FOOD STANDARDS Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

Alcohol Labelling Consumer Research Report

Consumer responses to sugar claims, carbohydrate claims, and nutrition information panels on alcoholic beverages

August 2024

Executive summary

Food Standards Australia New Zealand (FSANZ) undertook consumer research to examine consumer responses to sugar claims, carbohydrate claims, and nutrition information panels (NIPs) on alcoholic beverages. The research also examined whether consistency in the format of energy content information on alcoholic beverages affects consumers' actual or perceived ability to use the energy content information.

Methods

An online randomised controlled trial was undertaken with a nationally representative sample of 2,553 Australian and New Zealand consumers of beer and ready-to-drink premixed spirits (RTDs). Participants were randomly allocated to view images of alcoholic beverages with either sugar claims, carbohydrate claims, NIPs only, energy statements only, or no nutrition information on the labels and were asked to rate them on various attributes (e.g. healthfulness on a scale from '1 = not healthy at all' to '7 = very healthy'). All beverages labelled with nutrition information had the same alcohol and energy content regardless of the presence or absence of claims.

Additionally, at the end of the survey, all participants were required to rank the energy content of four different types of alcoholic beverages in order from lowest to highest. There were no claims on any of the beverages. Participants were randomly allocated to view the beverages with energy content information displayed in a consistent format (energy statements on all four beverages) or an inconsistent format (energy statements on two beverages, and NIPs on the other two beverages). Participants were also asked to rate how easy or difficult they found it to complete this task.

Key findings

Effects of sugar and carbohydrate claims on alcoholic beverages

Sugar and carbohydrate claims have no effect[1] on behavioural measures such as consumers' consumption intentions or likelihood of modifying their food intake or physical activity. That is, the presence of sugar or carbohydrate claims do not change the number of alcoholic beverages consumers intend to consume. Neither do they make consumers more or less likely to modify their food intake or physical activity to compensate for the energy from alcoholic beverages. Sugar and carbohydrate claims also have no effect on consumers' perceived alcohol content of the beverages.

Sugar and carbohydrate claims cause consumers to make some inaccurate assumptions about alcoholic beverages. That is, alcoholic beverages with claims are seen as being healthier, less harmful to health, and lower in energy compared to the same alcoholic beverage with no claim. These effects are small. Claims also reduce

[1] Throughout this report, 'no effect' refers to no statistically significant effect.

consumers' understanding that an alcohol-free alternative is better for weight management.

Overall, consumers do not perceive alcoholic beverages as being healthy, unharmful to health, or low in energy regardless of the presence or absence of claims. Rather, consumers rate alcoholic beverages both with and without claims as being somewhere in the middle of the scales; neither healthy nor unhealthy, harmful nor unharmful to health, low nor high in energy.

Effects of NIPs on alcoholic beverages

NIPs have no effect on behavioural measures such as consumers' consumption intentions or likelihood of modifying their food intake or physical activity. That is, the presence of NIPs do not change the number of alcoholic beverages consumers intend to consume. Neither do they make consumers more or less likely to modify their food intake or physical activity to compensate for the energy from alcoholic beverages. NIPs also have no effect on consumers' perceived alcohol content of the beverages. In contrast to claim effects, NIPs have no effect on consumers' understanding that an alcohol-free alternative is better for weight management.

NIPs cause consumers to make some inaccurate assumptions about alcoholic beverages. That is, alcoholic beverages with NIPs are seen as being healthier, less harmful to health, and lower in energy compared to the same alcoholic beverage with no NIP. Similar to claim effects, the effects are small.

Overall, consumers do not perceive alcoholic beverages to be healthy, low in energy or unharmful to health regardless of the presence or absence of NIPs. Rather, similar to claims, consumers rate alcoholic beverages both with and without NIPs as being somewhere in the middle of the scales; neither healthy nor unhealthy, harmful nor unharmful to health, low nor high in energy.

Consistency in the format of energy content information

Consistency in the format of energy content information has no effect on consumers' ability to rank different types of alcoholic beverages by their energy content.

However, consumers perceive this to be an easier task when the format of the energy content information is presented in a consistent format across different types of alcoholic beverages (as opposed to in an inconsistent format). This effect on consumers' perceived ease of use is small.

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Introduction

Nutrition content claims on alcoholic beverages

The Australia New Zealand Food Standards Code (the Code) prohibits nutrition content claims to be made about food and beverages that contain more than 1.15% alcohol by volume (ABV), other than nutrition content claims about carbohydrate (e.g. ‘low carb’), energy or gluten content.

As sugar is a component of carbohydrate, the permission to make carbohydrate claims on alcoholic beverages has been interpreted as a permission to also make sugar claims (e.g. ‘low sugar’). Consequently, both carbohydrate and sugar claims are being made about alcoholic beverages for sale in Australia and New Zealand.

Nutrition labelling requirements on alcoholic beverages

The Code requires most packaged foods to be labelled with a nutrition information panel (NIP) in a prescribed format (below), with a declaration of average energy content expressed in kilojoules (or in both kilojoules and kilocalories), as well as the average quantity of six nutrients (protein, fat, saturated fat, carbohydrate, sugars, sodium).

NUTRITION INFORMATION Servings per package: (insert number of servings) Serving size: g (or mL or other units as appropriate)		
	Quantity per serving	Quantity per 100 g (or 100 mL)
Energy	kJ (Cal)	kJ (Cal)
Protein	g	g
Fat, total	g	g
—saturated	g	g
Carbohydrate	g	g
—sugars	g	g
Sodium	mg (mmol)	mg (mmol)
(insert any other nutrient or biologically active substance to be declared)	g, mg, µg (or other units as appropriate)	g, mg, µg (or other units as appropriate)

Standardised alcoholic beverages[2] and beverages containing no less than 0.5% ABV that are not standardised alcoholic beverages are exempt from the requirement to be labelled with a NIP[3] unless a nutrition content claim is made about the beverage, in which case a NIP must be provided. The Code also permits the voluntary provision of a NIP on alcoholic beverages.

Proposals to change alcohol labelling requirements

Proposal P1049 – Carbohydrate and sugar claims on alcoholic beverages

In November 2017, food ministers raised concerns about sugar claims on alcoholic beverages, specifically that '% sugar free' claims are misleading and alcohol is being promoted as a healthier choice for consumers when public health advice is to limit alcohol intake. As a result, FSANZ prepared Proposal P1049 to consider clarifying requirements in the Code for making claims about carbohydrate content and the components of carbohydrate (such as sugar).

To inform the assessment of this proposal, FSANZ undertook a rapid systematic review to examine the available evidence on consumer value, perceptions and behaviours in response to carbohydrate and sugar claims on alcoholic beverages (FSANZ, 2023a). A general conclusion of the systematic review was that the current available evidence is very limited.

In December 2023, food ministers asked FSANZ to undertake further consumer research to better understand whether carbohydrate and sugar claims on alcoholic beverages are misleading consumers and influencing purchasing decisions.

Proposal P1059 – Energy labelling on alcoholic beverages

In 2019, FSANZ prepared Proposal P1059 to consider amending the Code to require energy content information on alcoholic beverages. In January 2023, FSANZ released a Call for Submissions (CFS) proposing to amend the Code to mandate the declaration of energy content information on the label of alcoholic beverages in a prescribed format. Requiring an energy statement was considered more appropriate than a NIP, given most alcoholic beverages are of minor nutritional significance, except for their energy and alcohol content.

In November 2023, FSANZ completed consumer research to inform the format for energy labelling on alcoholic beverages (FSANZ, 2023b). The research showed that the following energy statement best enables consumer understanding of the energy

[2] 'Standardised alcoholic beverage' is defined in section 1.1.2–2 of the Code as beer, brandy, cider, fruit wine, fruit wine product, liqueur, mead, perry, spirit, vegetable wine, vegetable wine product, wine or wine product. These products are all defined in section 1.1.2–3 of the Code.

[3] This exemption occurred when mandatory nutrition labelling was introduced in 2008. The basis for the exemption was because most alcoholic beverages are of minor nutritional significance, except for their energy and alcohol content, and it was considered the presence of a NIP could mislead consumers about the nutritional value of alcoholic beverages. It was noted that the relationship between energy and alcohol may need to be addressed through education.

content information, while mitigating any negative unintended consequences (such as reducing consumer understanding of standard drinks information[4]):

ENERGY INFORMATION Servings per package: (x) Serving size: mL (x standard drinks)		
	Quantity per serving	Quantity per 100 mL
Energy	kJ (Cal)	kJ (Cal)

This format is generally consistent with the format for NIPs, with the exception that only energy content information is provided (as opposed to energy + six other nutrients), and the addition of standard drinks information (i.e. the number of standard drinks equivalent to a serving size).

Proposal P1059 is also considering the consistency of energy labelling across alcoholic beverages and whether the current permission for the voluntary provision of a NIP should remain.

Research Objectives

The purpose of this research was to examine consumer responses to sugar and carbohydrate claims on alcoholic beverages to inform Proposal P1049. Additionally, the research sought to examine consumer responses to NIPs on alcoholic beverages to inform Proposal P1059 (see above). The research was necessary to address evidence gaps as outlined below.

Evidence gaps

Consumer responses to sugar/carbohydrate claims on alcoholic beverages

There is very limited research available that has examined consumer responses to sugar and carbohydrate claims on alcoholic beverages (FSANZ, 2023a). Only one study has examined consumer responses to sugar or carbohydrate claims on alcoholic beverages using an experimental design (Cao et al. 2022). In this study, young female adults were randomly allocated to view ready-to-drink premixed spirits (RTDs) or ciders with either sugar claims (e.g. ‘<1 g sugar’, ’zero sugar’, ’sugar free’) or no claims. All beverages also contained identical alcohol content information (4.5% ABV, 1.2 standard drinks). However, none of the beverages contained a NIP (which is currently required on beverages that make a claim) or nutrition information in any other format. After viewing a front-of-pack image of the alcoholic beverage with a caption stating the sugar claim (for those in the sugar claim condition) and

[4] The standard drink measure is used in relation to recommendations about alcohol consumption and assists consumers to monitor their alcohol intake. A standard drink in Australia and New Zealand contains 10 grams of pure alcohol, regardless of the type of alcoholic beverage or how it is served. Therefore a typical serving may be more or less than a standard drink, depending on the alcohol content.

alcohol content, participants rated the beverages on various attributes. These attributes included: perceived healthiness; perceived suitability as a part of a healthy diet; perceived helpfulness for weight management; perceived harmfulness to health; perceived sugar content; perceived kilojoule/calorie content; and perceived alcohol content. All attributes were rated on a scale from 1 (very low) to 7 (very high). In addition to rating the beverages on various attributes, participants also indicated how likely they would be to consume the beverage on a scale from 1 (strongly disagree) to 7 (strongly agree), and how many serves of the beverage they would consume if they were available to them over the next two weeks. Participants were also asked three questions that measured how likely they would be to compensate for the energy of the beverage by modifying their food intake or physical activity[5].

Compared to the participants who saw the beverages with no claims, participants who saw the beverages with the sugar claims rated the beverages as statistically significantly healthier, more suitable as a part of a healthy diet, better for weight management, less harmful to health, lower in sugar, and lower in kilojoules/calories than the participants who did not see the claim. However, it is not possible to determine from Cao et al.'s (2022) findings whether the claim caused participants to make inaccurate assumptions per se, as participants were not provided with nutrition information about the beverages, and it may be true that RTDs and ciders with sugar claims are in fact lower in energy and better for weight management than RTDs and ciders without claims. Furthermore, Cao et al.'s (2022) research is not generalisable to what Australian and New Zealand consumers would view in a real-world setting, as a NIP is currently required on all alcoholic beverages carrying a nutrition content claim. It is therefore unclear whether these effects would remain statistically significant if participants also viewed a NIP or energy content information about the beverages.

Nevertheless, Cao et al. (2022) did find that participants who saw the claims rated the beverages as statistically significantly lower in alcohol content than the participants who did not see the claims. This suggests that the presence of a claim may cause consumers to make inaccurate assumptions about the alcohol content of alcoholic beverages, despite provision of information to say otherwise (as both groups were provided with identical alcohol content information).

The sugar claims had no statistically significant effect on participants' intended level of alcohol intake (as measured by their rated likelihood of consuming that alcoholic beverage, or the number of drinks they intended to consume over a two week period). However, compared to participants who saw the beverages with no claims, participants who saw the beverages with the sugar claims were statistically significantly *less* likely to modify their food intake or physical activity to compensate for the energy from the alcoholic beverages. Although an increase in compensatory behaviours is not necessarily a desirable effect (as such compensatory behaviours are associated with eating disorders; Rahal et al. 2012), these findings do suggest

[5] The questions were: "If you drank this product the next time you were drinking alcohol, how likely are you to: a) Eat low calorie, low fat or low sugar foods in one or more meals to make up for the calories in this drink?; b) Exercise more than usual to make up for the calories in this drink; c) Eat less than usual in one or more meals to make up for the calories in this drink?" Responses were collapsed across the three questions to create a single measure of weight-conscious compensatory behaviours for each participant.

that sugar claims may encourage consumers to underestimate the contribution of alcoholic beverages to energy in the diet. However, as with the findings regarding consumer perceptions, it is unclear whether this behavioural effect would remain statistically significant if participants also viewed a NIP or energy content information about the beverages.

FSANZ's research (also a randomised controlled trial) extended on the research by Cao et al. (2022) by addressing its key limitations. That is, FSANZ's research broadened the sample to consumers in the general population (not just young female consumers). It also broadened the research to examine carbohydrate claims and beer (in addition to sugar claims and RTDs), given that sugar and carbohydrate claims are commonly made on both RTDs and beer (Barons et al. 2022; Haynes et al. 2022). Thirdly, in FSANZ's research, participants were provided with nutrition information (a NIP), as is currently required when a claim is made. Participants were also provided with energy content information in the control condition (i.e. when a claim was made), as the likely outcome of Proposal P1059 will be mandatory energy content information on all alcoholic beverages. Sugar and carbohydrate claims may have less potential to cause consumers to make inaccurate assumptions when energy content information is provided on all alcoholic beverages (Labiner-Wolfe et al. 2010).

Unlike Cao et al. (2022), the design of FSANZ's research allowed assessment of whether claims cause consumers to make inaccurate assumptions, given that participants were provided with identical energy content information regardless of whether a claim was present. The research therefore compared consumer responses to an alcoholic beverage where a claim is made vs. how they may respond to that identical alcoholic beverage where no claim is made.

Consumer responses to NIPs on alcoholic beverages

Evidence is required to determine whether providing nutrition information in different formats across alcoholic beverages affects consumers' ability to use that information. Evidence is also required to determine whether NIPs on alcoholic beverages cause consumers to make inaccurate assumptions about the general healthiness of alcoholic beverages, given that many values in the NIP may be zero (except for the energy content). This is a similar concern that has been raised in relation to the effects of sugar and carbohydrate claims. Only two studies have examined consumer responses to a NIP (or nutrition information similar to a NIP) on alcoholic beverages (Bui et al. 2008; Walker et al. 2019).

One experimental study based in the USA found that participants who saw a nutrition facts label[6] on alcoholic beverages had statistically significantly higher alcohol consumption intentions compared to participants who saw no nutrition information (Bui et al. 2008). However, this was a low quality study (FSANZ, 2021). Additionally, this study did not examine the effect of the labels on consumer perceptions about the healthiness of the alcoholic beverages.

[6] In this study, the nutrition facts label contained information on the calorie (i.e. energy), carbohydrate and fat content.

In a high quality experimental study from New Zealand, Walker et al. (2019) found that participants who saw a NIP on an alcoholic beverage had statistically significantly greater intentions to purchase that alcoholic beverage, compared to participants who saw no nutrition information. However, in contrast to Bui et al. (2008), the NIP had no statistically significant effect on participants' intentions to consume the alcoholic beverage. Furthermore, the effect of the NIP on purchase intentions found in Walker et al. (2019) cannot be explained by NIPs increasing healthiness perceptions, as there was no statistically significant difference between the two groups in perceived healthiness of the alcoholic beverage. Rather, the effect of the NIP on purchase intentions may be explained by the additional finding that participants perceived the NIP as more expensive (and therefore possibly more desirable) than no nutrition information.

On balance, there is no clear evidence from existing studies to suggest that a NIP on alcoholic beverages causes consumers to make inaccurate assumptions about the general healthiness of alcoholic beverages. Nevertheless, few studies have examined consumer responses to NIPs on alcoholic beverages, and none have done so using a representative sample of both Australian and New Zealand consumers. Furthermore, no studies have examined the importance of consistency in the format of nutrition labelling on alcoholic beverages. FSANZ's research therefore addressed these evidence gaps.

Research Questions

In response to the evidence gaps identified above, the current study was designed to answer the following research questions:

1. What is the effect of sugar and carbohydrate nutrition content claims on consumer perceptions of alcoholic beverages?
    - Do these claims cause consumers to make inaccurate assumptions about the energy content, alcohol content, general healthiness and/or harmfulness of alcoholic beverages?
2. What is the effect of sugar and carbohydrate nutrition content claims on consumers' behavioural intentions?
    - Do these claims cause consumers to modify their alcohol intake, exercising behaviour and/or consumption of other foods?
3. What is the effect of NIPs on consumers' perceptions of alcoholic beverages?
    - Do NIPs cause consumers to make inaccurate assumptions about the energy content, alcohol content, general healthiness and/or harmfulness of alcoholic beverages?
4. What is the effect of NIPs on consumers' behavioural intentions (alcohol intake, exercising behaviour, consumption of other foods)?
    - Do NIPs cause consumers to modify their alcohol intake, exercising behaviour and/or consumption of other foods?
5. Does consistency in the format of energy content information on alcoholic beverages:
    a. affect consumers' ability to accurately use the energy content information?
    b. affect consumers' perceptions regarding how easy or hard it is to use the energy content information

Methods

Design

The study consisted of an online, randomised controlled trial with a 5 (label type: A, B, C, D, E) x 2 (beverage type: beer, RTD) between-subjects design.

Participants were pseudo-randomly allocated to view one type of alcoholic beverage (bottles of beer or cans of RTD), with the prerequisite that they had consumed that type of beverage in the past year. Quotas were used to ensure approximate equal allocation to each type of beverage. Participants were then randomly allocated to view one of five labels. This meant that each participant viewed one label type on one type of alcoholic beverage. This resulted in a total of 10 different groups (5 types of labels multiplied by 2 types of beverages).

The five labels differed based on the type of claim provided (no claim, sugar claim, or carbohydrate claim), and the type of nutrition information provided (energy statement, NIP, or no nutrition information). Consistent with the energy statements, the NIPs had standard drink information incorporated (i.e. the number of standard drinks equivalent to a serving size). Although this information is not currently required on NIPs on alcoholic beverages, FSANZ's previous consumer research indicates that including this information helps consumers understand how a serving size relates to a standard drink (FSANZ, 2023b). The five different types of labels (Labels A, B, C, D and E) were as follows:

A. No claim, NIP (control 1 for claims)
B. No claim, energy statement (control 2 for claims)
C. Sugar claims, NIP
D. Carbohydrate claims, NIP
E. No claim, no nutrition information (control for NIPs)

Although the labels contained additional information to make them look realistic (see 'Stimuli' section below for further details), the only on-label information that differed among the five labelling groups was the presence vs. absence of a claim and type of nutrition information provided (if any), as described above.

In order to provide as much information as possible about the effects of claims on consumer perceptions and behavioural intentions (Research Questions 1 and 2), the above design utilised two different control conditions for claims (Labels A and B).

A strength of using Label A (no claim, NIP) as a control condition for Label C (sugar claims, NIP) and Label D (carbohydrate claims, NIP) is that it isolates the effects of claims on consumer perceptions and behaviours, given that the nutrition information is the same between these different labels. However, a limitation of using Label A as the control condition is that these results would only be generalisable to a context where NIPs are provided on all alcoholic beverages (i.e. even in the absence of a claim), which is currently not required, nor is it being considered under Proposal P1059.

A strength of using Label B (no claim, energy statement) as a control condition for Labels C and D is that it will produce results that are generalisable to a context where only an energy statement is provided on alcoholic beverages that do not have a claim (as is currently being considered under Proposal P1059). However, a limitation of using Label B as the control condition is that it does not allow clear isolation of the effects of claims, given that the type of nutrition information (NIP vs. energy statement) is also different between these different labels (not just the presence vs. absence of a claim).

Given the complementary strengths and limitations of both control conditions, both were incorporated in the research design to address Research Questions 1 and 2.

Finally, comparing Label A (no claim, NIP) to Label E (no claim, no nutritional information) isolates the effects of NIPs on consumer perceptions and behaviours (Research Questions 3 and 4).

In summary, the following five comparisons were made between the different labelling groups:

1. Label C vs. Label A – to test the effects of sugar claims if NIPs were on all alcoholic beverages
2. Label D vs. Label A – to test the effects of carbohydrate claims if NIPs were on all alcoholic beverages
3. Label C vs. Label B – to test the effects of sugar claims if energy statements were on all alcoholic beverages
4. Label D vs. Label B – to test the effects of carbohydrate claims if energy statements were on all alcoholic beverages
5. Label A vs. Label E – to test the effects of NIPs themselves.

There were no other planned comparisons.

Figure 1 depicts the 10 different groups, and the types of images that each group viewed (see ‘Stimuli’ below for further description of the images).

