons, Ltd; 2014. p.32-44.
- Boden JM, Fergusson DM, Horwood LJ. Alcohol and STI risk: Evidence from a New Zealand longitudinal birth cohort. *Drug Alcohol Depend*. 2011 Jan;113(2-3):200-206. doi: 10.1016/j.drugalcdep.2010.08.005.
- Wells JE, Horwood LJ, Fergusson DM. Drinking patterns in mid-adolescence and psychosocial outcomes in late adolescence and early adulthood. *Addiction*. 2004 Dec;99(12):1529-41. doi: 10.1111/j.1360-0443.2004.00918.x.
- Fergusson DM, Boden JM, Horwood LJ. Tests of causal links between alcohol abuse or dependence and major depression. *Arch Gen Psychiatry*. 2009 Mar;66(3):260-6. doi: 10.1001/archgenpsychiatry.2008.543.
- De Bellis MD, Narasimhan A, Thatcher DL, et al. Prefrontal cortex, thalamus, and cerebellar volumes in adolescents and young adults with adolescent-onset alcohol use disorders and comorbid mental disorders. *Alcohol Clin Exp Res*. 2005 Sep;29(9):1590-600. doi: 10.1097/01.alc.0000179368.87886.76.
- Johnson CA, Xiao L, Palmer P, et al. Affective decision-making deficits, linked to a dysfunctional ventromedial prefrontal cortex, revealed in 10th grade Chinese adolescent binge drinkers. *Neuropsychologia*. 2008 Jan;46(2):714-26. doi: 10.1016/j.neuropsychologia.2007.09.012.
- Nagel BJ, Schweinsburg AD, Phan V, Tapert SF. Reduced hippocampal volume among adolescents with alcohol use disorders without psychiatric comorbidity. *Psychiatry Res*. 2005 Aug;139(3):181-90. doi: 10.1016/j.psychresns.2005.05.008.
- Schweinsburg AD, McQueeney T, Nagel BJ, et al. A preliminary study of functional magnetic resonance imaging response during verbal encoding among adolescent binge drinkers. *Alcohol*. 2010 Feb;44(1):111-7. doi: 10.1016/j.alcohol.2009.09.032.
- Tapert SF, Schweinsburg AD, Barlett VC, et al. Blood oxygen level dependent response and spatial working memory in adolescents with alcohol use disorders. *Alcohol Clin Exp Res*. 2004 Oct;28(10):1577-86. doi: 10.1097/01.alc.0000141812.81234.a6.
- Nguyen-Louie TT, Tracas A, Squeglia LM, et al. Learning and memory in adolescent moderate, binge, and extreme-binge drinkers. *Alcohol Clin Exp Res*. 2016 Sep;40(9):1895-904. doi: 10.1111/acer.13160.
- Rapsey CM, Wells JE, Bharat MC, et al. Transitions through stages of alcohol use, use disorder and remission: Findings from Te Rau Hinengaro, The New Zealand Mental Health Survey. *Alcohol Alcohol*.

- 2019 Jan;54(1):87-96. doi: 10.1093/alcalc/agy069.
18. Wilcox BL, Kunkel D, Cantor J, et al. Report of the APA Task Force on Advertising and Children: (539692009-001). American Psychological Association. 2004 Jan. doi: 10.1037/e539692009-001.
  19. Sargent JD, Babor TF. The relationship between exposure to alcohol marketing and underage drinking is causal. *J Stud Alcohol Drugs Suppl.* 2020 Mar;Suppl 19(Suppl 19):113-124. doi: 10.15288/jsads.2020.s19.113.
  20. Anderson P, de Bruijn A, Angus K, et al. Impact of Alcohol Advertising and Media Exposure on Adolescent Alcohol Use: A Systematic Review of Longitudinal Studies. *Alcohol Alcohol.* 2009 May-Jun;44(3):229-43. doi: 10.1093/alcalc/agn115.
  21. Jernigan D, Noel J, Landon J, et al. Alcohol marketing and youth alcohol consumption: a systematic review of longitudinal studies published since 2008. *Addiction.* 2017 Jan;112 Suppl 1:7-20. doi: 10.1111/add.13591.
  22. Chambers T, Stanley J, Signal L, et al. Quantifying the nature and extent of children's real-time exposure to alcohol marketing in their everyday lives using wearable cameras: Children's exposure via a range of media in a range of key places. *Alcohol Alcohol.* 2018 Sep;53(5):626-633. doi: 10.1093/alcalc/agy053.
  23. Chambers T, Royds T, Jones AC. The nature and extent of outdoor alcohol marketing in Wellington, New Zealand: a longitudinal audit and spatio-temporal analysis of outdoor alcohol marketing. *Alcohol Alcohol.* 2023 May;agad030. doi: 10.1093/alcalc/agad030.
  24. UNICEF. Convention on the Rights of the Child text [Internet]. New York: UNICEF;2023 [cited 2023 Apr 20]. Available from: <https://www.unicef.org/child-rights-convention/convention-text>.
  25. Child and Youth Wellbeing. Child and Youth Wellbeing Strategy [Internet]. Wellington: New Zealand Government; 2019 [cited 2023 Mar 27]. Available from: <https://childyouthwellbeing.govt.nz/sites/default/files/2019-08/child-youth-wellbeing-strategy-2019.pdf>.
  26. Auckland Transport. Advertising policy [Internet]. Auckland: Auckland Transport; 2021 [cited 2023 May 4]. Available from: <https://at.govt.nz/about-us/policies/advertising-policy/>.
  27. Auckland Council, Auckland Transport. Te Ture ā-Rohe mo nga Tohu Signs Bylaw 2022 [Internet]. Auckland: Auckland Council, Auckland Transport; 2022 [cited 2023 Mar 29]. Available from: <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/bylaws/docssignsbylawcontrols/signs-bylaw-2022-excluding-controls-operative.pdf>.
  28. Advertising Standards Authority. Alcohol Advertising and Promotion Code [Internet]. Wellington: Advertising Standards Authority; 2020 [cited 2023 Apr 3]. Available from: <https://www.asa.co.nz/codes/codes/alcohol-advertising-and-promotion-code/>.
  29. Statistics New Zealand. Stats NZ urban-rural geographies [Internet]. Wellington: Statistics New Zealand; 2021 [cited 2023 May 4]. Available from: <https://maps-by-statsnz.hub.arcgis.com/apps/f20b8344d56d44eeab51539c1a816d5e/explore>.
  30. Chambers T, Stanley J, Pearson AL, et al. Quantifying Children's Non-Supermarket Exposure to Alcohol Marketing via Product Packaging Using Wearable Cameras. *J Stud Alcohol Drugs.* 2019 Mar;80(2):158-166.
  31. Chambers T, Pearson AL, Kawachi I, et al. Children's home and school neighbourhood exposure to alcohol marketing: Using wearable camera and GPS data to directly examine the link between retailer availability and visual exposure to marketing. *Health Place.* 2018 Nov;54:102-109. doi: 10.1016/j.healthplace.2018.09.012.
  32. Liu W, Gage R, Park H, et al. The distribution of harmful product marketing in public outdoor spaces and the effectiveness of marketing bans. *Health Place.* 2022 Jul;76:102861. doi: 10.1016/j.healthplace.2022.102861.
  33. Watkins L, Gage R, Smith M, et al. An objective assessment of children's exposure to brand marketing in New Zealand (Kids'Cam): a cross-sectional study. *Lancet Planet Health.* 2022 Feb;6(2):e132-e138. doi: 10.1016/S2542-5196(21)00290-4.
  34. Devonport A. The impact of secondary school enrolment schemes on school desirability, academic achievement and transport [master's thesis on the Internet]. Christchurch: University of Canterbury; 2017 [cited 2023 May 18]. Available from: <https://ir.canterbury.ac.nz/server/api/core/bitstreams/669b75d8-ee16-49a8-b705-78307fc2105d/content>.
  35. Hobbs M, Marek L, Wiki J, et al. Close proximity to alcohol outlets is associated with increased crime and hazardous drinking: Pooled nationally representative data from New Zealand. *Health Place.* 2020 Sep;65:102397. doi: 10.1016/j.healthplace.2020.102397.
  36. Zerhouni O, Bègue L, O'Brien KS. How alcohol advertising and sponsorship works: Effects through indirect measures. *Drug Alcohol Rev.* 2019