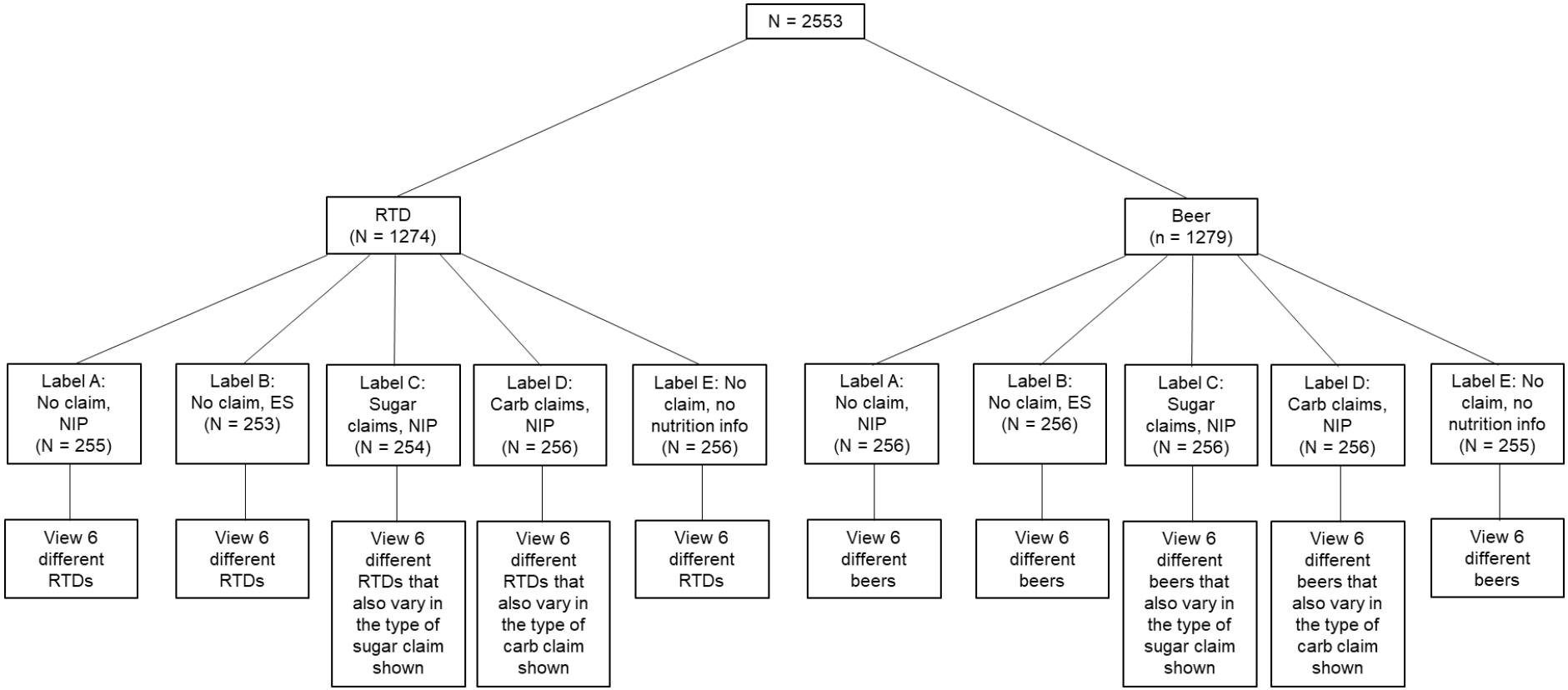


Figure 1. Diagram depicting the 10 different groups and the six different types of images that each group viewed.

Note: ES = energy statement; NIP = nutrition information panel

Stimuli

As previously described, participants were randomly allocated to one of 10 different groups (5 types of labels multiplied by 2 types of alcoholic beverages = 10 different groups).

Participants in each group viewed six different product images of their allocated beverage, in a random order. The six different product images varied in appearance and flavour to ensure that participants had a variety of different beer and RTD products to view. This was to minimise potential biases resulting from flavour or other visual preferences.

As shown in Figure 1, for participants in the sugar claim groups (Label C), the six different product images also varied in the type of sugar claim shown. Participants viewed three different types of sugar claims for their allocated beverage type. Given that participants viewed six different types of product images of their allocated beverage, each of the three types of sugar claims were shown twice (i.e. on two different product images). For participants in the RTD group, the three types of sugar claims were: 'low sugar', '2 g sugar', and 'no sugar'. For participants in the beer group, the three types of sugar claims were: '99.9% sugar free', 'zero sugar', and 'no sugar'. These types of claims were selected as they are the types of sugar claims that have been commonly observed on RTDs and beers respectively.

Participants in the carbohydrate claim groups (Label D) viewed six identical product images to those in the sugar claim groups, except that their products contained three different types of carbohydrate claims (rather than three different types of sugar claims). As with the three different types of sugar claims, each of the three different types of carbohydrate claims were shown twice (i.e. on two different product images). For participants in the RTD group, the three types of carbohydrate claims were: 'low carb', '2 g carbs', and 'zero carbs'. For participants in the beer group, the three types of carbohydrate claims were: 'low carb', 'lower in carbs (*60% less carbohydrate than regular beer)'[7], and 'zero carbs'. As with the sugar claims, these types of claims were selected as they are the types of carbohydrate claims that have been commonly observed on RTDs and beers respectively.

Participants in the other groups (Labels A, B and E) viewed six identical product images to those in the sugar and carbohydrate claim groups, but without any claims. Therefore, for participants in the other groups, the six different product images only varied in appearance and flavour (as opposed to both appearance, flavour and type of claim). The appearance and flavour combinations shown to these other groups were identical to the appearance and flavour combinations shown to those in the sugar and carbohydrate claim groups.

[7] Given that the 'lower in carbs' claim is a comparative claim, information was also provided about the reference food (60% less carbohydrate than regular beer), as required under the Code.

Given that each of the 10 groups viewed six different images, this resulted in a total of 60 different images.

All beverages contained the following information that is currently required on the label of alcoholic beverages: statement of alcohol content (%ABV), statement of the number of standard drinks per package, volume of the package, pregnancy warning label, ingredient list (RTDs only), name and address of the supplier ('made by an RTD company/brewed by a beer company' with fake contact information). All beverages also had the following information that is often included on the label of alcoholic beverages: best before date, barcode, Drinkwise logo[8], recycle logo. This information was included on the label to ensure that the beverages looked realistic. The information was identical across the 30 images of beer, and across the 30 images of RTDs, regardless of the type of label that participants were randomly allocated to.

Participants saw both front-of-pack and back-of-pack images for each of the six products. The sugar and carbohydrate claim was shown on the front-of-pack image (for those in the sugar and carbohydrate groups), and the nutrition information (NIP or energy statement) was shown on the back-of-pack image. To ensure the labelling information was legible, zoomed versions of each front and back label were provided next to the smaller images that showed the bottle or can. Figure 2 below shows an example of what one of the six product image sets looked like for the beer group.

Images of the six different types of beers and RTDs are available in Appendix 1, and the labelling information that was on each beverage type is available in Appendix 2.

[8] Although Drinkwise is an Australian organisation, this logo is still common on the label of alcoholic beverages that are available in New Zealand.

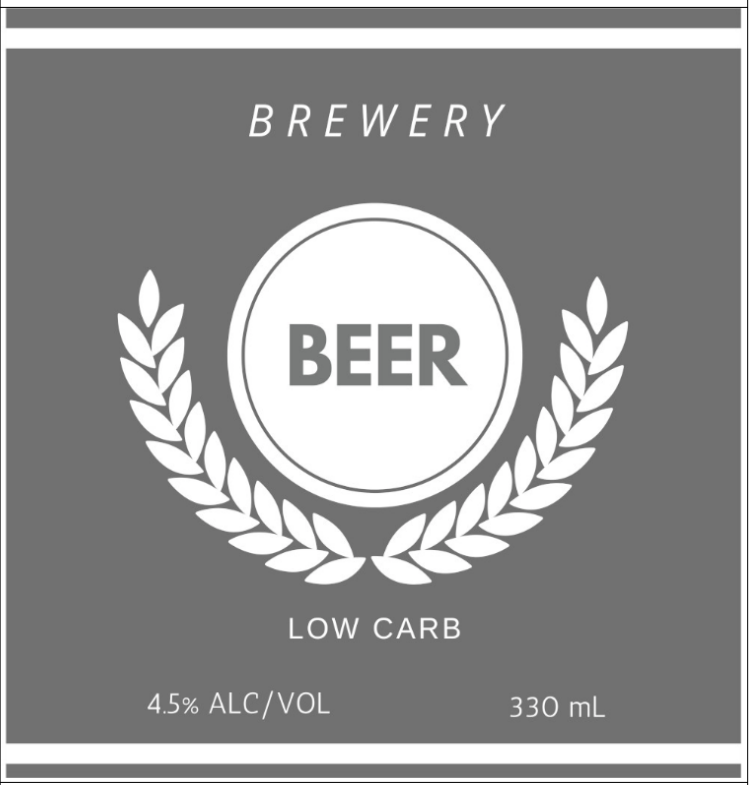
Front bottle image	Front label image
	
Back bottle image	**Back label image**
	

Figure 2. Example of one of the six product image sets for the beer group.

Piloting

The survey was piloted on 215 Australian and New Zealand consumers, in order to identify any possible comprehension issues. Pilot participants were broadly representative of the general populations in each country via use of non-interlocking quotas on age, gender, level of education, Māori in New Zealand and Aboriginal/Torres Strait Islander in Australia. Pilot participants were recruited from an online market research panel (PureProfile). An open-ended question was included at the end of the pilot survey asking participants if they found the survey easy or hard to understand, and whether there were any questions or aspects of the survey that could have been improved. No comprehension issues were identified, however, a minor error was detected for some of the labels during piloting (the number of standards drinks per serving was 1, instead of 1.2). This error was corrected following piloting, and therefore piloting participants were excluded from the final sample.

Participants and sampling approach

Australian and New Zealand participants were recruited from PureProfile's non-probability online market research panel. Participants completed the study between 15th April and 13th May 2024. Participants were eligible to complete the study if they were at least 18 years of age, had consumed beer or RTDs within the past 12 months, and were not currently employed in the alcohol industry.

Participants were sampled using interlocking quotas for age, gender and level of education for each country. Soft quotas were also used for location in each country, for Māori in New Zealand (approximately 15.6%) and for Aboriginal/Torres Strait Islanders in Australia (approximately 3.2%), reflecting current census data.

A total of 2,553 participants completed the study (Australian *n* = 1,241; New Zealand *n* = 1,312). An a-priori power analysis indicated that a sample size of at least 2,200 would be required to detect small to medium effects using two-tailed t-tests (power = 0.80, alpha = 0.005 to correct for multiple comparisons). The anticipated small to medium effects were based on previous consumer research examining the effects of sugar/carbohydrate claims on alcoholic beverages (Cao et al. 2022) and other foods (Labiner-Wolfe et al. 2010; Shemilt et al. 2017). The power analysis was also run for a two-way factorial ANCOVA, which indicated that a sample size of at least 1,199 would be required to detect any small main effects and interactions. The power analyses were calculated using G*Power software.

Measures

Participants were asked the following questions (in the same order as presented below). The full survey instrument is provided in Appendix 3.

Demographic/baseline questions

Prior to being randomly allocated to view one type of label on one type of alcoholic beverage, participants were asked the following demographic/baseline questions:

1. Age
2. Gender
3. Geographic location
4. Whether they have consumed an alcoholic beverage in the past 12 months
5. Whether they are currently employed in the alcohol industry
6. Whether they have consumed RTDs or beer within the past 12 months
7. Level of alcohol consumption (assessed using the AUDIT-C)[9]
8. Highest level of education completed
9. Cultural background
10. Household income
11. Use of nutrition labels on food
12. Perceived understanding of nutrition labels on food
13. The importance of health and weight in food and beverage choices[10]
14. Whether they have diabetes

Questions after random allocation to one type of label on one type of alcoholic beverage

After being randomly allocated to view one type of label on one type of alcoholic beverage, participants were asked to rate six different product images corresponding to their allocated group (Label A, B, C D or E on beer or RTDs). Each of the six product images were rated on the following measures:

15. Imagine that this type of [beer/RTD] was available to you. How much of this [beer/RTD] would you choose to consume, and over what time period?

    Please enter the number of [bottles/cans] that you would choose to consume: (numerical response)

    Please select how often you would choose to consume that number of [bottles/cans]: (per day/per week/per fortnight/per month)

16. How **healthy** is this [beer/RTD]? (1 = not healthy at all; 7 = very healthy)

17. How **harmful to health** is this [beer/RTD]? (1 = not harmful to health at all, 7 = very harmful to health)

18. How low or high do you consider this [beer/RTD] to be in **energy (kilojoules/calories)**? (1 = very low in energy, 7 = very high in energy).

19. How low or high do you consider this [beer/RTD] to be in **alcohol**? (1 = very low in alcohol, 7 = very high in alcohol).

20. If you consumed this [beer/RTD] the next time you were drinking alcohol, how likely would you be to:

[9] The AUDIT-C is a three item screening tool shown to have good reliability and validity (Bush et al. 1998).

[10] This was assessed using an adapted version of the 4 item weight subscale from the Steptoe et al. (1995) Food Choice Questionnaire.

a. eat less than usual in one or more meal to make up for the kilojoules/calories in this drink? (1 = not likely at all, 7 = very likely)
b. exercise more than usual to make up for the kilojoules/calories in this drink? (1 = not likely at all, 7 = very likely)
c. eat low-kilojoule/calorie, low-fat, or low-sugar foods in one or more meal to make up for the kilojoules/calories in this drink? (1 = not likely at all, 7 = very likely)

[Questions a, b and c presented in a random order]

21. Imagine someone wanted to choose an alcoholic beverage that would help them to avoid weight gain. Which of the following [beers/RTDs] do you think would be the **best** choice? Please select drink 1 or drink 2.

Two response options:

- [show the zoomed front-of-pack and back-of-pack labels of beer/RTD from their allocated condition (Label A, B, C, D or E)];
- [show zoomed front-of-pack and back-of-pack labels of an alcohol-free beer/RTD; this product was identical to the beverage shown as the first option, except that it had an 'alcohol free' claim and the energy content and alcohol content reflected values of an alcohol-free product. All other nutrition information was the same].

[Response options shown in a random order, with the first labelled as 'drink 1' and the second labelled as 'drink 2']

Figure 3 below shows an example of what the two response options looked like for Question 21 for participants in the Beer/Label D (carbohydrate claims) group.

Images of all alcohol-free alternatives that were shown to participants for Question 21 is available in Appendix 4. The alcohol-free alternatives did not contain pregnancy warning labels, number of standards drink per package information or the Drinkwise logo since these are not required on alcohol-free products.

Given the repetitive nature of Questions 15-21 (as participants had to answer each question six times), two questions were inserted (one after Question 16 and one after Question 20) to check whether participants were paying attention to the survey. Participants were excluded from the final dataset if they failed both attention check questions to ensure data quality[11]. The 'attention check' questions are available in the full survey instrument in Appendix 3.

[11] We did not collect data on how many participants failed the attention check questions.

Figure 3. Example of what the two response options looked like for Question 21 for participants in the Beer/Label D (carbohydrate claims) group.

Questions after viewing four types of alcoholic beverages

At the end of the survey, all participants saw back-of-pack images for four types of alcoholic beverages: beer, RTD, wine, and spirit. There were no claims on any of the beverages. Participants were randomly allocated to either Group 1 or Group 2.

For participants in Group 1 ('consistent format' group), all four beverages had an energy statement.

For participants in Group 2 ('inconsistent format' group), two of the beverages had a NIP and two of the beverages had an energy statement. Within Group 2, the beverage with each format (NIP or energy statement) was randomly allocated with the use of quotas to ensure that the same number of participants saw each possible beverage type and format combination.

Both groups were asked the following questions:

22. Imagine that someone was going to have one serving of an alcoholic beverage and wanted to choose the alcoholic beverage that had the **least amount of energy per serving**. Please rank the following types of alcoholic beverages from least to most amount of energy based on **one serving**.

23. How easy or hard was it for you to answer the previous question? (1 = very hard; 7 = very easy)

Images of the beer, RTD, wine and spirit that were used for the energy ranking task are available in Appendix 5.

Data analysis

Analyses were conducted using IBM SPSS Statistics software, Version 28.

Data exclusions based on implausible consumption intentions

There was a small subset of participants who stated implausible consumption amounts. It is challenging to justify cut-off levels for exclusion criteria as the number of drinks that would result in a blood alcohol level associated with alcohol poisoning or death is highly variable across different individuals. We therefore analysed the data twice using two different exclusion criteria as outlined below.

We firstly excluded participants from consumption analyses who stated that they would consume 600 or more drinks per month (at least 21 drinks per day) for one or more of the six RTDs or beers (n = 4).

Secondly, we conducted sensitivity analysis where we used a more conservative approach for excluding participants based on the number of drinks. Here, participants who stated that they consumed at least 1,200 drinks per month (at least 42 drinks per day) were excluded from analysis. This resulted in the exclusion of 1 participant, rather than 4 participants.

We also analysed the results where no data were excluded, and results did not substantively change regardless of the approach regarding data exclusions (see Results section). Both exclusion criteria have been used in previous research by FSANZ (FSANZ, 2023b).

Appendix 6 shows a breakdown of participant responses regarding the number of drinks they would consume per month for each of the six drinks. Excluded responses are shown in red text.

Data manipulations

Demographic/baseline measures

We computed an overall measure of the importance of health and weight in food and beverage choices for each participant by averaging responses across the four items (these four items are detailed under Question 16 in Appendix 3). Factor analysis showed that the four items measured one construct, indicating that it was appropriate to take an average.

We computed a total AUDIT-C score for each participant by summing responses to the three AUDIT-C questions (Bush et al., 1998).

Key measures

We converted the number of cans/bottles consumed to a common metric (per month) for each participant. Thus, for participants who reported the number consumed per day, this figure was multiplied by 30. For participants who reported the number consumed per week, this figure was multiplied by four. Finally, for participants who reported the number consumed per fortnight, this figure was multiplied by two.

We computed an overall measure of compensatory behavioural intentions for each participant for each of the six product images by averaging responses across the three items (Cao et al., 2022; Rahal et al., 2012). These three items are detailed under Question 23 in the full survey instrument (see Appendix 3). Factor analysis showed that the three items measured one construct, indicating that it was appropriate to take an average.

For all measures where each participant rated six different types of beers/RTDs (except for Question 21, see below), we calculated the median to obtain one overall value for each measure for each participant. The median was taken (rather than the mean) because the ratings were skewed across the 6 beverages, particularly for measures regarding participants' consumption intentions for RTDs. This was to be expected given the variety of flavours shown.

For Question 21 (where participants were asked to choose which beverage was best for avoiding weight gain), we calculated the number of times that participants selected the alcohol-free option across the six different choice pairs.

For Question 22 (where participants were asked to rank four different beverages by their energy content), we dichotomised participants' responses by coding them as either completely correct (i.e. correctly ordered all four beverages) or not completely correct (all other responses). We also coded whether participants at least correctly

identified the beverages that were lowest and highest in energy, and whether participants at least correctly identified the beverage that was lowest in energy (consistent with the main objective of the question). Finally, to determine whether participants may have misinterpreted the question, we coded whether participants incorrectly ranked the beverages in the reverse order.

Descriptive statistics

Descriptive statistics (percentages, group means, standard deviations) are reported where appropriate.

Descriptive statistics are provided for all 10 groups where measures statistically differed across different types of alcoholic beverages (perceived harmfulness to health). Where measures did not statistically differ across different types of beverages (all other measures), descriptive statistics are only provided for each of the five different label groups.

Significance testing and effect sizes

Throughout this report, 'statistically significant' effects refer to effects that are unlikely to be due to chance. Statistical significance does not refer to the size of an effect (e.g. an effect can be both small and statistically significant).

For continuous measures (Questions 15-20), two-way factorial ANOVAs (type of label x type of alcoholic beverage) were used to determine whether there is a statistically significant main effect of label type and a statistically significant interaction between label type and drink type (i.e. whether any label effects differ depending on the type of drink examined).[12]

For follow-up t-tests, planned comparisons were made as described in the Design section. That is, to isolate the effects of sugar claims and carbohydrate claims, Label C (sugar claims) and Label D (carbohydrate claims) were compared to both Label A as a control (no claim, NIP), and Label B as a control (no claim, energy statement). To isolate the effects of NIPs, Label A (no claim, NIP) was compared to Label E (no claim, no NIP; control).

Alpha levels (i.e. *p*-value thresholds for statistical significance) were corrected using a Bonferroni correction. Thus, an alpha level of 0.01 was used when comparisons were only made between labelling groups, whereas an alpha level of 0.005 was used when comparisons were made between labelling groups for each beverage (to account for the higher number of comparisons)[13].

Effects sizes (Cohen's *d*) were calculated using the following equation:

[12] Note that Poisson regression for count data was not appropriate for Question 15 (number of beverages participants' intended to consume), as taking the median across the six different beverages did not always produce whole numbers.

[13] Although this alpha level was conservative, note that the power analysis accounted for this (see Participants and Sampling approach)

$$d = \frac{M_1 - M_2}{\sqrt{\frac{(n_1-1){SD_1}^2 + (n_2-1){SD_2}^2}{n_1+n_2-2}}}$$

A Cohen's *d* value of 0.2 is considered to be a small effect size, 0.5 a medium effect size, whereas 0.8 is considered a large effect size (Cohen, 1988).