- May;38(4):391-398. doi: 10.1111/dar.12929.
37. Cowie N, Jackson N. An exploratory audit of off-licence compliance with the Auckland Council Signage Bylaw: Ōtara-Papatoetoe Local Board. Auckland: Alcohol Healthwatch; 2019 [cited 2023 Apr 3]. Available from: [http://www.ahw.org.nz/Portals/5/Resources/Documents-other/2019/AHW%20Signage%20Bylaw%20Compliance%20Report%20Otara-Papatoetoe%20June%202019\\_WEB.pdf](http://www.ahw.org.nz/Portals/5/Resources/Documents-other/2019/AHW%20Signage%20Bylaw%20Compliance%20Report%20Otara-Papatoetoe%20June%202019_WEB.pdf).
  38. Auckland Regional Public Health Service. Auckland Council Signage Bylaw 2015 Compliance Audit Summary [Internet]. Auckland: Auckland Regional Public Health Service; 2020 [cited 2023 Apr 3]. Available from: <https://www.adhb.health.nz/assets/Documents/OIA/2021/12-21/ARPHS-Sale-and-Supply-of-Alcohol-Letter-Attachment-2.pdf>.
  39. Auckland Council. Business - section 32 evaluation for the Proposed Auckland Unitary Plan [Internet]. Auckland: Auckland Council; 2013 [cited 2021 Oct 20]. Available from: <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/unitary-plan/history-unitary-plan/documentssection32reportproposedaup/2-4-business.pdf>.
  40. Milne J. Liquor companies flout own codes on targeting children and sexualised ads. Newsroom [Internet]. 2021 Feb 22 [cited 2023 May 4]. Available from: <https://www.newsroom.co.nz/page/liquor-companies-flout-own-advert-rules>
  41. Alcohol Advertising Standards Complaint Board. ASA Decision: Complaint number 23/054 [Internet]. Wellington: Alcohol Advertising Standards; 2023 [cited 2023 Apr 4]. Available from: <https://cdn.asa.co.nz/backend/documents/2023/03/29/23054.pdf>.
  42. Jackson N, Cowie N, Robinson A. Ineffective, meaningless, inequitable: analysis of complaints to a voluntary alcohol advertising code. N Z Med J. 2021 Feb;134(1530):118-122.
  43. New Zealand Law Commission. Alcohol in our Lives: Curbing the Harm [Internet]. Wellington: Law Commission, 2010 [cited 2023 Apr 4]. Available from: <https://www.lawcom.govt.nz/sites/default/files/projectAvailableFormats/NZLC%20R114.pdf>.
  44. Manatū Hauora – Ministry of Health. Ministerial Forum on Alcohol Advertising and Sponsorship: Recommendations on alcohol advertising and sponsorship [Internet]. Wellington: Manatū Hauora – Ministry of Health; 2014 [cited 2023 Apr 4]. Available from: <https://www.health.govt.nz/publication/ministerial-forum-alcohol-advertising>.
  45. Mental Health and Addiction Inquiry. He Ara Oranga: Report of the Government Inquiry into mental health and addiction [Internet]. Wellington: Government Inquiry into Mental Health and Addiction; 2018 [cited 2023 Apr 4]. Available from: <https://mentalhealth.inquiry.govt.nz/assets/Summary-reports/He-Ara-Oranga.pdf>.
  46. *Smokefree Environments and Regulated Products (Vaping) Amendment Act 2020 (NZ)*.
  47. Auckland Council. Auckland District Licencing Committee Practice Note: Off-licence premises external advertising [Internet]. Auckland: Auckland Council; 2023 [cited 2023 Mar 14]. Available from: <https://www.aucklandcouncil.govt.nz/licences-regulations/business-licences/alcohol-licences-fines/docsdlcpracticenotes/dlc-practice-note-external-signage.pdf>.
  48. Auckland Regional Public Health Service. Does Auckland Need More Alcohol Outlets? [Internet]. Auckland: Auckland Regional Public Health Service; 2018 [cited 2023 Apr 6]. Available from: [https://www.arphs.health.nz/assets/Uploads/Resources/Alcohol/ARPHS\\_Alcohol-Resource\\_FINAL.pdf](https://www.arphs.health.nz/assets/Uploads/Resources/Alcohol/ARPHS_Alcohol-Resource_FINAL.pdf).

## Appendix 1: Copy of the data collection form used by data collectors

### Alcohol advertising at schools

Where an answer is left blank, it will be assumed the question was not present/relevant/applicable.

#### Guidelines for the audit:

- Walk the radius where possible (we suggest walking through busier streets).
- Stay within the radius provided. Audit will be 500m from the boundaries of the school.
- Audit all alcohol advertising only (included—poster advertising Heineken. Not included—passer-by drinking Heineken).
  - Alcohol advertising should include alcohol product advertising.
  - Alcohol advertising should include advertising by on- and off-licences, including licensing trusts.
  - Alcohol advertising should include images/visuals of individual/s consuming alcohol, even if featured as part of a non-alcohol ad.
  - Alcohol advertising should include zero percent alcohol products.
- Audit all streets and public areas (e.g., parks) within the radius.
- Audit school grounds where possible (some schools have known billboards on the grounds).
- Take picture and note frequency of advertisements.
- For digital billboards, please sit through the whole roll-out of ads.
- Note the coordinates through Google Maps or screenshot location of each advertisement.

What school is this audit for?

Surveillance list (photo attachment area is at the end of the Jotform)

	Alcohol ad present	Quantity	Location note	Other note
<b>Bus stop</b>				
<b>Buses</b>				
<b>Posters or flyers</b>				
<b>Standalone posters/stands</b>				
<b>Store frontage or sides</b>				
<b>Billboard</b>				
<b>Anything else/general environment</b>				

Anything else?

Please upload any relevant photographs or videos here, or email separately to [sarah@ahw.org.nz](mailto:sarah@ahw.org.nz). By uploading or sending through an image or video, you are allowing us to use your image or video in this research and subsequent publications.

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