For Question 21 (the number of times that participants chose the alcohol-free option), Poisson regression was used to determine whether there is a statistically significant main effect of label type and a statistically significant interaction between label type and drink type. Given that Poisson regression only allows one control condition, we ran the analysis twice: once with Label A as the control (no claim, NIP), and once with Label B as the control (no claim, energy statement). Odds ratios (Exp(B) values) were used to interpret the size of the effects.

For Question 22, binomial logistic regression was used to determine whether there was a statistically significant main effect of group type (those who viewed beverages with consistently formatted energy content information vs. those who viewed beverages with inconsistently formatted energy content information). An independent samples t-test was also used to determine whether there is a statistically significant difference between the two groups in how long they took to complete the energy ranking task.

For Question 23, an independent samples t-test was used to determine whether there is a statistically significant difference between the two groups on how easy they thought it was to rank the beverages by their energy content.

Sensitivity analyses

All significance testing was repeated while controlling for baseline measures (age, gender, level of alcohol consumption [total AUDIT-C scores], use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status). Given that 13 participants had to be excluded from all analyses that controlled for baseline measures (as these participants did not identify as either male or female, and the sample size was too small to include 'other gender' in the models), results are reported both with and without controlling for baseline measures.

For continuous measures, we used two-way factorial ANCOVAs to control for baseline measures. For some ANCOVA tests, it was not possible to enter all baseline measures as covariates in the model. This was where some covariates violated statistical assumptions of the ANCOVA (homogeneity of regression slopes[14]).

[14] Homogeneity of regression slopes refers to the statistical assumption that the covariate (i.e. the variable to be controlled for) has the same relationship with the outcome measure across the different levels of the independent variables. For example, the ANCOVA test assumes that the relationship between perceived understanding of nutrition labels on food (the covariate) and consumption intentions (the outcome measure) is the same across the different labelling and beverage groups. Failure to meet this assumption questions the validity of the ANCOVA test (Field, 2018).

For Question 21 (the number of times that participants chose the alcohol-free option), baseline measures were added to the Poisson regression model.

For Question 22, we used hierarchical binomial logistic regression to control for baseline measures. Group type ('consistently' vs. 'inconsistently' formatted energy content information) was entered at stage 1, whereas baseline measures were entered at stage 2.

For Question 23, we used a one-way ANCOVA to control for baseline measures.

For all statistical tests, all relevant statistical assumptions were tested and met (e.g. homogeneity of variance, no multicollinearity, linearity of the logit, etc.; Field, 2018). Although some statisticians consider that normality testing is not required when sample sizes are large, there is no clear consensus on how large is large enough, particularly when data are highly skewed. Thus, a bootstrapping procedure was used when data were highly skewed, which produced consistent results and increased confidence in the findings. Bootstrapping does not assume normality, and is also robust in the presence of outliers (as there was evidence of outliers for the consumption intentions measure; Field, 2018)[15].

Peer review

FSANZ established an expert reference group (ERG) that provided peer review of the draft research proposal and the draft research report. Peer review comments were considered and incorporated into the final research proposal and report. As a part of this process, the data analysis approach was planned and confirmed prior to inspecting the data, which is consistent with best practice research methods.

The ERG consisted of three independent academics with relevant expertise in randomised controlled trials, statistical data analysis and/or alcohol-related consumer research: Dr Anne Macaskill (Victoria University of Wellington), Associate Professor Trenton Smith (University of Otago), and Dr Claire Wilkinson (University of New South Wales).

Results

Demographic/baseline measures

The sample consisted of 2,553 consumers of alcoholic beverages aged 18-92 years of age. The sample was nationally representative by age, gender and level of

[15] A bootstrapping procedure estimates the shape of the sampling distribution by taking 2,000 samples of the data.

education (interlocking for Australia; non-interlocking for New Zealand[16]). We slightly oversampled Māori (16.5%) and Aboriginal/Torres Strait Islanders (3.4%) within their respective countries. Separate quotas also provided a good spread of responses across different locations within each country (state and territory in Australia, and six regions in New Zealand[17]). Most participants (62%) completed the survey on mobile phones, rather than on computers.

As shown in Table 1 below, participant characteristics were similar across the different labelling groups. A more detailed description broken down by the type of alcoholic beverage that participants were allocated to is provided in Appendix 7. Participants in the RTD group tended to be younger (mean age = 41.88 years, SD = 15.35) and female (62.3%). Whereas participants in the beer group tended to be older (mean age = 50.25 years, SD = 15.35) with males being slightly more prevalent (56.8%) than females.

[16] The New Zealand sample achieved interlocking quotas for age, gender and level of education with the exception of two demographic categories, which were slightly under sampled due to being hard to reach populations: 1) 18-24 year old males with a high school/trade qualification (no university degree), and 2) 65+ year old females with a high school/trade qualification. Nevertheless, the sample was still representative by non-interlocking quotas for age, gender, and level of education.

[17] These six regions were the upper north island (Northland, Waikato, Bay of Plenty), Auckland, the lower north island (Gisborne, Hawkes Bay, Manawatu/Wanganui, Taranaki), Wellington, Canterbury, and the rest of the south island.

Table 1. Key participant characteristics across each type of labelling group (Label A, B, C, D and E)

	Label A (no claims, NIP) (n = 511)	**Label B (no claims, ES) (n = 509)**	**Label C (sugar claims, NIP) (n = 510)**	**Label D (carb claims, NIP) (n = 512)**	**Label E (no claims, no nutrition info) (n = 511)**
Country (%):					
Australia	51.47	47.74	48.04	47.85	47.95
New Zealand	48.53	52.26	51.96	52.15	52.05
Age, mean (SD)	46.81 (17.30)	45.20 (16.67)	46.65 (17.08)	45.44 (16.75)	46.17 (16.45)
Gender (%):					
Male	49.32	45.97	46.67	46.09	47.36
Female	49.71	53.63	52.94	53.71	52.05
Non-binary	0.59	0.39	0.20	0.00	0.00
Another term	0.20	0.00	0.00	0.00	0.20
Prefer not to say	0.20	0.00	0.00	0.20	0.39
Highest education level (%):					
No tertiary degree	68.30	73.08	69.80	65.63	70.45
Tertiary degree	31.70	26.92	30.20	34.38	29.55
Annual Household income (%):					
< $25,000	5.09	4.91	4.51	5.27	4.50
$25,000-$45,000	13.11	10.02	10.20	9.96	12.13
$45,001-$65,000	12.92	11.98	14.71	16.21	11.55
$65,001-$85,000	11.94	8.45	10.20	12.30	13.50
$85,001-105,000	13.50	13.95	10.00	8.40	10.37
>$105,000	37.77	43.61	43.33	39.84	41.10
Prefer not to say	5.68	7.07	7.06	8.01	6.85
Use of nutrition labels on food, mean (SD)	3.05 (1.03)	3.11 (1.03)	3.04 (1.02)	3.11 (1.02)	3.02 (1.09)

	Label A (no claims, NIP) (n = 511)	Label B (no claims, ES) (n = 509)	Label C (sugar claims, NIP) (n = 510)	Label D (carb claims, NIP) (n = 512)	Label E (no claims, no nutrition info) (n = 511)
(0 = never; 1 = rarely; 2 = occasionally; 3 = often; 4 = always)					
Understanding of nutrition labels on food, mean (SD) **(1 = very hard to understand; 7 = very easy to understand)**	4.49 (1.43)	4.59 (1.39)	4.51 (1.43)	4.59 (1.46)	4.59 (1.47)
Importance of health and weight in drink choice, mean (SD) **(1 = not at all important; 7 = very important)**	4.47 (1.39)	4.47 (1.45)	4.40 (1.40)	4.37 (1.41)	4.40 (1.48)
Total AUDIT-C, mean (SD)	4.19 (2.29)	4.29 (2.36)	4.18 (2.24)	4.32 (2.38)	4.34 (2.37)
Diabetes status (%):					
Yes	6.65	6.09	6.08	6.45	4.89
No	93.35	93.91	93.92	93.55	95.11

Note: NIP = nutrition information panel; ES = energy statement

Consumption intentions

Participants were shown six types of their allocated RTD or beer that varied in appearance and flavour. For each of the six beverages, participants were asked to state the number of cans or bottles that they would consume, and how often they would consume that number of cans or bottles per day, per week, per fortnight, or per month. All responses were converted to a common metric of 'per month' for analysis. Four participants' data were excluded from analysis because they reported implausible consumption amounts (see Data Analysis section for further information on data exclusions). We calculated the median number of bottles/cans consumed per month across each of the six beverages to obtain one overall value for each participant.

A two-way factorial ANOVA (type of label x type of alcoholic beverage) showed no statistically significant main effect of type of label (F (4, 2539) = 0.78, p = 0.540) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2539) = 0.97, p = 0.421)[18].

This indicates that sugar claims, carbohydrate claims and NIPs had no effect on participants' intended consumption amounts, and this was the case regardless of the type of alcoholic beverage (beer or RTD) examined.

Table 2 shows the mean number of beverages consumed per month (and standard deviations) for each of the five groups.

Table 2. Intended number of drinks consumed per month: Descriptive statistics for each label group.

Type of label	Mean	Standard deviation
Label A (no claims, NIP)	12.66	26.08
Label B (no claims, ES)	12.53	28.93
Label C (sugar claims, NIP)	13.26	29.07
Label D (carb claims, NIP)	12.89	32.45
Label E (no claims, no nutrition info)	13.68	37.78

Note: Standard deviations are high because of high variability in the data and the presence of outliers (see sensitivity analysis below where a bootstrapping procedure was used to deal with non-normally distributed data and outliers).

[18] The data failed the Levene's test of equality of error variance (p < 0.05). We therefore transformed the data by taking the square root (log transformations were not possible given that some values were zero). When we re-ran the ANOVA test on the transformed data, the assumption of equality of error variance was met (p > 0.05), and results remained consistent with the initial ANOVA test and follow-up t-tests.

Sensitivity analysis

A two-way factorial ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) produced results consistent with the initial ANOVA test. That is, there was no statistically significant main effect of type of label (F (4, 2519) = 0.89, p = 0.471) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2519) = 0.91, p = 0.455).

When the more conservative exclusion criterion was applied (i.e. excluding participants who stated that they consumed 1200+ drinks per month, as opposed to those who stated that they consumed 600+ drinks per month), the two-way factorial ANOVA and ANCOVA produced consistent results (all $p > 0.05$).

All possible analyses run with a bootstrapping procedure were also consistent (all $p > 0.05$).

Perceived healthiness

Participants were asked to rate how healthy their allocated beverage was on a scale from 1 to 7 (1 = not at all healthy; 7 = very healthy). Participants were required to rate each of the six types of RTDs/beers, and we calculated the median rating across each of the six beverages to obtain one overall value for each participant.

A two-way factorial ANOVA (type of label x type of alcoholic beverage) showed a statistically significant main effect of type of label (F (4, 2543) = 22.98, $p < 0.001$) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2543) = 0.50, p = 0.734).

Follow-up t-tests showed that participants who saw Label C (sugar claims + NIPs) and Label D (carbohydrate claims + NIPs) rated the beverages as statistically significantly healthier (M = 4.21 and 4.09, respectively) than those who saw Label B (energy statement – control 2 for claims; M = 3.70; both p values < 0.001; Cohen's d = 0.39 and 0.30). However, there were no statistically significant differences in perceived healthiness between Label C (sugar claims + NIPs) and Label A (NIP – control 1 for claims; M = 4.01; p = 0.014; note alpha level of 0.01), nor between Label D (carbohydrate claims + NIPs) and Label A (p = 0.282).

Participants who saw Label A (no claim, NIP) rated the beverages as statistically significantly healthier (M = 4.01) than those who saw Label E (no claim, no NIP – control for NIPs; M = 3.54; $p < 0.001$; Cohen's d = 0.36).

These findings indicate that sugar claims and carbohydrate claims with NIPs caused participants to perceive the beverages as statistically significantly healthier than beverages with no claim. The fact that this was only the case when the energy statement was the control (control 2 for claims) may be explained by the additional finding that NIPs themselves also caused participants to perceive the beverages as healthier, therefore producing no statistically significant difference between groups that saw claims + NIPs (Labels C and D) and no claims + NIPs (Label A). Findings

were consistent regardless of the type of alcoholic beverage (beer or RTD) examined.

Table 3 shows the mean ratings (and standard deviations) for each of the five groups.

Table 3. Perceived healthiness ratings: Descriptive statistics for each label group.

Type of label	Mean	Standard deviation
Label A (no claims, NIP)	4.01	1.37
Label B (no claims, ES)	3.70	1.30
Label C (sugar claims, NIP)	4.21*	1.33
Label D (carb claims, NIP)	4.09*	1.31
Label E (no claims, no nutrition info)	3.54#	1.26

*statistically significantly different compared to Label B (based on ANOVA with follow-up t-tests)
#statistically significantly different compared to Label A (based on ANOVA with follow-up t-tests)

Sensitivity analysis

A two-way factorial ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) produced results consistent with the initial ANOVA test. The full results of the ANCOVA test are available in Appendix 8.

The ANOVA and ANCOVA were also rerun using a bootstrapping procedure, and results remained unchanged.

Perceived harmfulness to health

Participants were asked to rate how harmful to health their allocated beverage was on a scale from 1 to 7 (1 = not harmful to health at all; 7 = very harmful to health). Participants were required to rate each of the six types of RTDs/beers, and we calculated the median rating across each of the six beverages to obtain one overall value for each participant.

A two-way factorial ANOVA (type of label x type of alcoholic beverage) showed a statistically significant main effect of type of label (F (4, 2543) = 8.23, $p < 0.001$) and a statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2543) = 3.38, $p = 0.009$). This indicates that the label effects were different for the different types of alcoholic beverages. Results are therefore reported separately for the RTD and beer groups below.

RTDs

Follow-up t-tests showed that participants who saw Label C (sugar claims + NIPs) on RTDs rated the beverages as statistically significantly *less* harmful to health (M = 4.02) than those who saw Label B (energy statement – control 2 for claims; M = 4.36) on RTDs (p = 0.002; Cohen's d = 0.29).

There were no other statistically significant differences between labelling groups for RTDs (all p values > 0.01; note Bonferroni-corrected alpha of 0.005).

This indicates that sugar claims caused participants to perceive RTDs as statistically significantly less harmful to health than RTDs with no claim, however carbohydrate claims and NIPs themselves had no such effect. The finding that sugar claims only had this effect when the energy statement (Label B) was the control (as opposed to when the NIP [Label A] was the control) suggests that the presence of a NIP on all RTDs may mitigate this effect of sugar claims on RTDs. Nevertheless, it is important to note that the presence of a NIP also increases healthiness perceptions of RTDs (see previous results section).

Table 4 shows the mean RTD ratings (and standard deviations) for each of the five groups.

Table 4. Perceived harmfulness to health ratings of RTDs: Descriptive statistics for each label group

Type of label	Mean	Standard deviation
Label A (no claims, NIP)	4.25	1.29
Label B (no claims, ES)	4.36	1.13
Label C (sugar claims, NIP)	4.02*	1.19
Label D (carb claims, NIP)	4.19	1.26
Label E (no claims, no nutrition info)	4.29	1.06

*statistically significantly different compared to Label B (based on ANOVA with follow-up t-tests)

Beer

Follow-up t-tests showed that participants who saw Label D (carbohydrate claims + NIPs) on beer rated the beverages as statistically significantly *less* harmful to health (M = 3.79) than those who saw Label B (energy statement – control 2 for claims; M = 4.19) on beer (p < 0.001; Cohen's d = 0.33).

Furthermore, participants who saw Label A (no claim, NIP) on beer rated the beverages as statistically significantly *less* harmful to health (M = 3.95) than those who saw Label E (no claim, no NIP – control for NIPs; M = 4.36) on beer (p < 0.001; Cohen's d = 0.33).

There were no other statistically significant differences between the labelling groups (all *p* values > 0.05).

These findings indicate that carbohydrate claims caused participants to perceive the beverages as statistically significantly *less* harmful to health than beers with no claim, however sugar claims on beer had no such effect. The fact that carbohydrate claims only had this effect when the energy statement was the control (control 2 for claims) may be explained by the additional finding that NIPs themselves also caused participants to perceive the beverages as statistically significantly less harmful to health, therefore producing no statistically significant difference between groups that saw carbohydrate claims + NIPs (Label D) and no claims + NIPs (Label A).

Table 5 shows the mean beer ratings (and standard deviations) for each of the five groups.

Table 5. Perceived harmfulness to health ratings of beers: Descriptive statistics for each label group

Type of label	Mean	Standard deviation
Label A (no claims, NIP)	3.95	1.26
Label B (no claims, ES)	4.19	1.24
Label C (sugar claims, NIP)	4.01	1.22
Label D (carb claims, NIP)	3.79*	1.15
Label E (no claims, no nutrition info)	4.36#	1.21

*statistically significantly different compared to Label B (based on ANOVA with follow-up t-tests)
#statistically significantly different compared to Label A (based on ANOVA with follow-up t-tests)

Summary

Overall, these results suggest that sugar claims on RTDs caused participants to perceive RTDs as less harmful to health than RTDs without a claim, whereas carbohydrate claims on beer had this effect relative to beers without a claim. The presence of a NIP on all RTDs may mitigate this effect of sugar claims on RTDs. Conversely, for beer, NIPs themselves caused participants to view the beverages as less harmful to health (similar to the effects of carbohydrate claims), therefore provision of a NIP on beers will not mitigate the effect of carbohydrate claims on perceived harmfulness to health.

Sensitivity analysis

A two-way factorial ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) produced

results consistent with the initial ANOVA test. The full results of the ANCOVA test are available in Appendix 8.

The finding that the results were consistent when controlling for baseline demographics indicates that the different effects by beverage type cannot be explained by the different demographic profiles of RTD vs. beer consumers. Rather, the different effects are due to the type of beverages and/or claims themselves.

The ANOVA and ANCOVA were also rerun using a bootstrapping procedure, and results remained unchanged.

Perceived energy content

Participants were asked to rate how low or high in energy they thought their allocated beverage was on a scale from 1 to 7 (1 = very low in energy; 7 = very high in energy). Participants were required to rate each of the six types of RTDs/beers, and we calculated the median rating across each of the six beverages to obtain one overall value for each participant.

A two-way factorial ANOVA (type of label x type of alcoholic beverage) showed a statistically significant main effect of type of label (F (4, 2543) = 9.72, $p < 0.001$) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2543) = 1.16, $p = 0.325$).

Follow-up t-tests showed that participants who saw Label C (sugar claims + NIPs) and Label D (carbohydrate claims + NIPs) rated the beverages as statistically significantly *lower* in energy (M = 3.98 and 4.09, respectively) than those who saw Label B (energy statement – control 2 for claims; M = 4.29; $p < 0.001$ and $p = 0.006$, respectively; Cohen's d = 0.27 and 0.17).

Participants who saw Label A (no claim, NIP) rated the beverages as statistically significantly *lower* in energy (M = 4.16) than those who saw Label E (no claim, no NIP – control for NIPs; M = 4.39; $p = 0.002$; Cohen's d = 0.20).

These findings indicate that sugar claims and carbohydrate claims with NIPs caused participants to perceive the beverages as lower in energy than beverages without claims. The fact that this was only the case when the energy statement was the control (control 2 for claims) may be explained by the additional finding that NIPs themselves also caused participants to perceive the beverages as lower in energy, therefore producing no statistically significant difference between groups that saw claims + NIPs (Labels C and D) and no claims + NIPs (Label A). Findings were consistent regardless of the type of alcoholic beverage examined.

Table 6 shows the mean ratings (and standard deviations) for each of the five groups.

Table 6. Perceived energy ratings: Descriptive statistics for each label group

Type of label	Mean	Standard deviation
Label A	4.16	1.18

(no claims, NIP)		
Label B (no claims, ES)	4.29	1.13
Label C (sugar claims, NIP)	3.98*	1.16
Label D (carb claims, NIP)	4.09*	1.18
Label E (no claims, no nutrition info)	4.39#	1.13

*statistically significantly different compared to Label B (based on ANOVA with follow-up t-tests)
#statistically significantly different compared to Label A (based on ANOVA with follow-up t-tests)

Sensitivity analysis

A two-way factorial ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) produced results consistent with the initial ANOVA test. The full results of the ANCOVA test are available in Appendix 8.

The ANOVA and ANCOVA were also rerun using a bootstrapping procedure, and results remained unchanged.

Perceived alcohol content

Participants were asked to rate how low or high in alcohol they thought their allocated beverage was on a scale from 1 to 7 (1 = very low in alcohol; 7 = very high in alcohol). Participants were required to rate each of the six types of RTDs/beers, and we calculated the median rating across each of the six beverages to obtain one overall value for each participant.

A two-way factorial ANOVA (type of label x type of alcoholic beverage) showed no statistically significant main effect of type of label (F (4, 2543) = 1.67, p = 0.154), and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2543) = 1.05, p = 0.378).

This indicates that sugar claims, carbohydrate claims and NIPs had no statistically significant effect on participants' perceptions of the alcohol content, and that results were consistent regardless of the type of alcoholic beverage examined.

Table 7 shows the mean ratings (and standard deviations) for each of the five groups.

Table 7. Perceived alcohol ratings: Descriptive statistics for each label group

Type of label	**Mean**	**Standard deviation**
Label A	4.20	0.99

(no claims, NIP)		
Label B (no claims, ES)	4.26	0.97
Label C (sugar claims, NIP)	4.25	1.01
Label D (carb claims, NIP)	4.20	1.03
Label E (no claims, no nutrition info)	4.34	1.01

Sensitivity analysis

A two-way factorial ANCOVA controlling for baseline measures (gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices) produced results consistent with the initial ANOVA test. That is, there was no statistically significant main effect of type of label (F (4, 2525) = 1.68, p = 0.153) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2525) = 0.73, p = 0.572).

The ANOVA and ANCOVA were also rerun using a bootstrapping procedure, and results remained unchanged.

Compensatory behavioural intentions

Participants were asked three questions that measured how likely they would be to modify their food intake or physical activity to compensate for the energy from the alcoholic beverage (1 = not very likely at all; 7 = very likely). For each of the six types of RTDs/beers, responses were averaged across the three questions. We then calculated the median rating across each of the six beverages to obtain one overall value for each participant.

A two-way factorial ANOVA (type of label x type of alcoholic beverage) showed a statistically significant main effect of type of label (F (4, 2543) = 2.61, p = 0.034) and no statistically significant interaction between type of label and type of alcoholic beverage (F(4, 2543) = 1.38, p = 0.237).

Follow-up t-tests showed that participants who saw Label C (sugar claims + NIPs) were statistically significantly *less* likely to modify their food intake or physical activity to compensate from the energy from the beverage (M = 2.64, SD = 1.59) than those who saw Label B (energy statement – control 2 for claims; M = 2.92, SD = 1.63; p = 0.006).

There were no other statistically significant differences between the labelling groups (all p values > 0.01; note Bonferroni-corrected alpha of 0.01).

Sensitivity analysis

When baseline measures were controlled for, the effect of sugar claims on compensatory behavioural intentions became statistically non-significant. As this is the more robust test, the overall results indicate that sugar claims, carbohydrate claims and NIPs had no effect on participants' compensatory behavioural intentions. Further details of this analysis are below.

A two-way factorial ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) showed a statistically significant main effect of type of label (F (4, 2523) = 2.52, p = 0.040) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2523) = 0.85, p = 0.495). However, follow-up t-tests showed no statistically significant differences between any of the labelling groups (all p values > 0.01; note Bonferroni-corrected alpha of 0.01).

The amount of variance accounted for by the ANCOVA model substantially increased compared to the initial ANOVA test (21% vs. 0.3% based on adjusted R^2 values). This increase in variance accounted for is substantially larger compared to when baseline measures were added to the model for other measures (see Appendix 8). All baseline measures (except for use of nutrition labelling and diabetes status) were statistically significant predictors of participants' likelihood of modifying their food intake or physical activity (all main effects < 0.05).

Given that participants who did not identify as male or female had to be excluded from all analyses that controlled for baseline measures, we re-ran the ANOVA test with these participants excluded, and results remained consistent with the initial ANOVA test with all participants included. This indicates that the change in results based on the ANCOVA can be attributed to controlling for baseline measures, rather than exclusion of those participants.

The ANCOVA was also rerun using a bootstrapping procedure, and results remained unchanged.

Table 8 shows the mean ratings and standard deviations (adjusted based on the baseline measures).

Table 8. Compensatory behavioural intentions: Descriptive statistics for each label group, adjusted based on baseline measures.

Type of label	Adjusted mean	Standard deviation
Label A (no claims, NIP)	2.63	1.42
Label B (no claims, ES)	2.89	1.42
Label C (sugar claims, NIP)	2.67	1.42

Label D (carb claims, NIP)	2.69	1.43
Label E (no claims, no nutrition info)	2.73	1.42

Choice to best avoid weight gain

Participants were shown two beverages and were asked to pick the beverage that they thought would best help someone avoid weight gain. One of the beverages was a 4.5% alcohol by volume (ABV) beverage. The other beverage, an alcohol-free alternative, was identical other than the alcohol and energy content. For some participants, the 4.5% ABV option had a sugar claim or a carbohydrate claim (depending on their group allocation). We calculated the number of times that participants correctly selected the alcohol-free alternative (out of the six times that they were asked to make this choice).

Both Poisson regressions with Label A (no claim, NIP) as the control condition and Label B (no claim, energy statement) as the control condition showed a statistically significant main effect of label type ($\chi 2(4) = 51.92$, $p < 0.001$) and no statistically significant interaction between type of label and type of alcoholic beverage ($\chi 2(4) = 7.80$, $p = 0.099$).

Participants who saw Label C (sugar claims, NIP) and Label D (carbohydrate claims, NIP) were statistically significantly *less* likely to correctly select the alcohol-free alternative than participants who saw Label A (no claim, NIP; $p = 0.043$ and 0.042, respectively; both Exp(B) = 0.921). There was no statistically significant difference between Label A (no claim, NIP) and Label E (no claim, no nutrition information; $p = 0.797$).

Participants who saw Label C (sugar claims, NIP) and Label D (carbohydrate claims, NIP) were also statistically significantly *less* likely to correctly select the alcohol-free alternative compared to participants who saw Label B (no claim, energy statement; both p values = 0.007; both Exp(B) = 0.898).

These findings indicate that the presence of sugar and carbohydrate claims on alcoholic beverages reduced participants' understanding that an alcohol-free alternative is better for weight management. NIPs themselves (Label A vs. Label E) had no effect, and results were consistent regardless of the type of alcoholic beverage examined.

The size of these effects (Exp(B)) slightly differed depending on the control condition. That is, when participants saw claims (Labels C and D), the odds of selecting the alcohol-free alternative as the better choice *decreased* by 10.2%, compared to when participants saw no claims and an energy statement (Label B; 1-Exp(B) = -0.102). Whereas when participants saw claims (Labels C and D) the odds of selecting the alcohol-free alternative as the better choice decreased by 7.9%, compared to when participants saw no claims and a NIP (Label A; 1-Exp(B) = -0.079).

Thus, although providing NIPs on all alcoholic beverages (Label A) will not eliminate this effect of claims, it may slightly reduce it. It is important to note, however, that

NIPs themselves cause consumers to make other types of inaccurate assumptions about alcoholic beverages (see previous findings on perceived healthiness, harmfulness to health and energy content).

Table 9 shows the mean number of times out of six that participants correctly selected the alcohol-free alternative (as well as the standard deviations) for each of the five groups. As demonstrated by the means, participants were able to correctly identify the alcohol-free alternative as the better choice most of the time (on average, 4/6 times when a claim was present, and 5/6 times when a claim was not present).

Table 9. Number of times participants chose the alcohol-free alternative: Descriptive statistics for each label group.

Type of label	Mean	Standard deviation
Label A (no claims, NIP)	5.10	2.26
Label B (no claims, ES)	5.12	2.26
Label C (sugar claims, NIP)	4.41*#	2.10
Label D (carb claims, NIP)	4.51*#	2.12
Label E (no claims, no nutrition info)	5.08	2.25

*statistically significantly different compared to Label B (based on Poisson regression)
#statistically significantly different compared to Label A (based on Poisson regression)

Sensitivity analysis

Results were consistent when baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) were controlled for in the models. That is, there was a statistically significant main effect of label type ($\chi 2(4) = 54.11$, $p < 0.001$) and no statistically significant interaction between type of label and type of alcoholic beverage ($\chi 2(4) = 7.75$, $p = 0.101$). Participants who saw Label C (sugar claims, NIP) and Label D (carbohydrate claims, NIP) were statistically significantly *less* likely to correctly select the alcohol-free alternative compared to participants who saw Label A (no claim, NIP) and Label B (no claim, energy statement), all p values > 0.05. The full results of the Poisson regressions when controlling for baseline measures is available in Appendix 9.

Ability to rank different types of alcoholic beverages based on their energy content

Participants were shown back-of-pack images of four types of alcoholic beverages, and were asked to rank the beverages from lowest to highest in energy per serving. Half of the participants saw all of the beverages with energy statements ('consistent

format' group), whereas the other half of participants saw two of the beverages with a NIP and two of the beverages with an energy statement ('inconsistent format' group).

Binary logistic regressions showed that group type ('consistent format' vs. 'inconsistent format') did **not** statistically significantly predict participants' ability to:

- correctly rank the beverages in order (*p* value for the model = 0.707)
- correctly identify the beverages that were lowest and highest in energy (*p* value for the model = 0.430), or
- correctly identify the beverage that was lowest in energy (*p* value for the model = 0.198)

An independent samples t-test also showed that there was no statistically significant difference in the amount of time that each group took to complete the task (consistent group: *M* = 1.62. *SD* = 2.42; inconsistent group: *M* = 1.87. *SD* = 5.25*; t* (1799.03) = 1.57, *p* = 0.116).

Table 10 shows the percentage of participants in each group who correctly ranked the beverages in order ('spirits-RTD-beer-wine' ranking order), who correctly identified the beverages that were lowest and highest in energy ('spirits' first, 'wine' last), who correctly identified the beverage that was lowest in energy ('spirits' first; consistent with the main objective of the question), and who incorrectly ranked the beverages in the reverse order ('wine-beer-RTD-spirits' ranking order).

Table 10. Percentage of participants in each group who correctly ranked the beverages in order, who correctly identified the beverages that were lowest and highest in energy, who correctly identified the beverage that was lowest in energy, and who incorrectly ranked the beverages in the reverse order.

Group type	**Percentage of participants who correctly ranked all beverages**	**Percentage of participants who correctly identified the beverages that were lowest and highest in energy**	**Percentage of participants who correctly identified the beverage that was lowest in energy**	**Percentage of participants who incorrectly ranked the beverages in reverse order**
'Consistent format' (all beverages with energy statements)	50.0	58.1	66.6	1.5
'Inconsistent format' (two beverages with energy statements, two beverages with NIPs)	49.3	56.6	64.2	1.5

Sensitivity analysis

Results regarding participants' ability to correctly rank the beverages did not change when baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) were controlled for in the models using hierarchical binomial logistic regression. Although the models were statistically significant (all *p* values > 0.001), group type ('consistent format' vs. 'inconsistent format') did **not** statistically significantly predict participants' ability to:

- correctly rank the beverages in order ($p = 0.941$)
- correctly identify the beverages that were lowest and highest in energy ($p = 0.563$), or
- correctly identify the beverage that was lowest in energy ($p = 0.276$)

However, participants who were younger, identified as female (rather than male), had lower levels of alcohol consumption, reported reading nutrition labels more often, and placed a higher level of importance on health and weight in their food and beverage choices were statistically significantly more likely to provide all three types of correct responses (all *p* values < 0.05). The full results of the hierarchal binomial logistic regression analyses are available in Appendix 10.

Results also remained consistent regarding the amount of time that each group took to complete the task. A one-way ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status) showed no statistically significant main effect of group type ('consistent format' vs. 'inconsistent format') (F (1, 2531) = 2.17, $p < 0.141$). The initial t-test and ANCOVA were also rerun using a bootstrapping procedure, and results remained unchanged.

Perceived ease of use of the energy content information to rank different types of alcoholic beverages

Participants were asked how easy or hard it was for them to rank the beverages in order by their energy content (1 = very hard, 7 = very easy).

An independent samples t-test showed that participants who saw energy content information presented in a consistent format across the different beverages perceived the task as statistically significantly easier ($M = 5.19$, $SD = 1.72$) than participants who saw the energy content information presented in an inconsistent format across the different beverages ($M = 4.98$, $SD = 1.74$; t (2551) = 3.07, $p = 0.002$; Cohen's $d = 0.12$).

Sensitivity analysis

A one-way ANCOVA controlling for baseline measures (age, gender, level of alcohol consumption, understanding of nutrition information on food labels, importance of health and weight in food and drink choices) produced results consistent with the initial t-test. There was a statistically significant main effect of group type (F (1, 2532)

= 10.44, p = 0.001), such that participants who saw energy content information presented in a consistent format across the different beverages perceived the task as statistically significantly easier (adjusted mean = 5.18) than participants who saw the energy content information presented in an inconsistent format across the different beverages (adjusted mean = 4.97; p = 0.001).

The initial t-test and ANCOVA were also rerun using a bootstrapping procedure, and results remained unchanged.

Discussion

The current research consisted of a randomised controlled trial that examined consumer responses to sugar claims, carbohydrate claims and NIPs on alcoholic beverages.

The research sought to address the following research questions:

1. What is the effect of sugar and carbohydrate nutrition content claims on consumer perceptions of alcoholic beverages?
    - Do these claims cause consumers to make inaccurate assumptions about the energy content, alcohol content, general healthiness and/or harmfulness of alcoholic beverages?
2. What is the effect of sugar and carbohydrate nutrition content claims on consumers' behavioural intentions?
    - Do these claims cause consumers to modify their alcohol intake, exercising behaviour and/or consumption of other foods?
3. What is the effect of NIPs on consumers' perceptions of alcoholic beverages?
    - Do NIPs cause consumers to make inaccurate assumptions about the energy content, alcohol content, general healthiness and/or harmfulness of alcoholic beverages?
4. What is the effect of NIPs on consumers' behavioural intentions (alcohol intake, exercising behaviour, consumption of other foods)?
    - Do NIPs cause consumers to modify their alcohol intake, exercising behaviour and/or consumption of other foods?
5. Does consistency in the format of energy content information on alcoholic beverages:
    a. affect consumers' ability to accurately use the energy content information?
    b. affect consumers' perceptions regarding how easy or hard it is to use the energy content information?

The key findings are presented below, grouped by the research questions. This is followed by a discussion of the strengths and limitations of the research and a conclusion.

What is the effect of sugar and carbohydrate claims on consumer perceptions of alcoholic beverages?

Sugar and carbohydrate claims caused participants to make some inaccurate assumptions about alcoholic beverages. That is, the presence of these claims caused participants to perceive alcoholic beverages as being healthier, less harmful to health, and lower in energy compared to the same alcoholic beverages without a claim. These were inaccurate assumptions because the beverages were identical (including in their energy content), except for the presence vs. absence of the claim.

All effects were small (Cohen's d range: 0.17 – 0.39), and participants were not found to perceive alcoholic beverages as being healthy, low in energy or unharmful to health overall regardless of the presence or absence of claims. Rather, all mean ratings were around the midpoint of the rating scales (range = 3.54 – 4.36)[19].

These findings are consistent with previous research by Cao et al. (2022), which tested the effects of sugar claims on RTDs using a sample of young adult females. The current research extends these findings to the general population (not just young adult females), carbohydrate claims (not just sugar claims), beer (not just RTDs), and to a regulatory context where NIPs are provided on alcoholic beverages making a claim and energy statements are provided on other alcoholic beverages. The current research also found that the presence of sugar and carbohydrate claims reduced participants' understanding that an alcohol-free alternative is better for weight management, which was not tested in Cao et al. (2022).

In contrast to Cao et al. (2022), the current research found that sugar and carbohydrate claims had no effect[20] on how low or high in alcohol participants perceived the beverages to be. Reasons for this discrepancy could be that participants in the current study were provided with standard drink information in the NIPs and energy statements (i.e. the number of standard drinks equal to the serving size), which may have made the alcohol content more prominent to participants than in Cao et al. (2022). Participants in Cao et al.'s study were also younger (mean age approximately 29 years) than the RTD consumers' in the current study (mean age approximately 42 years), which could have influenced the results. In the current study, it was not possible to control for age in the sensitivity analysis that examined consumer perceptions of the alcohol content of the beverages[21].

[19] All ratings were on a scale from 1 to 7 (e.g. 1 = not at all healthy; 7 = very healthy). Thus, a rating of 4 represents the midpoint of the scale. We considered 3.54 and 4.39 to be around the midpoint given that these decimal numbers round to 4.

[20] Throughout this report, 'no effect' refers to no statistically significant effect.

[21] It was not possible to add age to the ANCOVA model because this would have violated statistical assumptions of the ANCOVA test (homogeneity of regression slopes – see data analysis section).

Differential effects of claims on RTDs vs. beers

The effects of sugar and carbohydrate claims on participants' perceptions were similar across RTDs and beers, except for their effects on participants' perceived harmfulness to health of the beverages.

Sugar claims on RTDs caused participants to perceive RTDs as being*less* harmful to health. The presence of a NIP on all RTDs may mitigate this effect of sugar claims on RTDs. However, the provision of NIPs on all RTDs would not mitigate the effects of sugar or carbohydrate claims on consumers' other perceptions of RTDs (i.e. provision of NIPs on RTDs did not prevent participants from perceiving RTDs with a claim as being healthier, lower in energy or better for weight management than RTDs with no claim). In contrast to RTDs, it was carbohydrate claims on beer that caused participants to perceive beers as being less harmful to health and the provision of a NIP on all beers would not mitigate this effect. This is because NIPs themselves also caused participants to perceive beers as being less harmful to health (see further discussion on the effects of NIPs below).

The differential effects of sugar claims and carbohydrate claims on RTDs and beers may be explained by the fact that sugar claims tend to be more prevalent on RTDs than carbohydrate claims, and carbohydrate claims tend to be more prevalent on beer than sugar claims (Barons et al., 2022; Haynes et al., 2022). Consumers may therefore be particularly sensitive to these claim/beverage type combinations. The finding that the effects of claims on perceived harmfulness to health were consistent when controlling for baseline demographics indicates that the different effects by beverage type cannot be explained by the different demographic profiles of RTD consumers (who tended to be younger and female) vs. beer consumers (who tended to be older and male). Rather, the different effects are due to the type of beverages and/or claims themselves. Nevertheless, both sugar and carbohydrate claims caused consumers to make inaccurate assumptions about beers and RTDs on at least one of the measures in this study. The results are therefore not suggesting that *only* sugar claims on RTDs and *only* carbohydrate claims on beer cause consumers to make inaccurate assumptions.

What is the effect of sugar and carbohydrate claims on consumers' behavioural intentions?

Sugar and carbohydrate claims had no effect on the number of alcoholic beverages that participants reported intending to consume. The claims also had no effect on participants' reported likelihood of modifying their food intake or physical activity to compensate for the energy from alcoholic beverages. The first finding is consistent with previous research by Cao et al. (2022), which also found that sugar claims on RTDs had no effect on the amount of the beverages that young adult females intended to consume.

In contrast to the current research, Cao et al. (2022) found that sugar claims on RTDs caused young adult females to be *less* likely to modify their food intake or physical activity to compensate for the energy from the alcohol. A likely explanation for this discrepancy is that participants in the current study were provided with energy content information on all beverages, whereas in Cao et al.'s study, participants were

not provided with any nutrition information about the beverages (only the sugar claims). Although the current research found that the presence of sugar and carbohydrate claims caused participants to inaccurately perceive the beverages as being lower in energy, the presence of energy content information on all alcoholic beverages may have mitigated a subsequent influence on compensatory behavioural intentions. This assumption is supported by the fact that the effects of sugar claims on participants' perceived energy content of RTDs was much larger in Cao et al.'s study (means = 4.53 vs. 3.59, Cohen's *d* = 1.06) compared to in the current study.

It is also possible that the different findings may be due to the fact that Cao et al.'s (2022) research sampled younger adult females (mean age approximately 29 years) compared to the RTD consumers in the current study (mean age approximately 42 years). Although we found that age and gender were statistically significant predictors of participants' compensatory behavioural intentions, it was not possible to undertake subgroup analysis to determine whether the effects of the labels differed based on different demographic profiles because this analysis would have required a much larger sample size. The current research findings therefore provide evidence at the general population level. Regardless, the effect of sugar claims on young adult female consumers' compensatory behavioural intentions in Cao et al. (2022) was small, and participants in that study generally reported that they would be unlikely to engage in these compensatory behaviours regardless of whether the claim was present (means = 2.88 vs. 2.52 on a scale from 1 (strongly disagree) to 7 (strongly agree); Cohen's *d* = 0.24)).

What is the effect of NIPs on consumer perceptions of alcoholic beverages?

NIPs caused participants to make inaccurate assumptions about alcoholic beverages. That is, the presence of a NIP caused participants to perceive alcoholic beverages as being healthier, less harmful to health, and lower in energy compared to the same alcoholic beverages without a NIP.

To determine whether energy statements had similar effects to NIPs, we statistically compared perceived ratings of the alcoholic beverages between participants who viewed Label B (no claims, energy statement) and Label E (no claims, no nutrition information). Note these were not planned comparisons (see Design and Data analysis sections). Independent samples t-tests showed that energy statements had no effect on participants' perceived healthiness (p = 0.049; note Bonferroni-corrected alpha of 0.01), harmfulness to health (p = 0.544 for RTDs; p = 0.116 for beers) or energy content (p = 0.170) of the alcoholic beverages. These findings show that the effects on consumer perceptions are specific to NIPs.

Consistent with the effects of claims, all NIP effects were small (Cohen's *d* range = 0.20 – 0.36), and participants were not found to perceive alcoholic beverages as being healthy, low in energy or unharmful to health overall regardless of the presence or absence of NIPs. Rather, all mean ratings were around the midpoint of the rating scales (range = 3.54 – 4.39).

The findings that NIPs increased healthiness perceptions and reduced energy content perceptions is inconsistent with previous New Zealand-based research by

Walker et al. (2019), which found no effect of NIPs on either measure. It is likely that Walker et al. (2019) did not have adequate statistical power to detect such small effects, as the authors reported that their study was only powered to detect a minimum one-point difference in scale ratings between groups, and the effects detected in the current study were much smaller than this.

Differential effects of NIPs on RTDs vs. beers

As with the effects of claims, the effects of NIPs on participants' perceptions were similar across RTDs and beers, except for their effects on participants' perceived harmfulness to health of the beverages. That is, NIPs on beers caused participants to perceive beers as being *less* harmful to health, whereas NIPs on RTDs had no effect on perceived harmfulness to health of RTDs.

The differential effects of NIPs on RTDs and beers cannot be explained by consumers having a higher exposure to NIPs on beers than RTDs, as NIPs are more commonly seen on RTDs than beers in the current market (Barons et al., 2022). However, it is possible that NIPs may have had more of an impact on beers than RTDs because there are more nutrients in the NIP that are close to zero for beer than for RTDs (see Appendix 2). The finding that the effects of NIPs on perceived harmfulness to health were consistent when controlling for baseline demographics indicates that the different effects by beverage type cannot be explained by the different demographic profiles of RTD and beer consumers. Rather, the different effects are due to the type of beverages themselves.

Regardless, NIPs still caused consumers to make inaccurate assumptions about RTDs in other ways i.e. caused participants to perceive RTDs as being healthier and lower in energy.

Effects of NIPs on perceived energy content

There are two possible explanations for the finding that NIPs caused participants to perceive alcoholic beverages as being lower in energy: 1) participants may have overestimated the energy content of alcoholic beverages when they weren't provided with that information, or 2) other information provided in the NIP (e.g. 0 g fat, 0 g sugar, etc.) increased healthiness perceptions of the beverages, similar to the effects of claims.

As noted above, energy statements had no effect on participants' perceived energy content, healthiness or harmfulness to health of the alcoholic beverages. These findings show that the effects on consumer perceptions are specific to NIPs, and suggests that NIPs caused participants to perceive alcoholic beverages as being lower in energy because they increased healthiness perceptions, rather than because participants overestimated the energy content when this information was not provided to them.

What is the effect of NIPs on consumers' behavioural intentions?

Consistent with the findings for sugar and carbohydrate claims, NIPs had no effect on the amount of alcoholic beverages that participants intended to consume. NIPs also

had no effect on participants' likelihood of modifying their food intake or physical activity to compensate for the energy from alcoholic beverages. The first finding is consistent with previous research by Walker et al. (2019), which found no effect of NIPs on the amount of alcoholic beverages that participants intended to consume. The effects of NIPs on participants' compensatory behaviours was not tested in Walker et al. (2019).

Does consistency in the format of energy content information on alcoholic beverages affect consumers' actual and/or perceived ease of use of the information?

Consistency in the format of energy content information had no effect on participants' ability to rank different types of alcoholic beverages by their energy content. However, participants *perceived* this to be an easier task when the format of the energy content information was presented in a consistent format across different types of alcoholic beverages (as opposed to in an inconsistent format). This latter effect was important to investigate because if consumers find information easier to use, then they may be more likely to engage with it (Samant & Seo, 2016). This effect on consumers' perceived ease of use was small.

It is possible that the energy ranking task was too difficult for participants, and thus the finding that consistency in the format had no effect on accuracy may be attributed to a floor effect. Indeed, only approximately 50% of participants were able to correctly order all four beverages by their energy content per serving regardless of the consistency of the energy content information. In previous research conducted by FSANZ (FSANZ, 2023b), accuracy on this task was slightly higher (58%) when participants were only required to rank three beverages by their energy content (as opposed to four). However, in this previous research, participants were also asked to rank the beverages by 'one drink' (as opposed to 'one serving'), which likely made the question more ambiguous for participants. It is therefore possible that the percentage of participants who accurately ranked the beverages would have been even higher if we asked them to only rank three beverages (as in FSANZ, 2023b) and based on "one serving" (as in the current study).

Nevertheless, the finding that 50% of participants were able to correctly rank four alcoholic beverages based on their energy content in the current study is still a substantial improvement compared to when research participants have been asked to do this in the absence of energy content information. In a systematic review undertaken by FSANZ (2021), one identified study found that only 34% of consumers correctly selected which beverage contained the most energy per serving out of an RTD, beer, wine or spirit (Annunziata et al., 2016). Similarly, a second study found that only 30% of consumers correctly understood that 100 mL of spirits is higher in energy than 100 mL of beer or 100 mL of wine (Growth from Knowledge Group, 2014).

Strengths and limitations

The purpose of this study was to examine the effects of sugar claims, carbohydrate claims and NIPs on consumers' responses to alcoholic beverages. Use of a

randomised controlled trial was the most appropriate design in order to determine the causal effects of each type of labelling information.

Nevertheless, the current research is not without limitations. Firstly, the non-response rate of potential survey respondents is unknown. That is, it is unknown how many eligible participants declined to participate. Although the final sample was nationally representative of the Australian and New Zealand population by three factors (age, gender, level of education), it is possible that non-respondents of the survey had common factors that made them less likely to participate. Additionally, members of an online panel may have certain characteristics that differ from the broader population.

The current study used AUDIT-C scores to control for baseline levels of alcohol consumption. The AUDIT-C is a concise, three-item screening test for heavy drinking adapted from the World Health Organisation's ten-item Alcohol Use Disorders Identification Test (Bush et al. 1998, Babor et al. 2001). In the current study, 68.5% of participants were heavy drinkers according to AUDIT-C criteria[22]. It is unknown whether this percentage is representative of the general population, as Australian and New Zealand studies on the prevalence of alcohol consumption in the general population use different metrics.[23] Nevertheless, participants' mean total AUDIT-C scores in the current study (M = 4.3, SD = 2.3) are comparable to participants' mean total AUDIT-C scores in Cao et al.'s (2022) study (M = 4.4, SD = 2.3).

Another general limitation associated with online surveys is that it is not possible to completely replicate the real-world context in which consumers are exposed to alcoholic beverages. For example, previous consumer research suggests that when a food product carries a front-of-pack claim, consumers are less likely to turn the package over to look at the back-of pack nutrition panel (Ikonen et al. 2022). This raises the question of whether the effects of claims on consumer perceptions in the current study may have been larger if participants were not shown back-of-pack information alongside front-of-pack, but instead could choose to rotate the product to view the back to view the nutrition information (energy statement or NIP). However, it appears unlikely that making the viewing of back-of-pack labels optional in the current study would have caused the claims to have larger effects on participants' healthiness and harmfulness to health perceptions of the beverages. This is because the study by Cao et al. (2022), which did not provide participants with energy content information at all, also found only small effects of sugar claims on these perceptions of RTDs. It is less certain whether providing participants with the option to view the back-of-pack labels in the current study would have caused the claims to have larger

[22] Total AUDIT-C scores ≥3 for women and ≥4 for men indicate heavy alcohol use (Towers et al., 2011).

[23] To reduce the risk of harm from alcohol-related disease or injury, the Australian guidelines state that men and women should drink no more than 10 standard drinks a week and no more than 4 standard drinks on any one day. The less a person drinks, the lower their risk of harm from alcohol. To meet the adult guideline, both criteria must be met (NHMRC, 2020).

Conversely, the New Zealand guidelines state that in order to reduce long-term health risks, women should drink no more than 10 standard drinks a week and no more than 2 standard drinks a day. Men should drink no more than 15 standard drinks a week and no more than 3 standard drinks a day. In addition, both men and women should have at least 2 alcohol-free days every week (HPA, 2018).

effects on energy content perceptions of the beverages. Cao et al. (2022) found that the effects of sugar claims on participants' perceived energy content of RTDs was much larger than in the current study, which may have contributed to the subsequent (albeit small) effect on participants' compensatory behavioural intentions in that study. Nevertheless, providing consumers with a choice to view back-of-pack nutrition information is very different from not providing the information at all (as in Cao et al., 2022).

We initially considered providing participants with the option to click to view the back label, however, telling participants this was an option may have prompted them to view the back label when they wouldn't have otherwise in a real-world setting. Given the difficulties in realistically simulating this experience in an online environment, we decided to provide the images side-by-side. Importantly, participants were not directed to use one particular piece of labelling information when evaluating the alcoholic beverages.

Thirdly, consumers' consumption intentions were measured through self-report, which is limited by social desirability bias. This is an inherent limitation of any self-report questionnaire, and therefore some level of these biases is unavoidable. Additionally, consumers' behavioural *intentions* were examined, which may not necessarily reflect actual behaviour (Morwitz et al., 2007; Sheeran & Webb, 2016). Acknowledging this limitation, intended alcohol consumption is still correlated with actual alcohol consumption (Cooke et al., 2016), and thus is still a useful proxy measure. Furthermore, any potential behaviour-intention gap would be equally prevalent across all labelling groups, given that participants were randomly allocated to groups. Due to practicality reasons, self-report measures are highly common within social science research. It is also acknowledged that the current study did not measure how claims and NIPs might influence the amount of alcoholic beverages that participants may intend to consume over longer periods of time i.e. beyond a one month period. The current study does however extend on the research by Cao et al. (2022) which only examined intended consumption over a two week period .

There was also evidence that some participants may not have understood the consumption intentions questions, with some reporting implausibly high consumption amounts. It is also possible that these responses indicating excessive alcohol consumption were fanciful or playful. However, this was only for a small subset of participants, and results were highly consistent regardless of whether these participants were included or excluded. We also conducted sensitivity analysis using two different exclusion criteria (see Data Analysis section for more detail), and results remained highly consistent, which increases confidence in the findings.

Finally, for some measures (perceived healthiness and energy content), the unique effects of claims vs. NIPs could not be entirely teased apart. This was where Labels C and D (claims with NIPs) had statistically significant effects when Label B (no claims, energy statement) was the control condition, but not when Label A (no claims, NIPs) was the control condition. It is not possible to conclude whether the claims would have had these same effects if they were presented without NIPs, given that NIPs themselves also had these similar effects. We did not include a 'claim, no NIP' condition because this would not reflect the current regulatory environment where NIPs are required on alcoholic beverages making a claim. Nevertheless, the finding that sugar claims had a different effect to carbohydrate claims on perceived

harmfulness to health demonstrates that the claims themselves had their own unique effects on consumer perceptions. Further, we found that sugar and carbohydrate claims had an independent effect on consumers' understanding about whether an alcohol-free alternative is better for weight management, as NIPs themselves had no effect on this measure.

Conclusion

FSANZ undertook a randomised controlled trial to examine Australian and New Zealand consumers' responses to sugar claims, carbohydrate claims, and NIPs on alcoholic beverages. The research also examined whether consistency in the format of energy content information influences consumers' actual and/or perceived ease of use of that information.

The findings show that sugar claims, carbohydrate claims, and NIPs themselves cause consumers to make inaccurate assumptions about alcoholic beverages i.e. perceive them as being healthier, less harmful to health, and lower in energy compared to the same alcoholic beverage with no claim or no NIP. Claims also reduce consumers' understanding that an alcohol-free alternative is better for managing weight (although NIPs have no such effect). These effects on consumer perceptions are small.

The findings also show that sugar claims, carbohydrate claims and NIPs themselves have no effect on the amount of alcoholic beverages consumers intend to consume, nor on the likelihood of consumers modifying their food intake or physical activity to compensate for their alcohol intake.

Finally, although consistency in the format of energy content information has no effect on consumers' ability to accurately use that information, it does make consumers feel that the information is easier to use. This effect on consumers' perceived ease of use is small.

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Appendices

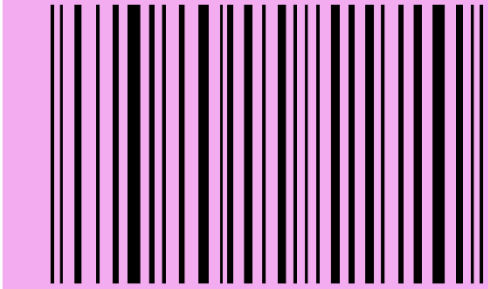
Appendix 1: Images of the six different types of RTDs and beers

The following images show the six different types of RTDs and beers to demonstrate how they varied in appearance/flavour. All example images contain sugar claims and NIPs. However, note that there were other versions of the images that had carbohydrate claims or no claims (rather than sugar claims) and energy statements (rather than NIPs) – see ‘Methods - Design’ section.

Although only zoomed images of the back-of-pack labels are shown here (for legibility purposes), note that participants were shown zoomed images of both the front-of-pack and back-of-pack images during the survey – see Figure 2 in the ‘Methods - Stimuli’ section.

RTD # 1:


Vodka Soda
Watermelon
& Mint
LOW SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 465 kJ (111 Cal) 141 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Soda water, vodka, sugar, natural watermelon flavour, natural mint flavour, acid (330)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS 1.2 APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see can
Get the facts
Drink Wise.
org.au



NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	465 kJ (111 Cal)	141 kJ (34 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2 g	0.6 g
- sugars	2 g	0.6 g
Sodium	15 mg	<5 mg

INGREDIENTS: Soda water, vodka, sugar, natural watermelon flavour, natural mint flavour, acid (330)

DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM

Best Before: see can

RTD # 2:


ALCOHOLIC
SPARKLING
WATER
Peach
Passion
2g SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 465 kJ (111 Cal) 141 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Sparkling water, alcohol, apple juice from concentrate, natural flavours, acids (330, 331)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS
1.2
APPROX.
PREGNANCY WARNING
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NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	465 kJ (111 Cal)	141 kJ (34 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2 g	0.6 g
- sugars	2 g	0.6 g
Sodium	15 mg	<5 mg

RTD # 3:


RUM
&
DRY
NO SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy
Protein
Fat, total
- saturated
Carbohydrate
- sugars
Sodium
INGREDIENTS: Carbonated water, rum, acid (330), flavours, preservative (211), colour (150a), sweeteners (955, 950)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
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NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 432 kJ (103 Cal) 131 kJ (31 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 0 g 0 g
- sugars 0 g 0 g
Sodium 15 mg <5 mg
INGREDIENTS: Carbonated water, rum, acid (330), flavours, preservative (211), colour (150d), sweeteners (955, 950)
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS
1.2
APPROX.
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Best Before: see can

RTD # 4:


GIN
FIZZ
LOW SUGAR
4.5% ALC/VOL
330 mL


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 465 kJ (111 Cal) 141 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.5 g
- sugars 2 g 0.5 g
Sodium 15 mg <5 mg
INGREDIENTS: Sparkling water, gin, sugar, lemon juice, cucumber, acid (330)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS
1.2
APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see can
Get the facts
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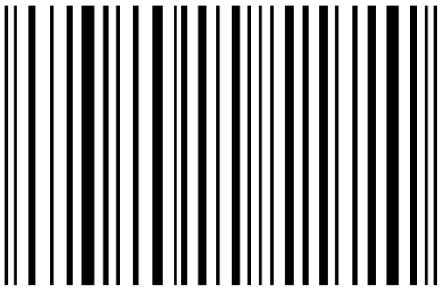

NUTRITION INFORMATION Servings per package: 1 Serving size: 330 mL (1.2 standard drinks)		
	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	465 kJ (111 Cal)	141 kJ (34 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2 g	0.6 g
- sugars	2 g	0.6 g
Sodium	15 mg	<5 mg

INGREDIENTS: Sparkling water, gin, sugar, lemon juice, cucumber, acid (330)

DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM

Best Before: see can

RTD # 5:


VODKA
LEMON & LIME
2g SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 465 kJ (111 Cal) 141 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Soda water, vodka, sucrose, flavours, acid (330)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS 1.2 APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see can
Get the facts
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NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 465 kJ (111 Cal) 141 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Soda water, vodka, sucrose, flavours, acid (330)
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS 1.2 APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
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Best Before: see can

RTD # 6:


WHISKEY
& COLA
NO SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy
Protein
Fat, total
- saturated
Carbohydrate
- sugars
Sodium
15 mg
<5 mg
INGREDIENTS: Carbonated water, whiskey, colour (150d), flavour, acids (338, 330, 331), sweeteners (955, 950), caffeine, preservatives (211, 202)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS
1.2
APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Get the facts
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Best Before: see can


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 432 kJ (103 Cal) 131 kJ (31 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 0 g 0 g
- sugars 0 g 0 g
Sodium 15 mg <5 mg
INGREDIENTS: Carbonated water, whiskey, colour (150d), flavour, acids (338, 330, 331), sweeteners (955, 950), caffeine, preservatives (211, 202)
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS
1.2
APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
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org.au
Best Before: see can

Beer # 1:


BREWERY
BEER
99.9% SUGAR FREE
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
BEER BREWED AND BOTTLED BY
BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see bottle
Get the facts
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NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 470 kJ (112 Cal) 142 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2.3 g 0.7 g
- sugars 0.3 g 0.1 g
Sodium <5 mg <5 mg
BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see bottle
Get the facts
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Beer # 2:


BREWERY
BEER
ZERO SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
BEER BREWED AND BOTTLED BY
BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see bottle
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NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 481 kJ (115 Cal) 146 kJ (35 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 3.0 g 0.9 g
- sugars 0 g 0 g
Sodium <5 mg <5 mg
BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
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Beer # 3:


BREWERY
BEER
NO SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
BEER BREWED AND BOTTLED BY
BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see bottle
Get the facts
Drink Wise.
org.au


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 431 kJ (103 Cal) 130 kJ (31 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 0 g 0 g
- sugars 0 g 0 g
Sodium <5 mg <5 mg
BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks 1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Get the facts
Drink Wise. org.au
Best Before: see bottle

Beer # 4:


BREWERY
BEER
99.9% SUGAR FREE
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
BEER BREWED AND BOTTLED BY
BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see bottle
Get the facts
Drink Wise.
org.au

NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	470 kJ (112 Cal)	142 kJ (34 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2.3 g	0.7 g
- sugars	0.3 g	0.1 g
Sodium	<5 mg	<5 mg

Beer # 5:


BREWERY
BEER
ZERO SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
BEER BREWED AND BOTTLED BY
BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Best Before: see bottle
Get the facts
DrinkWise.org.au

NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	481 kJ (115 Cal)	146 kJ (35 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	3.0 g	0.9 g
- sugars	0 g	0 g
Sodium	<5 mg	<5 mg

Beer # 6:


BREWERY
BEER
NO SUGAR
4.5% ALC/VOL
330 mL
NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy
Protein
Fat, total
Carbohydrate
Sodium
BEER BREWED AND BOTTLED BY
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WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
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Best Before: see bottle
Get the facts
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NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 431 kJ (103 Cal) 130 kJ (31 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 0 g 0 g
- sugars 0 g 0 g
Sodium <5 mg <5 mg
BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Standard Drinks
1.2
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Get the facts
Drink Wise.
org.au
Best Before: see bottle

Appendix 2: Labelling information for all types of beverages

Beers:

	99.9% sugar free	Zero sugar	No sugar	Low carb	Lower in carbs* *60% less carbs than regular beer	Zero carbs
Volume	330 mL	330 mL	330 mL	330 mL	330 mL	330 mL
Alcohol content (%ALC/VOL)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
No. standard drinks per package	1.2	1.2	1.2	1.2	1.2	1.2
Serving size	330 mL	330 mL	330 mL	330 mL	330 mL	330 mL
Servings per package	1	1	1	1	1	1
Energy (per serving)	470 kJ (112 Cal)	481 kJ (115 Cal)	431 kJ (103 Cal)	470 kJ (112 Cal)	481 kJ (115 Cal)	431 kJ (103 Cal)
Energy (per 100 mL)	142 kJ (34 Cal)	146 kJ (35 Cal)	130 kJ (31 Cal)	142 kJ (34 Cal)	146 kJ (35 Cal)	130 kJ (31 Cal)
Protein (per serving)	0 g	0 g	0 g	0 g	0 g	0 g
Protein (per 100 mL)	0 g	0 g	0 g	0 g	0 g	0 g
Total fat (per serving)	0 g	0 g	0 g	0 g	0 g	0 g
Total fat (per 100 mL)	0 g	0 g	0 g	0 g	0 g	0 g
Saturated fat (per serving)	0 g	0 g	0 g	0 g	0 g	0 g
Saturated fat (per 100 mL)	0 g	0 g	0 g	0 g	0 g	0 g
Carbohydrate (per serving)	2.3 g	3.0 g	0 g	2.3 g	3.0 g	0 g
Carbohydrate (per 100 mL)	0.7 g	0.9 g	0 g	0.7 g	0.9 g	0 g
Sugars (per serving)	0.3 g	0 g	0 g	0.3 g	0 g	0 g
Sugars (per 100 mL)	0.1 g	0 g	0 g	0.1 g	0 g	0 g
Sodium (per serving)	<5 mg	<5 mg	<5 mg	<5 mg	<5 mg	<5 mg
Sodium (per 100 mL)	<5 mg	<5 mg	<5 mg	<5 mg	<5 mg	<5 mg
No. standard drinks per serving	1.2	1.2	1.2	1.2	1.2	1.2

RTDs:

	Low sugar	2 g sugar	No sugar	Low carb	2 g carbs	Zero carbs
Volume	330 mL	330 mL	330 mL	330 mL	330 mL	330 mL
Alcohol content (%ALC/VOL)	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
No. standard drinks per package	1.2	1.2	1.2	1.2	1.2	1.2
Serving size	330 mL	330 mL	330 mL	330 mL	330 mL	330 mL
Servings per package	1	1	1	1	1	1
Energy (per serving)	465 kJ (111 Cal)	465 kJ (111 Cal)	432 kJ (103 Cal)	465 kJ (111 Cal)	465 kJ (111 Cal)	432 kJ (103 Cal)
Energy (per 100 mL)	141 kJ (34 Cal)	141 kJ (34 Cal)	131 kJ (31 Cal)	141 kJ (34 Cal)	141 kJ (34 Cal)	131 kJ (31 Cal)
Protein (per serving)	0 g	0 g	0 g	0 g	0 g	0 g
Protein (per 100 mL)	0 g	0 g	0 g	0 g	0 g	0 g
Total fat (per serving)	0 g	0 g	0 g	0 g	0 g	0 g
Total fat (per 100 mL)	0 g	0 g	0 g	0 g	0 g	0 g
Saturated fat (per serving)	0 g	0 g	0 g	0 g	0 g	0 g
Saturated fat (per 100 mL)	0 g	0 g	0 g	0 g	0 g	0 g
Carbohydrate (per serving)	2 g	2 g	0 g	2 g	2 g	0 g
Carbohydrate (per 100 mL)	0.6 g	0.6 g	0 g	0.6 g	0.6 g	0 g
Sugars (per serving)	2 g	2 g	0 g	2 g	2 g	0 g
Sugars (per 100 mL)	0.6 g	0.6 g	0 g	0.6 g	0.6 g	0 g
Sodium (per serving)	15 mg	15 mg	15 mg	15 mg	15 mg	15 mg
Sodium (per 100 mL)	<5 mg	<5 mg	<5 mg	<5 mg	<5 mg	<5 mg
No. standard drinks per serving	1.2	1.2	1.2	1.2	1.2	1.2

Range of flavours and ingredients lists for the six different types of RTDs:

Claim	Beverage name	Ingredients
Low sugar	Vodka soda Watermelon & mint	Soda water, vodka, sugar, natural watermelon flavour, natural mint flavour, acid (330)
2 g sugar	Alcoholic sparkling water Peach passion	Sparkling water, alcohol, apple juice from concentrate, natural flavours, acids (330, 331)
No sugar	Rum & dry	Carbonated water, rum, acid (330), flavours, preservative (211), colour (150d), sweeteners (955, 950)
Low sugar	Gin fizz	Sparkling water, gin, sugar, lemon juice, cucumber, acid (330)
2 g sugar	Vodka lemon, lime	Soda water, vodka, sucrose, flavours, acid (330)
No sugar	Whiskey & cola	Carbonated water, whiskey, colour (150d) flavour, acids (338, 330, 331), sweeteners (955, 950), caffeine, preservatives (211, 202)
Low carb	Gin fizz	Sparkling water, gin, sugar, lemon juice, cucumber, acid (330)
2 g carbs	Vodka lemon, lime	Soda water, vodka, sucrose, flavours, acid (330)
Zero carbs	Whiskey & cola	Carbonated water, whiskey, colour (150d) flavour, acids (338, 330, 331), sweeteners (955, 950), caffeine, preservatives (211, 202)
Low carb	Vodka soda Watermelon & mint	Soda water, vodka, sugar, natural watermelon flavour, natural mint flavour, acid (330)
2 g carbs	Alcoholic sparkling water Peach passion	Sparkling water, alcohol, apple juice from concentrate, natural flavours, acids (330, 331)
Zero carbs	Rum & dry	Carbonated water, rum, acid (330), flavours, preservative (211), colour (150d), sweeteners (955, 950)

Appendix 3: Survey instrument

Overview:

[show after Question # 6 to prevent participation bias]

This survey will ask about how you use food labels, your consumption of alcoholic beverages, and how you perceive labels on alcoholic beverages.

The survey will take around 20 minutes to complete. Thank you for your participation.

Section 1: Demographics/baseline measures

#	Purpose	Variable [Code]	Question, Response Options [Code]
1	Screening/demographics/ quota	Age	What is your age? [Numeric input] [Terminate if < 18 years old]
2	Demographics/quota	Gender	How do you identify? • Male [1] • Female [2] • Nonbinary [3] • Another term (Please specify) [4] [Free text field] • Prefer not to say [98] [Single response option]

3	Demographics/soft quota	Location	What is your postcode? [Autocode to states/region]
4	Screening	Consumption of alcohol in the past 12 months [consum12m]	Have you done these things in the past 12 months? Rows: [randomise the order] • Consumed an alcoholic beverage • Renovated your house • Bought a new car • Went for a holiday overseas • Started to learn a new language Column: Yes/No [Terminate if Not consumed an alcoholic beverage]
5	Screening	Work in the alcohol industry [workIndustry]	Are you currently employed in the alcohol industry? This means that you work for an organisation that manufactures or mainly sells alcoholic beverages (e.g. an alcoholic beverage company, a bar or a bottle shop) • Yes [1] • No [0] [Terminate if respond Yes]
6	Screening/Quota/Use for randomisation in Section 2	Type of alcoholic beverage consumed in the past 12 months [AlcTypeCons]	Have you consumed the following alcoholic beverages within the past 12 months? Please select all that apply:

			▪ 'Ready to drink' premixed spirits (RTDs) (RTDs are beverages made with a spirit and a non-alcoholic mixer such as juice or a soft drink e.g. flavoured vodka mixes, rum and cola, alcoholic seltzers, etc.) ▪ Beer ▪ Wine ▪ None of the above [exclusive] [98] [Randomise order of responses, except 'None of the above'] [Terminate if do not respond RTDs or Beer]. [For those who select both RTDs and Beer, randomly allocate participants to one of those beverages for Section 2 questions, using quotas for approximate equal allocation to each type of beverage].
7	Demographics	Level of alcohol consumption Q1 [LevelConsum1]	How often do you have a drink containing alcohol? • Monthly or less [1] • 2-4 times a month [2] • 2-3 times a week [3] • 4 or more times a week [4] [single response]

8	Demographics	Level of alcohol consumption Q2 [LevelConsum2]	How many drinks containing alcohol do you have on a typical day when you are drinking? • 1 or 2 [0] • 3 or 4 [1] • 5 or 6 [2] • 7 to 9 [3] • 10 or more [4] [single response]
9	Demographics	Level of alcohol consumption Q3 [LevelConsum3]	How often do you have six or more drinks on one occasion? • Never [0] • Less than monthly [1] • Monthly [2] • Weekly [3] • Daily or almost daily [4] [single response]
10	Demographics/quota	Education	What is the highest level of formal education you have **completed**? • High school or below [1] • Vocational/trade qualification [2] • Undergraduate degree [3] • Postgraduate degree [4] [Single response option]

11	Demographics/soft quota	Cultural Background AU [BackgroundAU]	[Show only to people residing in Australia] How would you describe your cultural background? (Please select all that apply) ▪ Aboriginal and/or Torres Strait Islander [1] ▪ English [2] ▪ Irish [3] ▪ Scottish [4] ▪ Chinese [5] ▪ Italian [6] ▪ German [7] ▪ Indian [8] ▪ Greek [9] ▪ Dutch [10] ▪ Australian [11] ▪ Other (please specify): [FREE TEXT] [12] ▪ Prefer not to say [EXCLUSIVE] [98] Examples of 'Other (please specify)' are: Spanish, Vietnamese, Hmong, Welsh, Kurdish, Lebanese. [Multiple responses possible]
12	Demographics/soft quota	Cultural Background NZ [BackgroundNZ]	[Show only to people residing in New Zealand]

			How would you describe your cultural background? (Please select all that apply) ▪ New Zealand European [1] ▪ Māori [2] ▪ Pacific Islander [3] ▪ Chinese [4] ▪ Indian [5] ▪ Other (please specify): [FREE TEXT] [6] ▪ Prefer not to say [EXCLUSIVE] [98] Examples of 'Other (please specify)' are: Filipino, Korean, Dutch, Australian, and Middle Eastern. [Multiple responses possible]
13	Demographics	Household Income [Income]	Which one of the following categories best describes your household's total annual income (before tax)? Please include the income of everyone in your household. If you don't know the exact amount, then please take your best guess. • Under $25,000 • $25,000 - $35,000 • $35,001 - $45,000 • $45,001 - $55,000 • $55,001 - $65,000 • $65,001 - $75,000

			• $75,001 - $85,000 • $85,001 - $105,000 • $105,001 - $115,000 • $115,001 - $125,000 • $125,001 - $145,000 • $145,001 - $165,000 • $165,001 - $185,000 • $185,001 - $205,000 • $205,001 - $225,000 • $225,001 - $245,000 • $245,001 - $265,000 • $265,001 - $285,000 • Above $285,000 • Prefer not to say [98] [Single response option]
14	Demographics	Use of nutrition information on food labels [LabelUse]	How often do you read nutrition information on food and beverage labels? [Matrix: Never, rarely, occasionally, often, always]
15	Demographics	Understanding of nutrition information on food labels [LabelUnderstand]	Do you think nutrition information on food and beverage labels is easy or hard to understand? [Matrix: 1-7 scale, where 1 = very hard to understand; 7 = very easy to understand]

16	Demographics	Importance of health and weight in food and drink choice [HealthWeight]	It is important to me that the food and beverages I consume on a typical day: • Are low in calories [cal] • Help me control my weight [weight] • Are low in fat [fat] • Keep me healthy [health] [Matrix for each: 1-7 scale, where 1 = not at all important; 7 = very important]
17	Demographics	Diabetes status [Diabetes]	Do you have diabetes? • Yes [1] • No [0] [single response]

Section 2: Random allocation to one type of label on one type of alcoholic beverage

[Participants will be pseudo-randomly allocated to view one type of alcoholic beverage (RTDs or beers), using quotas for approximate equal allocation with the prerequisite that they had consumed that type of beverage in the past year (Question 6). Each beverage group will then be randomly allocated to view one of five labels (Label A, B, C, D or E) on their allocated beverage. This will result in a total of 10 different groups (5 types of labels multiplied by 2 types of beverages).

Randomly allocated if quota is open. Make sure we have same number of completes for each label for each alcoholic beverage].

For the next section of the survey, you will be shown 6 different [RTD cans/beer bottles]. You will be asked a series of questions about each of these 6 [RTDs/beers]. For each [RTD/beer], you will be shown four images. The left two images will show the front and back of the [can/bottle]. The right two images will show zoomed versions of the front and back labels so they can be easily read.

Please click ‘next’ to view the first [RTD/beer].

[Participants will be asked Questions 18-24 six times (once for each of the six types of beers or RTDs they will be shown) i.e. ask Question 18 six times, then ask Question 19 six times, etc. Participants will be told when a new question is going to be asked. For example, after being asked Question 18 six times, they will be shown a new page which tells them: “Next we are going to ask you how healthy each [beer/RTD] is. Please click ‘next’ to view the first [beer/RTD].”

#	Purpose	Variable [Code]	Question, Response Options [Code]
18	Key measure	Consumption intentions [ConsumInt]	Imagine that this type of [beer/RTD] was available to you. How much of this [beer/RTD] would you choose to consume, and over what time period? [additional instructions when rating RTD/beer #2-6: In this scenario, you have not consumed any other type of [RTD/beer] that you have already been shown in this survey.] Please enter the number of [bottles/cans] that you would choose to consume: _____ [bottles/cans] Please select how often you would choose to consume that number of [bottles/cans]: [drop down list: per day/per week/per fortnight/per month]
19	Key measure	Perceived healthiness [Perchealth]	How **healthy** is this [beer/RTD]? [Matrix: 1-7 scale, where 1 = not at all healthy; 7 = very healthy]
	Attention check question	Attention check 1	Please select the option that is not a season: • Summer

			• Spring • Autumn • Winter • Rainbow [correct answer] [single response option]
20	Key measure	Perceived harmfulness to health [Percharm]	How **harmful to health** is this [beer/RTD]? [Matrix: 1-7 scale, where 1 = not harmful to health at all; 7 = very harmful to health)
21	Key measure	Perceived energy content [PercEnergy]	How low or high do you consider this [beer/RTD] to be in **energy (kilojoules/calories)**? [Matrix: 1-7 scale, where 1 = very low in energy; 7 = very high in energy]
22	Key measure	Perceived alcohol content [PercAlc]	How low or high do you consider this [beer/RTD] to be in **alcohol**? [Matrix: 1-7 scale, where 1 = very low in alcohol; 7 = very high in alcohol]
23	Key measure	Compensatory behavioural intentions [comensate]	If you drank this [RTD/beer] the next time you were drinking alcohol, how likely would you be to: • eat less than usual in one or more meals to make up for the kilojoules/calories in this drink? [EatLess] • exercise more than usual to make up for the kilojoules/calories in this drink? [Exercise]

			• eat low-kilojoule/calorie, low-fat, or low-sugar foods in one or more meals to make up for the kilojoules/calories in this drink? [EatLow] [matrix for each item: 1-7 scale, where 1 = not likely at all; 7 = very likely] [show each item in a random order]
	Attention check question	Attention check 2	Please select the flower from the options below: • Green • Rose [correct answer] • Table • Ocean • Rabbit [single response option] [Exclude from dataset if failed both Attention check 1 and Attention check 2]
24	Key measure	Choice to best avoid weight gain [AvoidWeight]	Imagine someone wanted to choose a beverage that would best help them avoid weight gain. Which of the following [beers/RTDs] do you think would be the **best** choice? Please select drink 1 or drink 2. • [show zoomed front-of-pack and back-of-pack labels of [beer/RTD] from their allocated condition (Label A, B, C D or E);

			• [show zoomed front-of-pack and back-of-pack labels of an alcohol-free [beer/RTD]; this product will be identical to the beverage shown as the first option, except that it will have an 'alcohol free' claim and the energy content and alcohol content will reflect values of an alcohol-free product. All other nutrition information will be the same. [single response] [show the two options in a randomised order, with the first labelled as 'drink 1' and the second labelled as 'drink 2']

Section 3: Questions after viewing four types of alcoholic beverages:

[All participants will see back-of-pack images of four types of alcoholic beverages: beer, RTD, wine, and spirit. All beverages will have no claims. Participants will be randomly allocated to either Group 1 or Group 2. Randomly allocated if quota is open. Make sure we have same number of completes for each of the two groups.

Group 1 ('consistent' format): all four beverages will have an energy statement.

Group 2 ('inconsistent' format): two of the beverages will have a nutrition information panel (NIP), whereas two of the beverages will have an energy statement. Within group 2, the beverage with each format (NIP or energy statement) will be random with quotas to ensure that the same number of participants within group 2 will see each possible beverage type/format combination.]

#	Purpose	Variable [Code]	Question, Response Options [Code]
25	Key measure	Consistency in labelling Q1 [Consis1]	Imagine that someone was going to have one serving of an alcoholic beverage and wanted to choose the

			alcoholic beverage that had the **least amount of energy per serving**. Please rank the following types of alcoholic beverages from least to most amount of energy based on **one serving:** Please rank the following in order (Number 1 = least amount of energy; Number 4 = most amount of energy) • Wine [1] • Beer [2] • RTD [3] • Spirits [4] [dropdown list shown next to each beverage: 1 (least amount of energy, 2, 3, 4 (most amount of energy)] [randomised order of the images]
26	Key measure	Consistency in labelling Q2 [Consis2]	How easy or hard was it for you to answer the previous question? [Matrix: 1-7 scale, where 1 = very hard; 7 = very easy]

Closing:

Food Standards Australia New Zealand would like to thank you for your participation in this survey. Should you be interested in the results, please keep an eye on our website later in the year, or sign up to receive Food Standards News to be notified when the results are released.

If you are concerned that you or someone you care about might be struggling with alcohol addiction, there's help available:

[link for NZ participants]: https://info.health.nz/services-support/alcohol-and-drug-services/

[link for Australian participants]: https://www.health.gov.au/topics/alcohol/alcohol-contacts

Appendix 4: Images of the alcohol-free RTD and beer alternatives

Alcohol-free RTD # 1:

NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL

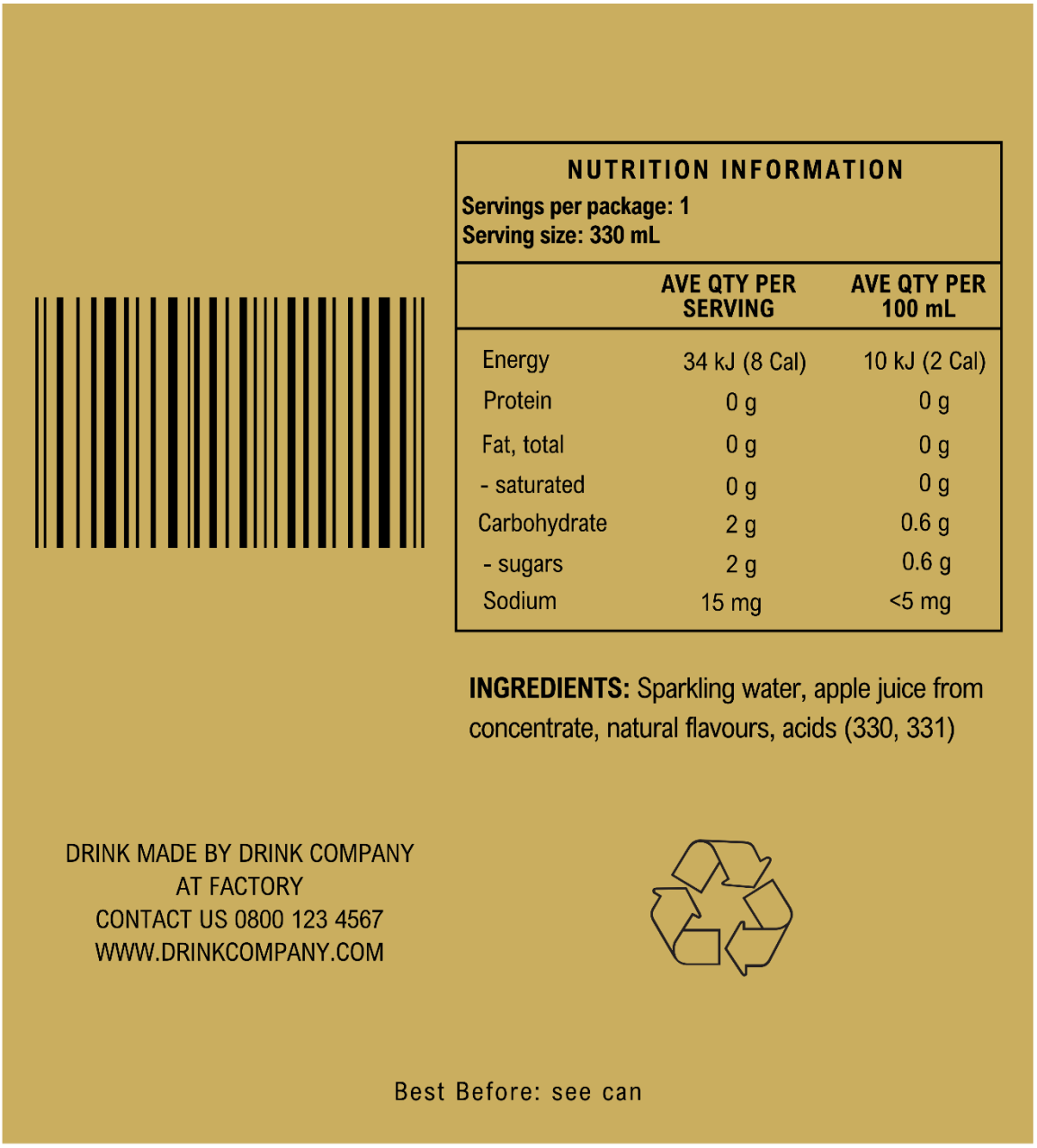
	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	34 kJ (8 Cal)	10 kJ (2 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2 g	0.6 g
- sugars	2 g	0.6 g
Sodium	15 mg	<5 mg

INGREDIENTS: Soda water, sugar, natural watermelon flavour, natural mint flavour, acid (330)

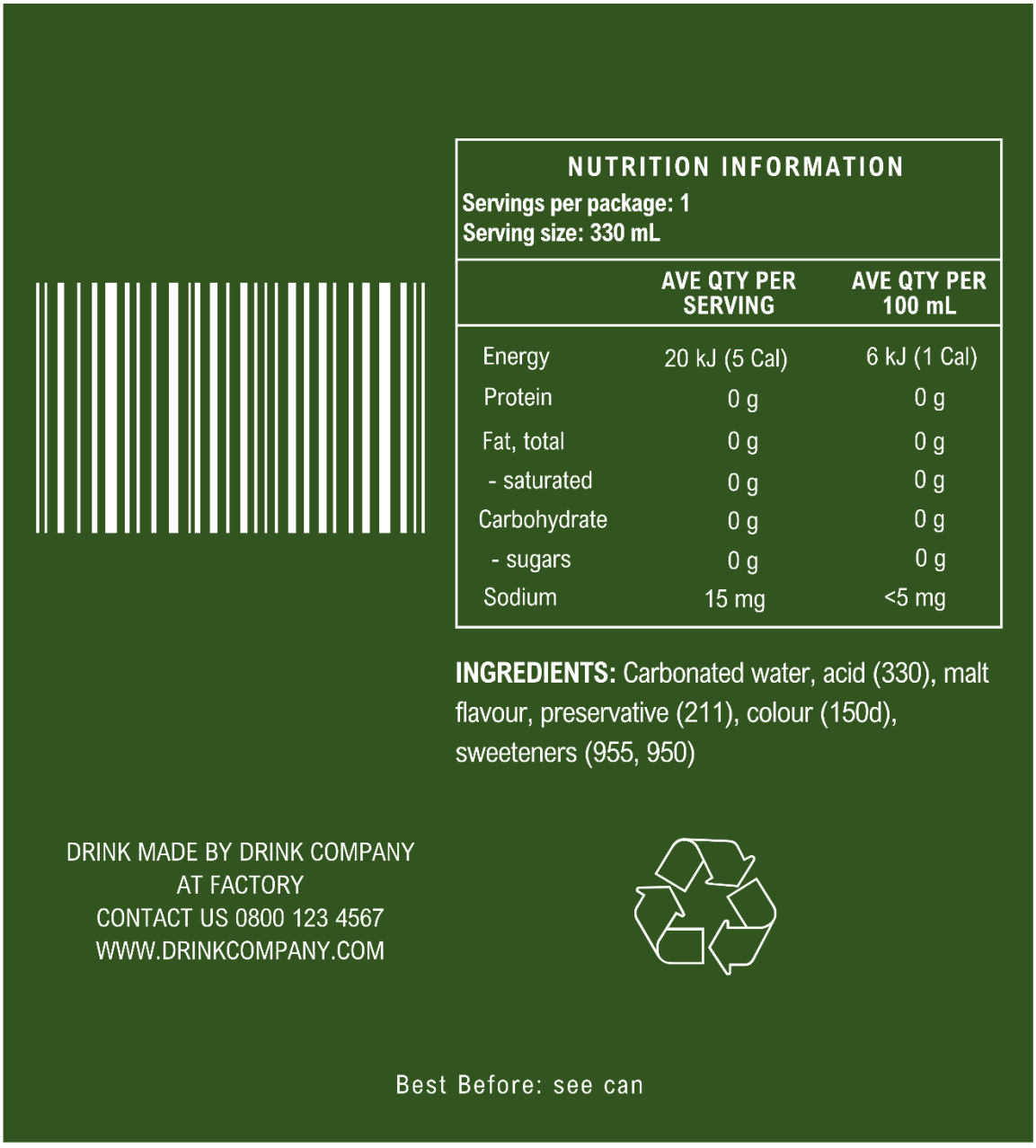
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM

Best Before: see can

Alcohol-free RTD # 2:


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 34 kJ (8 Cal) 10 kJ (2 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Sparkling water, apple juice from concentrate, natural flavours, acids (330, 331)
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
Best Before: see can

Alcohol-free RTD # 3:



NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	20 kJ (5 Cal)	6 kJ (1 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	0 g	0 g
- sugars	0 g	0 g
Sodium	15 mg	<5 mg

Alcohol-free RTD # 4:

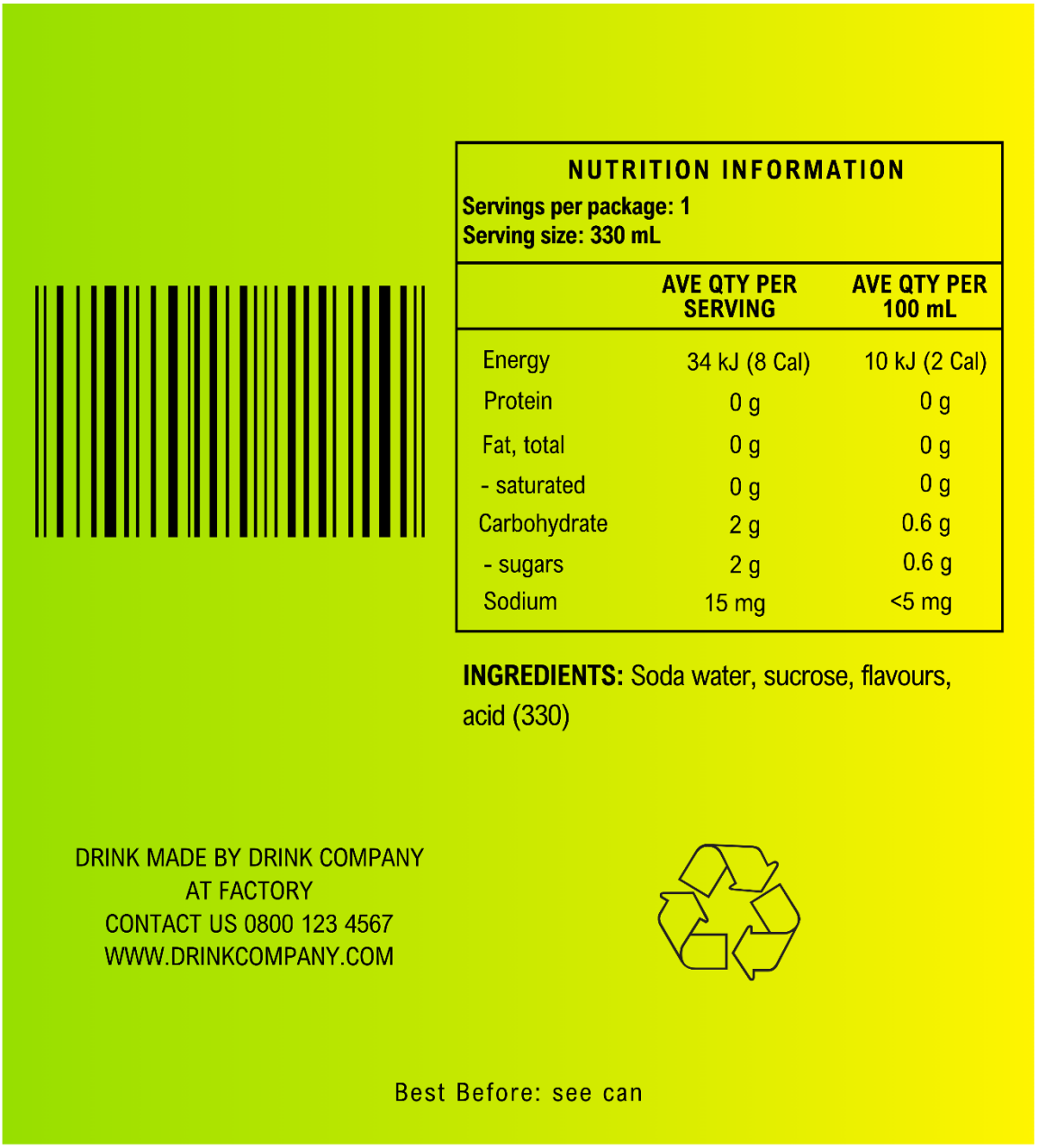
NUTRITION INFORMATION **Servings per package: 1** **Serving size: 330 mL**		
	AVE QTY PER SERVING	**AVE QTY PER 100 mL**
Energy	34 kJ (8 Cal)	10 kJ (2 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2 g	0.6 g
- sugars	2 g	0.6 g
Sodium	15 mg	<5 mg

INGREDIENTS: Sparkling water, sugar, lemon juice, cucumber, acid (330)

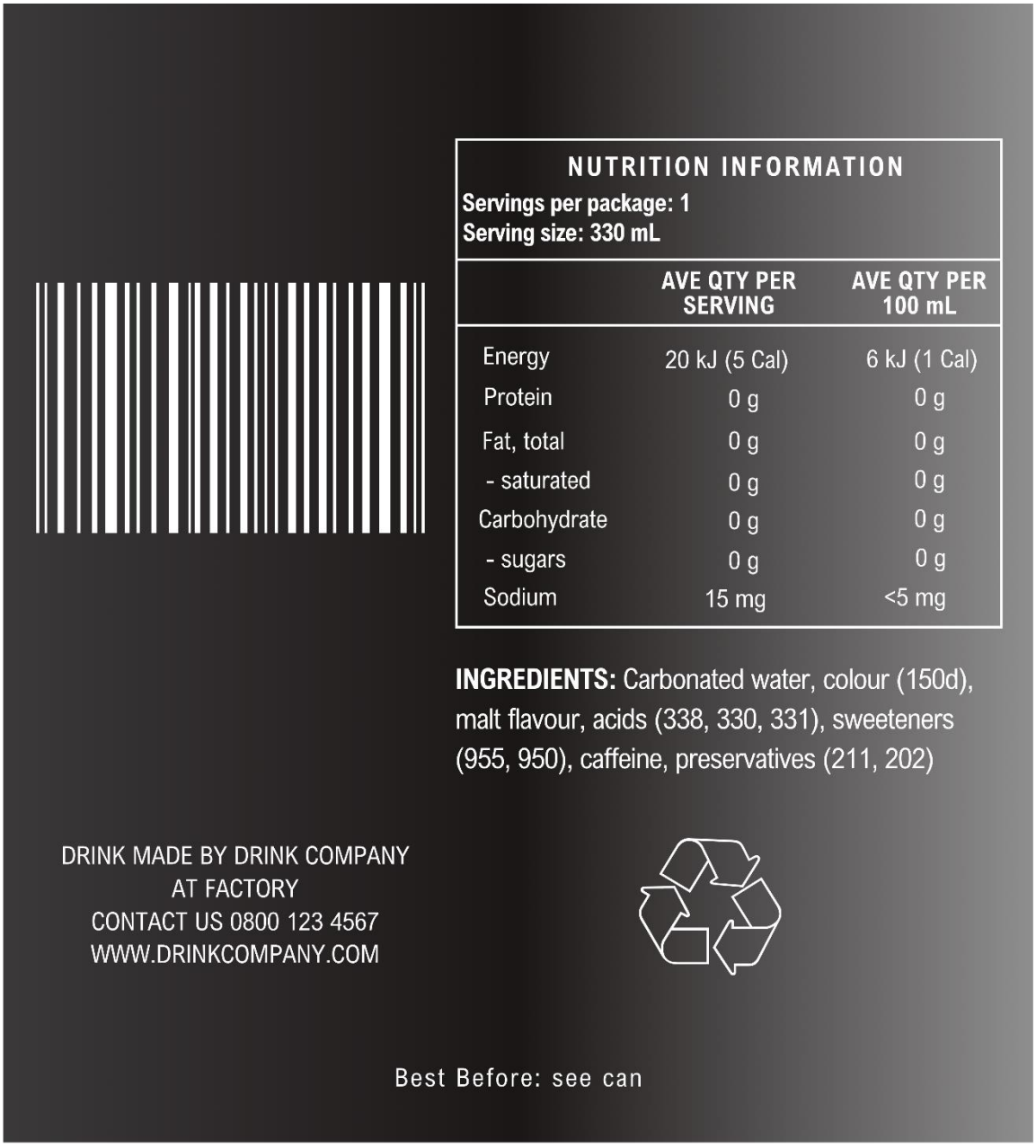
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM

Best Before: see can

Alcohol-free RTD # 5:


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 34 kJ (8 Cal) 10 kJ (2 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Soda water, sucrose, flavours, acid (330)
DRINK MADE BY DRINK COMPANY
AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
Best Before: see can

Alcohol-free RTD # 6:



NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	20 kJ (5 Cal)	6 kJ (1 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	0 g	0 g
- sugars	0 g	0 g
Sodium	15 mg	<5 mg

Alcohol-free beer # 1:


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 40 kJ (9 Cal) 12 kJ (3 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2.3 g 0.7 g
- sugars 0.3 g 0.1 g
Sodium <5 mg <5 mg
BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM
Best Before: see bottle

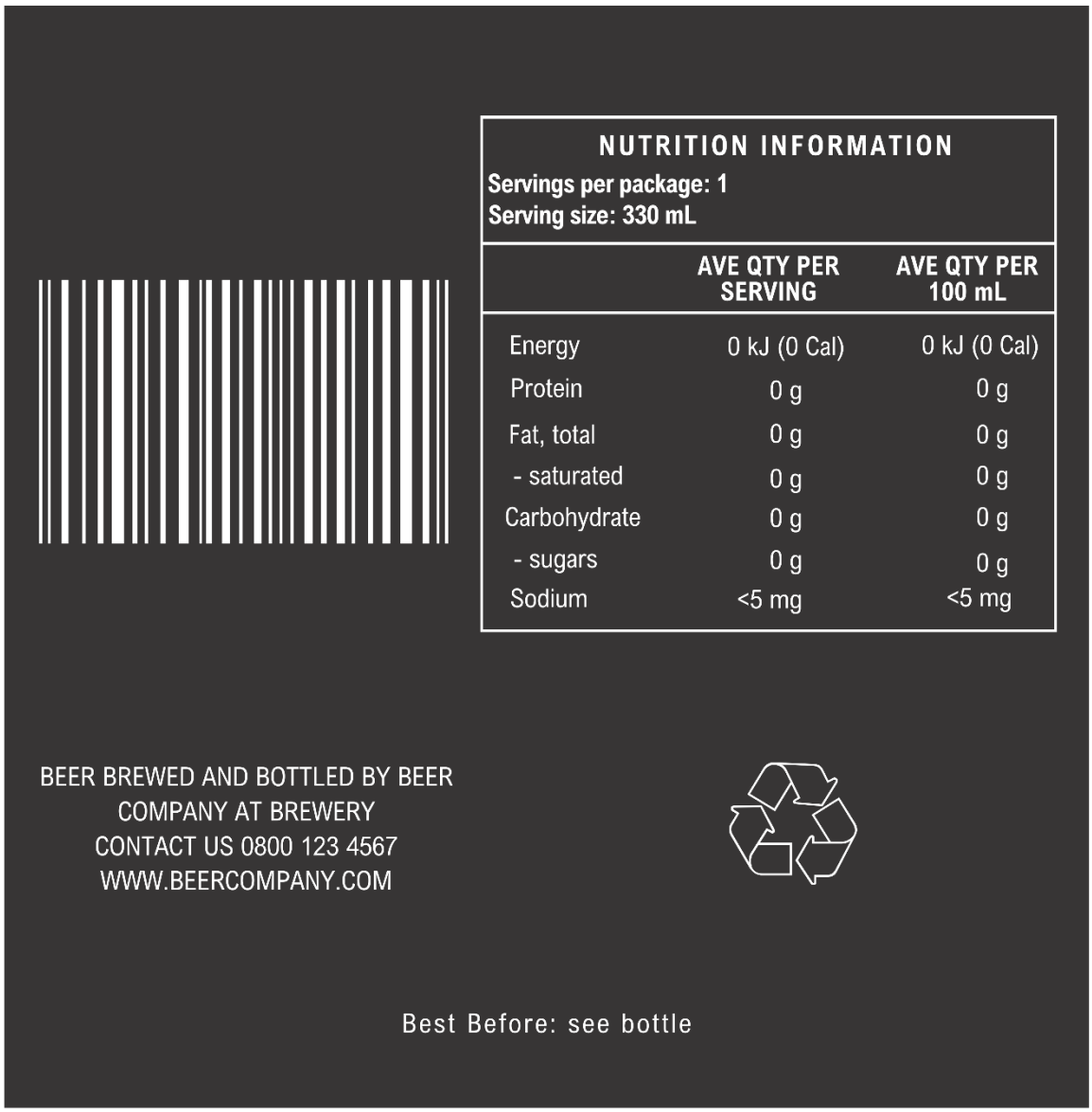
Alcohol-free beer # 2:

NUTRITION INFORMATION Servings per package: 1 Serving size: 330 mL		
	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	50 kJ (12 Cal)	15 kJ (4 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	3.0 g	0.9 g
- sugars	0 g	0 g
Sodium	<5 mg	<5 mg

BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM

Best Before: see bottle

Alcohol-free beer # 3:



NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	0 kJ (0 Cal)	0 kJ (0 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	0 g	0 g
- sugars	0 g	0 g
Sodium	<5 mg	<5 mg

Alcohol-free beer # 4:

NUTRITION INFORMATION Servings per package: 1 Serving size: 330 mL		
	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	40 kJ (9 Cal)	12 kJ (3 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	2.3 g	0.7 g
- sugars	0.3 g	0.1 g
Sodium	<5 mg	<5 mg

BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM

Best Before: see bottle

Alcohol-free beer # 5:

NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	50 kJ (12 Cal)	15 kJ (4 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	3.0 g	0.9 g
- sugars	0 g	0 g
Sodium	<5 mg	<5 mg

Alcohol-free beer # 6:

NUTRITION INFORMATION

Servings per package: 1
Serving size: 330 mL

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	0 kJ (0 Cal)	0 kJ (0 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	0 g	0 g
- sugars	0 g	0 g
Sodium	<5 mg	<5 mg

BEER BREWED AND BOTTLED BY BEER COMPANY AT BREWERY
CONTACT US 0800 123 4567
WWW.BEERCOMPANY.COM

Best Before: see bottle

Appendix 5: Images of the beer, RTD, wine and spirits for the energy ranking task

The following images show the four different types of alcoholic beverages that participants were required to rank by energy content. All example images contain NIPs. However, note that there were other versions of the images that had energy statements (rather than NIPs) – see ‘Methods - Measures’ section.

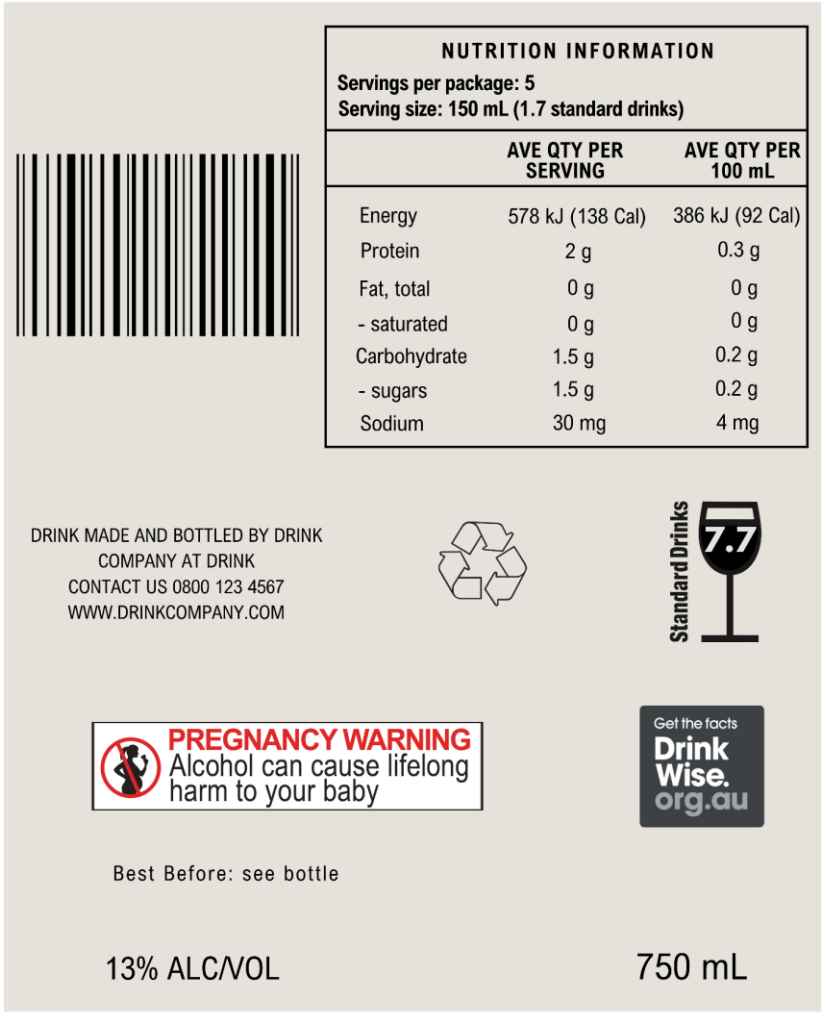
Beer:

RTD:


NUTRITION INFORMATION
Servings per package: 1
Serving size: 330 mL (1.2 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 465 kJ (111 Cal) 141 kJ (34 Cal)
Protein 0 g 0 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 2 g 0.6 g
- sugars 2 g 0.6 g
Sodium 15 mg <5 mg
INGREDIENTS: Soda water, vodka, sugar, natural raspberry flavour, acid (330)
DRINK MADE BY DRINK COMPANY AT FACTORY
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
STANDARD DRINKS 1.2 APPROX.
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Get the facts Drink Wise. org.au
Best Before: see can
4.5% ALC/VOL
330 mL

Wine:


NUTRITION INFORMATION
Servings per package: 5
Serving size: 150 mL (1.7 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
DRINK MADE AND BOTTLED BY DRINK COMPANY AT DRINK
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
Standard Drinks 7.7
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Get the facts Drink Wise. org.au
Best Before: see bottle
13% ALC/VOL
750 mL


NUTRITION INFORMATION
Servings per package: 5
Serving size: 150 mL (1.7 standard drinks)
AVE QTY PER SERVING
AVE QTY PER 100 mL
Energy 578 kJ (138 Cal) 386 kJ (92 Cal)
Protein 2 g 0.3 g
Fat, total 0 g 0 g
- saturated 0 g 0 g
Carbohydrate 1.5 g 0.2 g
- sugars 1.5 g 0.2 g
Sodium 30 mg 4 mg
DRINK MADE AND BOTTLED BY DRINK COMPANY AT DRINK
CONTACT US 0800 123 4567
WWW.DRINKCOMPANY.COM
Standard Drinks 7.7
PREGNANCY WARNING
Alcohol can cause lifelong harm to your baby
Get the facts Drink Wise. org.au
Best Before: see bottle
13% ALC/VOL
750 mL

Spirits:

NUTRITION INFORMATION
Servings per package: 23.3
Serving size: 30 mL (0.9 standard drinks)

	AVE QTY PER SERVING	AVE QTY PER 100 mL
Energy	326 kJ (78 Cal)	1075 kJ (257 Cal)
Protein	0 g	0 g
Fat, total	0 g	0 g
- saturated	0 g	0 g
Carbohydrate	0.7 g	0.1 g
- sugars	0.7 g	0.1 g
Sodium	21 mg	3 mg

Appendix 6: Summary of participant responses regarding the number of drinks they would consume per month (2,553)

Note: Excluded responses are in red text (these were only responses for drinks 4-6).

Drink 1:

Response (number of drinks per month)	Number of participants	Percentage (based on total sample)	Converted to number of drinks per day
.00	489	19.2	0.0
1.00	334	13.1	0.0
2.00	291	11.4	0.1
3.00	53	2.1	0.1
4.00	317	12.4	0.1
5.00	26	1.0	0.2
6.00	87	3.4	0.2
7.00	2	0.1	0.3
8.00	269	10.5	0.3
9.00	4	0.2	0.3
10.00	21	0.8	0.4

12.00	107	4.2	0.4
14.00	3	0.1	0.5
15.00	3	0.1	0.5
16.00	98	3.8	0.6
18.00	2	0.1	0.6
20.00	37	1.4	0.7
23.00	1	0.0	0.8
24.00	77	3.0	0.9
28.00	6	0.2	1.0
30.00	90	3.5	1.1
32.00	12	0.5	1.1
36.00	2	0.1	1.3
40.00	12	0.5	1.4
48.00	16	0.6	1.7
56.00	1	0.0	2.0
60.00	100	3.9	2.1
72.00	1	0.0	2.6

80.00	3	0.1	2.9
90.00	25	1.0	3.2
96.00	1	0.0	3.4
120.00	24	0.9	4.3
132.00	1	0.0	4.7
150.00	11	0.4	5.4
180.00	15	0.6	6.4
210.00	1	0.0	7.5
240.00	1	0.0	8.6
300.00	6	0.2	10.7
360.00	3	0.1	12.9
450.00	1	0.0	16.1

Drink 2:

Response (number of drinks per month)	Number of participants	Percentage (based on total sample)	Converted to number of drinks per day
.00	511	20.0	0.0

1.00	313	12.3	0.0
2.00	280	11.0	0.1
3.00	43	1.7	0.1
4.00	349	13.7	0.1
5.00	26	1.0	0.2
6.00	86	3.4	0.2
7.00	2	0.1	0.3
8.00	253	9.9	0.3
10.00	23	0.9	0.4
11.00	2	0.1	0.4
12.00	123	4.8	0.4
13.00	1	0.0	0.5
14.00	3	0.1	0.5
16.00	84	3.3	0.6
18.00	1	0.0	0.6
20.00	30	1.2	0.7
24.00	76	3.0	0.9

26.00	1	0.0	0.9
28.00	3	0.1	1.0
30.00	100	3.9	1.1
32.00	20	0.8	1.1
36.00	2	0.1	1.3
40.00	8	0.3	1.4
44.00	1	0.0	1.6
48.00	17	0.7	1.7
56.00	1	0.0	2.0
60.00	98	3.8	2.1
72.00	1	0.0	2.6
80.00	3	0.1	2.9
90.00	25	1.0	3.2
96.00	2	0.1	3.4
104.00	1	0.0	3.7
120.00	23	0.9	4.3
150.00	11	0.4	5.4

180.00	17	0.7	6.4
210.00	2	0.1	7.5
240.00	1	0.0	8.6
300.00	4	0.2	10.7
360.00	3	0.1	12.9
390.00	1	0.0	13.9
450.00	1	0.0	16.1
466.00	1	0.0	16.6

Drink 3:

Response (number of drinks per month)	Number of participants	Percentage (based on total sample)	Converted to number of drinks per day
.00	767	30.0	0.0
1.00	313	12.3	0.0
2.00	225	8.8	0.1
3.00	34	1.3	0.1
4.00	279	10.9	0.1

5.00	21	0.8	0.2
6.00	63	2.5	0.2
7.00	1	0.0	0.3
8.00	223	8.7	0.3
10.00	16	0.6	0.4
12.00	101	4.0	0.4
14.00	2	0.1	0.5
16.00	76	3.0	0.6
18.00	2	0.1	0.6
20.00	26	1.0	0.7
24.00	62	2.4	0.9
26.00	1	0.0	0.9
28.00	2	0.1	1.0
30.00	91	3.6	1.1
32.00	19	0.7	1.1
36.00	1	0.0	1.3
40.00	13	0.5	1.4

44.00	2	0.1	1.6
48.00	16	0.6	1.7
56.00	1	0.0	2.0
60.00	90	3.5	2.1
90.00	36	1.4	3.2
96.00	2	0.1	3.4
120.00	23	0.9	4.3
150.00	16	0.6	5.4
152.00	1	0.0	5.4
180.00	15	0.6	6.4
240.00	2	0.1	8.6
300.00	7	0.3	10.7
360.00	2	0.1	12.9
390.00	1	0.0	13.9
450.00	1	0.0	16.1

Drink 4:

Response (number of drinks per month)	Number of participants	Percentage (based on total sample)	Converted to number of drinks per day
.00	574	22.5	0.0
1.00	352	13.8	0.0
2.00	270	10.6	0.1
3.00	44	1.7	0.1
4.00	327	12.8	0.1
5.00	21	0.8	0.2
6.00	76	3.0	0.2
7.00	2	0.1	0.3
8.00	254	9.9	0.3
9.00	2	0.1	0.3
10.00	18	0.7	0.4
11.00	1	0.0	0.4
12.00	110	4.3	0.4
14.00	2	0.1	0.5

16.00	93	3.6	0.6
18.00	2	0.1	0.6
20.00	26	1.0	0.7
24.00	56	2.2	0.9
28.00	3	0.1	1.0
30.00	92	3.6	1.1
32.00	18	0.7	1.1
36.00	2	0.1	1.3
40.00	6	0.2	1.4
48.00	18	0.7	1.7
56.00	1	0.0	2.0
60.00	94	3.7	2.1
80.00	1	0.0	2.9
88.00	2	0.1	3.1
90.00	24	0.9	3.2
120.00	22	0.9	4.3
150.00	10	0.4	5.4

180.00	22	0.9	6.4
240.00	1	0.0	8.6
300.00	4	0.2	10.7
360.00	1	0.0	12.9
450.00	1	0.0	16.1
720.00	1	0.0	25.7

Drink 5:

Response (number of drinks per month)	Number of participants	Percentage (based on total sample)	Converted to number of drinks per day
.00	371	14.5	0.0
1.00	315	12.3	0.0
2.00	303	11.9	0.1
3.00	46	1.8	0.1
4.00	379	14.8	0.1
5.00	32	1.3	0.2
6.00	86	3.4	0.2

7.00	4	0.2	0.3
8.00	278	10.9	0.3
9.00	2	0.1	0.3
10.00	30	1.2	0.4
12.00	129	5.1	0.4
14.00	2	0.1	0.5
15.00	1	0.0	0.5
16.00	97	3.8	0.6
18.00	1	0.0	0.6
20.00	35	1.4	0.7
24.00	90	3.5	0.9
25.00	1	0.0	0.9
28.00	1	0.0	1.0
30.00	91	3.6	1.1
32.00	20	0.8	1.1
36.00	1	0.0	1.3
40.00	21	0.8	1.4

48.00	15	0.6	1.7
56.00	1	0.0	2.0
60.00	95	3.7	2.1
68.00	1	0.0	2.4
72.00	3	0.1	2.6
80.00	1	0.0	2.9
84.00	1	0.0	3.0
88.00	1	0.0	3.1
90.00	30	1.2	3.2
120.00	23	0.9	4.3
150.00	13	0.5	5.4
180.00	17	0.7	6.4
210.00	1	0.0	7.5
240.00	1	0.0	8.6
268.00	1	0.0	9.6
300.00	6	0.2	10.7
360.00	2	0.1	12.9

450.00	1	0.0	16.1
660.00	1	0.0	23.6
690.00	1	0.0	24.6
752.00	1	0.0	26.9
1980.00	1	0.0	70.7

Drink 6:

Response (number of drinks per month)	Number of participants	Percentage (based on total sample)	Converted to number of drinks per day
.00	726	28.4	0.0
1.00	295	11.6	0.0
2.00	211	8.3	0.1
3.00	38	1.5	0.1
4.00	297	11.6	0.1
5.00	22	0.9	0.2
6.00	66	2.6	0.2
7.00	1	0.0	0.3

8.00	225	8.8	0.3
9.00	1	0.0	0.3
10.00	21	0.8	0.4
11.00	1	0.0	0.4
12.00	111	4.3	0.4
14.00	4	0.2	0.5
15.00	2	0.1	0.5
16.00	76	3.0	0.6
18.00	2	0.1	0.6
20.00	26	1.0	0.7
24.00	73	2.9	0.9
28.00	6	0.2	1.0
30.00	93	3.6	1.1
32.00	18	0.7	1.1
40.00	13	0.5	1.4
48.00	20	0.8	1.7
56.00	1	0.0	2.0

60.00	99	3.9	2.1
72.00	2	0.1	2.6
80.00	1	0.0	2.9
90.00	30	1.2	3.2
96.00	3	0.1	3.4
104.00	1	0.0	3.7
120.00	26	1.0	4.3
150.00	10	0.4	5.4
180.00	17	0.7	6.4
240.00	3	0.1	8.6
300.00	6	0.2	10.7
360.00	3	0.1	12.9
450.00	1	0.0	16.1
480.00	1	0.0	17.1
720.00	1	0.0	25.7

Appendix 7: Participant characteristics across the 10 groups (type of label by type of alcoholic beverage)

	Beer					RTD				
	Label A (n = 256)	**Label B (n = 256)**	**Label C (n = 256)**	**Label D (n = 256)**	**Label E (n = 255)**	**Label A (n = 255)**	**Label B (n = 253)**	**Label C (n = 254)**	**Label D (n = 256)**	**Label E (n = 256)**
Country (%):										
Australia	50.78	44.92	48.05	50.78	47.84	52.16	50.59	48.03	44.92	48.05
New Zealand	49.22	55.08	51.95	49.22	52.16	47.84	49.41	51.97	55.08	51.95
Age, mean (SD)	51.14 (17.64)	49.38 (16.51)	51.32 (16.98)	48.96 (17.12)	50.44 (17.93)	42.46 (15.83)	40.97 (15.77)	41.93 (15.88)	41.91 (15.65)	41.91 (13.59)
Gender (%):										
Male	57.42	56.64	57.42	56.64	56.08	41.18	35.18	35.83	35.55	38.67
Female	41.41	42.97	42.19	42.97	43.14	58.04	64.43	63.78	64.45	60.94
Non-binary	0.39	0.39	0.00	0.00	0.00	0.78	0.40	0.39	0.00	0.00
Another term	0.39	0.00	0.39	0.00	0.39	0.00	0.00	0.00	0.00	0.00
Prefer not to say	0.39	0.00	0.00	0.39	0.39	0.00	0.00	0.00	0.00	0.39
Highest education level (%):										
No tertiary degree	66.02	71.48	68.75	68.75	70.98	70.59	74.70	70.87	62.50	69.92
Tertiary degree	33.98	28.52	31.25	31.25	29.02	29.41	25.30	29.13	37.50	30.08
Annual Household income (%):										
< $25,000	3.13	5.86	5.08	5.47	3.14	7.06	3.95	3.94	5.08	5.86
$25,000-$45,000	15.23	10.55	13.28	10.94	14.12	10.98	9.49	7.09	8.98	10.16
$45,001-$65,000	14.06	15.23	14.45	16.02	12.55	11.76	8.70	14.96	16.41	10.55
$65,001-$85,000	10.55	10.55	11.72	11.72	15.29	13.33	6.32	8.66	12.89	11.72
$85,001-105,000	14.45	14.84	9.38	10.16	10.98	12.55	13.04	10.63	6.64	9.77
>$105,000	36.33	35.16	39.84	36.33	37.65	39.22	52.17	46.85	43.36	44.53
Prefer not to say	6.25	7.81	6.25	9.38	6.27	5.10	6.32	7.87	6.64	7.42
Use of nutrition labels on food, mean (SD) (0 = never; 1 = rarely; 2 = occasionally; 3 = often; 4 = always)	3.05 (1.00)	3.14 (1.04)	2.96 (1.08)	3.03 (1.02)	2.97 (1.10)	3.04 (1.06)	3.09 (1.02)	3.12 (0.96)	3.18 (1.01)	3.07 (1.07)

Understanding of nutrition labels on food, mean (SD) (1 = very hard to understand; 7 = very easy to understand)	4.44 (1.45)	4.65 (1.35)	4.41 (1.49)	4.49 (1.48)	4.60 (1.51)	4.54 (1.40)	4.53 (1.43)	4.60 (1.35)	4.69 (1.43)	4.57 (1.44)
Importance of health and weight in drink choice, mean (SD) (1 = not at all important; 7 = very important)	4.47 (1.42)	4.50 (1.49)	4.39 (1.38)	4.18 (1.38)	4.48 (1.51)	4.48 (1.37)	4.44 (1.43)	4.41 (1.42)	4.55 (1.42)	4.32 (1.44)
Total AUDIT-C, mean (SD)	4.07 (2.31)	4.28 (2.28)	4.11 (2.16)	4.39 (2.35)	4.35 (2.39)	4.31 (2.26)	4.29 (2.43)	4.26 (2.32)	4.25 (2.42)	4.33 (2.35)
Diabetes status (%):										
Yes	8.98	6.64	5.86	8.20	5.49	4.31	5.53	6.30	4.69	4.30
No	91.02	93.36	94.14	91.80	94.51	95.69	94.47	93.70	95.31	95.70

Appendix 8: Full ANCOVA results controlling for baseline measures

Appendix 8 presents the full ANCOVA results for the following outcome measures: perceived healthiness, perceived harmfulness to health, and perceived energy content. Each analysis was a two-way factorial ANCOVA (type of label x type of alcoholic beverage) controlling for baseline measures (age, gender, level of alcohol consumption, use and understanding of nutrition information on food labels, importance of health and weight in food and drink choices, diabetes status). Thirteen participants were excluded from these analyses (total N = 2,540) given that they did not identify as male or female, and it was not possible to include a third gender category due to the low sample size.

Perceived healthiness

There was a statistically significant main effect of type of label (F (4, 2523) = 25.48, p < 0.001) and no statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2523) = 0.96, p = 0.427). Follow-up t-tests showed that participants who saw Label C (sugar claims + NIPs) and Label D (carbohydrate claims + NIPs) rated the beverages as statistically significantly healthier (adjusted means = 4.21 and 4.10, respectively) than those who saw Label B (energy statement – control 2 for claims; adjusted mean = 3.69; both p values < 0.001). Participants who saw Label A (no claim, NIP) rated the beverages as statistically significantly healthier (adjusted mean = 4.01) than those who saw Label E (no claim, no NIP – control for NIPs; adjusted mean = 3.53; p < 0.001). There were no other statistically significant differences (p values > 0.05).

The amount of variance accounted for by the ANCOVA model slightly increased compared to the initial ANOVA test (8% vs. 3.8% based on adjusted R^2 values). The importance of health and weight in food and drink choices, baseline levels of alcohol consumption, and use and understanding of nutrition information on food labels were statistically significant predictors of participants' perceived healthiness of the beverages (all main effects < 0.05).

Perceived harmfulness to health

That is, there was a statistically significant main effect of type of label (F (4, 2523) = 8.30, p < 0.001) and a statistically significant interaction between type of label and type of alcoholic beverage (F (4, 2523) = 2.90, p = 0.021). Follow up t-tests for RTDs showed that participants who saw Label C (sugar claims + NIPs) rated the beverages as statistically significantly *less* harmful to health (adjusted mean = 4.01) than those who saw Label B (energy statement – control 2 for claims; adjusted mean = 4.34) on RTDs (p = 0.002). For beers, follow-up t-tests showed that participants who saw Label D (carbohydrate claims + NIPs) rated the beverages as statistically significantly less harmful to health (adjusted mean = 3.81) than those who saw Label B (energy statement – control 2 for claims; adjusted mean = 4.21) on beers (p < 0.001). Participants who saw Label A (no claim, NIP) on beer also rated the beverages as statistically significantly less harmful to health (adjusted mean = 3.97) than those who saw Label E (no claim, no NIP – control for NIPs; adjusted mean = 4.37) on beer (p <

0.001). There were no other statistically significant differences between the labelling groups for either beverage type (all *p* values > 0.05).

The amount of variance accounted for by the ANCOVA model slightly increased compared to the initial ANOVA test (3.1% vs. 1.9% based on adjusted R^2 values). Age and the importance of health and weight in food and drink choices were statistically significant predictors of participants' perceived harmfulness to health of the beverages (all main effects < 0.05).

Perceived energy content

There was a statistically significant main effect of type of label (*F* (4, 2523) = 9.68, *p* < 0.001) and no statistically significant interaction between type of label and type of alcoholic beverage (*F* (4, 2523) = 1.17, *p* = 0.321). Follow-up t-tests showed that participants who saw Label C (sugar claims + NIPs) and Label D (carbohydrate claims + NIPs) rated the beverages as statistically significantly *lower* in energy (adjusted means = 3.98 and 4.09, respectively) than those who saw Label B (energy statement – control 2 for claims; adjusted mean = 4.29; *p* < 0.001 and *p* = 0.006, respectively). Participants who saw Label A (no claim, NIP) rated the beverages as statistically significantly *lower* in energy (adjusted mean = 4.16) than those who saw Label E (no claim, no NIP – control for NIPs; adjusted mean = 4.38; *p* = 0.002).

The amount of variance accounted for by the ANCOVA model slightly increased compared to the initial ANOVA test (2.7% vs. 1.5% based on adjusted R^2 values). Gender, the importance of health and weight in food and drink choices, and diabetes status were statistically significant predictors of participants' perceived energy content of the beverages (all main effects < 0.05).

Appendix 9: Full Poisson regression results controlling for baseline measures

Appendix 9 presents the full Poisson regression results for the number of times participants' correctly chose the alcohol-free alternative. Thirteen participants were excluded from this analysis (total N = 2,540) given that they did not identify as male or female, and it was not possible to include a third gender category due to the low sample size.

Type of label, type of alcoholic beverage, the interaction between type of label and type of alcoholic beverage and baseline measures were entered as predictors. The model was run twice: once with Label A (no claim, NIP) as the control label, and once with Label B (no claim, energy statement) as the control label.

	B	Exp(B)	*p*
Model			**0.000***
Main effect of label (Label A control)			<0.001
Label A vs. Label B	0.021	1.021	0.602
Label A vs. Label C	-0.089	0.914	0.028
Label A vs. Label D	-0.088	0.916	0.030
Label A vs. Label E	-0.015	0.985	0.713
Main effect of label (Label B control)			<0.001
Label B vs. Label A	-0.021	0.980	0.602
Label B vs. Label C	-0.110	0.896	0.006
Label B vs. Label D	-0.109	0.897	0.007
Label B vs. Label E	0.035	0.965	0.373
Label by beverage interaction			0.101
Gender (male vs. female)[#]	0.084	1.088	<0.001
Age	0.002	1.002	<0.001
Total AUDIT-C	-0.008	0.992	0.035
Use of nutrition labels on food	0.041	1.042	<0.001
Understanding of nutrition labels on food	-0.016	0.984	0.020
Importance of health and weight in drink choice	-0.023	0.978	0.001
Diabetes status	-0.032	0.969	0.412

* This p value tested whether the model was statistically significant. Changing the control condition does not affect the overall significance of the model, therefore this is only reported once.

[#] Gender was coded as: male = 1; female = 2, with male as the reference category

Appendix 10: Full hierarchical binary logistic regression results controlling for baseline measures

Appendix 10 presents the full hierarchal binary logistic regression results for the energy ranking task. Thirteen participants were excluded from these analyses (total N = 2,540) given that they did not identify as male or female, and it was not possible to include a third gender category due to the low sample size.

Type of group (consistently formatted energy content information vs. inconsistently formatted energy content information) was entered at stage 1 (model 1), whereas baseline measures were entered at stage 2 (model 2).

Ability to correctly rank all beverages in order

	B	Exp(B)	*p*	Nagelkerke R^2
Model 1			**0.721***	**0.000**
Main effect of group	-0.028	0.972	0.721	
Model 2			**<0.001***	**0.059**
Main effect of group	-0.006	0.994	0.941	
Gender (male vs. female)[#]	0.354	1.424	<0.001	
Age	-0.016	0.984	<0.001	
Total AUDIT-C	-0.059	0.942	<0.001	
Use of nutrition labels on food	0.188	1.21	<0.001	
Understanding of nutrition labels on food	-0.006	0.994	0.834	
Importance of health and weight in drink choice	-0.130	0.878	<0.001	
Diabetes status	-0.341	0.711	0.053	

* These p values tested whether the model was statistically significant

[#] Gender was coded as: male = 1; female = 2, with male as the reference category

Ability to correctly identify the beverages that were lowest and highest in energy

	B	Exp(B)	*p*	Nagelkerke R^2
Model 1			**0.435***	**0.000**
Main effect of group	-0.063	0.939	0.435	
Model 2			**<0.001***	**0.044**
Main effect of group	-0.047	0.954	0.563	
Gender (male vs. female)[#]	0.318	1.37	<0.001	
Age	-0.013	0.987	<0.001	
Total AUDIT-C	-0.052	0.949	0.004	
Use of nutrition labels on food	0.177	1.193	<0.001	
Understanding of nutrition labels on food	-0.024	0.976	0.436	
Importance of health and weight in drink choice	-0.096	0.909	0.002	
Diabetes status	-0.350	0.704	0.041	

* These p values tested whether the model was statistically significant
[#] Gender was coded as: male = 1; female = 2, with male as the reference category

Ability to correctly identify the beverage that was lowest in energy

	B	Exp(B)	*p*	Nagelkerke R^2
Model 1			**0.198***	**0.001**
Main effect of group			0.198	
Model 2			**<0.001***	**0.041**
Main effect of group	-0.093	0.912	0.276	
Gender (male vs. female)[#]	0.261	1.298	0.003	
Age	-0.012	0.988	<0.001	
Total AUDIT-C	-0.049	0.952	0.007	
Use of nutrition labels on food	0.182	1.200	<0.001	
Understanding of nutrition labels on food	-0.021	0.979	0.512	
Importance of health and weight in drink choice	-0.095	0.909	0.003	
Diabetes status	-0.421	0.656	0.014	

* These p values tested whether the model was statistically significant
[#] Gender was coded as: male = 1; female = 2, with male as the reference category